

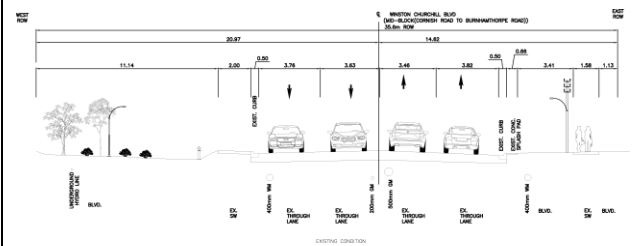
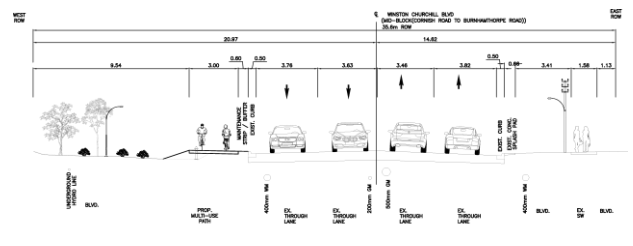
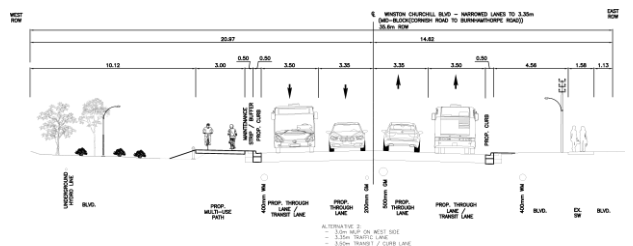
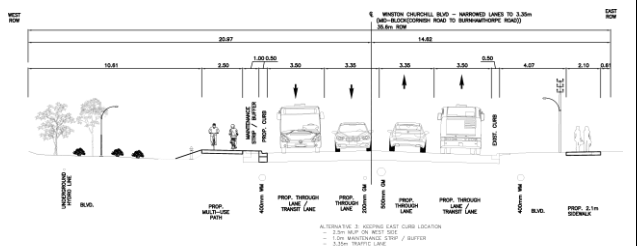
Winston Churchill Boulevard Integrated Road Project
Assessment of Alternative Design Options
Location #1: 60m North of Burnhamthorpe Road

<div>Alternatives</div> <div>Existing</div> <div></div>	<div>Alternative 1a</div> <div>MUT</div> <div></div>	<div>Alternative 1b</div> <div>MUT and Narrowed Traffic Lanes</div> <div><div>ALTERNATIVE 1b MUT AND NARROWED TRAFFIC LANES - 3.0m MUT ON WEST SIDE - 3.35m TRANSPORTATION LANE / BICYCLE LANE - 3.5m TRANSIT / CURB LANE - 3.0m TRANSIT</div></div>
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	<ul style="list-style-type: none">• Maintains existing separation buffer of 2.54 m on the east side.• Cross-rides are to be provided at all intersections to connect MUTs.	<ul style="list-style-type: none">• Increase in the separation buffer of 3.77 m on the east side.• Cross-rides are to be provided at all intersections to connect MUTs.
Potential for pedestrian and cyclist conflicts	Acceptable <ul style="list-style-type: none">• Cyclists and pedestrians share the MUT facility on the west side.	Acceptable <ul style="list-style-type: none">• Cyclists and pedestrians share the MUT facility on the west side.
Noise impacts	Acceptable <ul style="list-style-type: none">• No significant increase in noise levels.• Complete replacement of the noise wall (Barrier A) south of Unity Drive/Gate.	
Technical Environment		
Traffic and Transit Operations	Acceptable <ul style="list-style-type: none">• Minimal impacts to traffic and transit operations.• Install shelter at the southbound far side stop at Winston Churchill Blvd/Unity Dr• Bus landing pad to be 2x15m per MiWay Memo.• MUT may need to wraparound the proposed bus landing pad on the west side.	
Ability to accommodate emergency vehicles and other larger vehicles	Acceptable <ul style="list-style-type: none">• All lanes are able to accommodate emergency vehicles and other larger vehicles.	
Curb impacts	Acceptable <ul style="list-style-type: none">• Travel lane widths are maintained as existing. Existing curbs will not be impacted.	Less Preferred <ul style="list-style-type: none">• Narrowing travel lanes will result in curb impacts.
Ability to reduce vehicular speeds	Less Preferred <ul style="list-style-type: none">• Existing lane widths maintained. No change to vehicular speeds expected.• Does not address safety concerns associated with high PSI index near Burnhamthorpe Rd/Winston Churchill Blvd.	More Preferred <ul style="list-style-type: none">• Narrowing travel lanes:<ul style="list-style-type: none">- Increases driver attention,- Provides a traffic calming effect by reducing vehicular speeds, and- Improves pedestrian/cyclist comfort.
Improve safety for all modes of travel	Less Preferred <ul style="list-style-type: none">• No adjustment to travel lane widths.• Increased buffer for active transportation facilities on the west side.• Exceeds AODA requirement for sidewalk widths.	More Preferred <ul style="list-style-type: none">• Narrow lanes reduce the speed of vehicles.• Increased buffer for active transportation facilities on both sides.• Exceeds AODA requirement for sidewalk widths.
Utility impacts	Acceptable <ul style="list-style-type: none">• Two light poles requiring relocation.	Acceptable <ul style="list-style-type: none">• Two light poles requiring relocation.
Financial Environment		
Capital costs	Acceptable <ul style="list-style-type: none">• Low to moderate capital costs:	Less Preferred <ul style="list-style-type: none">• Moderate to high capital costs:

	<ul style="list-style-type: none">- Replacing sidewalk with a MUT- Utility impacts	<ul style="list-style-type: none">- Replacing sidewalk with a MUT- Lane narrowing and curb impacts- Utility impacts
Maintenance costs	Acceptable <ul style="list-style-type: none">• Maintenance costs similar to existing.	
Recommendation	Not Recommended <ul style="list-style-type: none">• Low impact to woodlots and greenspace.• Does not address identified midblock and intersection safety issues.• Continuity: MUT provides pedestrian and cyclist continuity on the west side.	Recommended <ul style="list-style-type: none">• Low impact to woodlots and greenspace.• Improved safety: Narrowed travel lanes serve a traffic calming function.• Continuity: MUT provides pedestrian and cyclist continuity on the west side.• Increased buffer provided for pedestrians on the east side.• Higher capital costs.
Legend: More Preferred Acceptable Less Preferred		

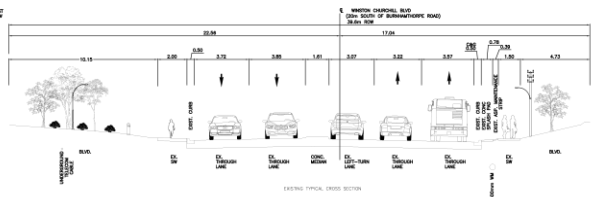
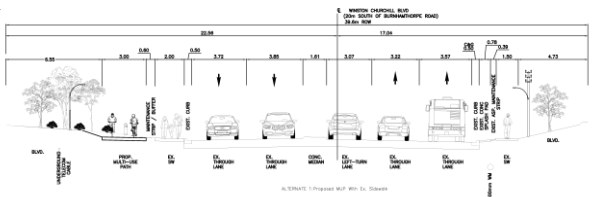
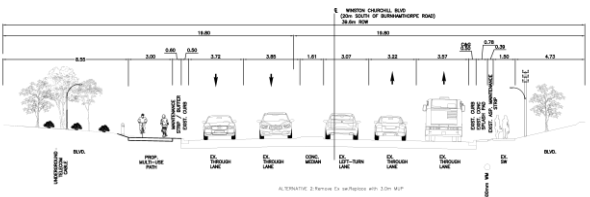
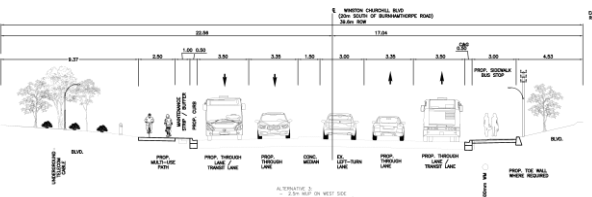
Winston Churchill Boulevard Integrated Road Project
Assessment of Alternative Design Options
Location #2: Midblock – Cornish Road to Burnhamthorpe Road

<p>Alternatives Existing</p>  <p>EXISTING CONDITION</p>	<p>Alternative 2a MUT</p>  <p>ALTERNATIVE 1: MUT</p>	<p>Alternative 2b MUT and Narrowed Traffic Lanes</p>  <p>ALTERNATIVE 2: MUT and Narrowed Traffic Lanes</p>	<p>Alternative 2c MUT and Narrowed Traffic Lanes (keeping east curb location)</p>  <p>ALTERNATIVE 3: MUT and Narrowed Traffic Lanes (keeping east curb location)</p>
<p>Winston Churchill Blvd Mid-Block (between The Collegeway and Cornish Rd/Split Maple Gate)</p>	<ul style="list-style-type: none">• Maintain 4 travel lanes.• Replace existing 2.0m sidewalk with a 3.0m MUT on the west side.• Maintain existing 1.58m sidewalk on the east side.	<ul style="list-style-type: none">• Curbs adjusted for narrower travel lanes (3.35m travel lane and 3.5m transit/curb lane).• Replace existing 2.0m sidewalk with a 3.0m MUT on the west side.	<ul style="list-style-type: none">• Curbs adjusted for narrower travel lanes (3.35m travel lane and 3.5m transit/curb lane).• Replace existing 2.0m sidewalk with a 2.5m MUT on the west side.• Widen existing 1.58m sidewalk to 2.1m on the east side.
<p>Natural Environment</p>			
<p>Woodlot/Tree Preservation <i>* Note: The exact quantity of impacted trees or infrastructure will be confirmed for the preferred alternative.</i></p>	<p>Acceptable</p> <ul style="list-style-type: none">• Trees will be maintained within the boulevards.• Boulevard green space reduced.• Complete replacement of private noise wall between The Collegeway and Cornish Rd/Split Maple Gate to be installed in the same location as the current barriers, but on the public side of the property line, to preserve trees immediately adjacent to the existing structures.• Minor to moderate encroachment into tree protection zones for approximately 62 trees from fill material. However, these encroachments are not anticipated impact the	<p>Acceptable</p> <ul style="list-style-type: none">• Trees will be maintained within the boulevards.• Boulevard green space reduced.• Complete replacement of private noise wall between The Collegeway and Cornish Rd/Split Maple Gate to be installed in the same location as the current barriers, but on the public side of the property line, to preserve trees immediately adjacent to the existing structures.• Minor to moderate encroachment into tree protection zones for approximately 48 trees from fill material. However, these encroachments are not anticipated impact the	<p>Acceptable</p> <ul style="list-style-type: none">• Trees will be maintained within the boulevards.• Boulevard green space reduced.• Complete replacement of private noise wall between The Collegeway and Cornish Rd/Split Maple Gate to be installed in the same location as the current barriers, but on the public side of the property line, to preserve trees immediately adjacent to the existing structures.• Minor encroachment into tree protection zones for approximately 37 trees from fill material. However, these encroachments are

	long-term health and structural condition of trees.	long-term health and structural condition of trees.	not anticipated impact the long-term health and structural condition of trees.
Drainage and Stormwater Management	<div>Acceptable</div> <ul style="list-style-type: none">No identified drainage or stormwater management issues.		
Socio-Economic Environment			
Connectivity and continuity of pedestrian and cycling facilities	<div>Acceptable</div> <ul style="list-style-type: none">Improves connectivity for cyclists on the west side.Maintains sidewalk connectivity on the east side.Cross-rides are to be provided at all intersections to connect MUTs.		
Pedestrian and cyclist comfort and separation from motor vehicles	<div>Acceptable</div> <ul style="list-style-type: none">Increase in the separation buffer on the west side to 1.1m.Maintains existing separation buffer of 4.57 m on the east side.	<div>Acceptable</div> <ul style="list-style-type: none">Increase in the separation buffer on the west side to 1.0m.Increase in the separation buffer to 5.06m on the east side.	<div>Acceptable</div> <ul style="list-style-type: none">Increase in the separation buffer on the west side to 1.5m.Maintains existing separation buffer of 4.57 m on the east side.
Potential for pedestrian and cyclist conflicts	<div>Acceptable</div> <ul style="list-style-type: none">Cyclists and pedestrians share the MUT facility on the west side.	<div>Acceptable</div> <ul style="list-style-type: none">Cyclists and pedestrians share the MUT facility on the west side.	<div>Acceptable</div> <ul style="list-style-type: none">Cyclists and pedestrians share the MUT facility on the west side.
Noise impacts	<div>Acceptable</div> <ul style="list-style-type: none">No significant increase in noise levels.Maintenance of existing noise barrier (Barrier C) exhibiting minor deficiencies.Complete replacement of the noise wall (Barrier D) on the west side.		
Technical Environment			
Traffic and Transit Operations	<div>Acceptable</div> <ul style="list-style-type: none">Minimal impacts to traffic and transit operations.Bus landing pad to be 2x15m per MiWay Memo.Install shelter at the southbound near side stop at Winston Churchill Blvd/The Collegeway.		
Ability to accommodate emergency vehicles and other larger vehicles	<div>Acceptable</div> <ul style="list-style-type: none">All lanes are able to accommodate emergency vehicles and other larger vehicles.		
Curb impacts	<div>More Preferred</div> <ul style="list-style-type: none">Travel lane widths are maintained as existing. Existing curbs will not be impacted.	<div>Less Preferred</div> <ul style="list-style-type: none">Narrowing travel lanes will result in curb impacts on both sides.	<div>Acceptable</div> <ul style="list-style-type: none">Narrowing travel lanes will result in curb impacts on one side.
Ability to reduce vehicular speeds	<div>Less Preferred</div>	<div>More Preferred</div>	<div>More Preferred</div>

	<ul style="list-style-type: none">Existing lane widths maintained. No change to vehicular speeds expected.	<ul style="list-style-type: none">Narrowing travel lanes:<ul style="list-style-type: none">- Increases driver attention,- Provides a traffic calming effect by reducing vehicular speeds, and- Improves pedestrian/cyclist comfort.	<ul style="list-style-type: none">Narrowing travel lanes:<ul style="list-style-type: none">- Increases driver attention,- Provides a traffic calming effect by reducing vehicular speeds, and- Improves pedestrian/cyclist comfort.
Improve safety for all modes of travel	Less Preferred <ul style="list-style-type: none">No adjustment to travel lane widths.Increased buffer for active transportation facilities on the west side.Wider active transportation facility on the west side.	More Preferred <ul style="list-style-type: none">Narrow lanes reduce the speed of vehicles.Increased buffer for active transportation facilities on both sides.Wider active transportation facility on the west side.	More Preferred <ul style="list-style-type: none">Narrow lanes reduce the speed of vehicles.Increased buffer for active transportation facilities on the west side.Wider active transportation facility on both sides.
Utility impacts	Acceptable <ul style="list-style-type: none">No light pole or hydro pole requiring relocation.		
Financial Environment			
Capital costs	More Preferred <ul style="list-style-type: none">Low to moderate capital costs:<ul style="list-style-type: none">- Replacing sidewalk with a MUT	Less Preferred <ul style="list-style-type: none">Moderate to high capital costs:<ul style="list-style-type: none">- Narrowing travel lanes- Replacing sidewalk with a MUT- Curbs shifted on both sides	Less Preferred <ul style="list-style-type: none">Moderate to high capital costs:<ul style="list-style-type: none">- Narrowing travel lanes- Replacing sidewalk with a MUT- Curb shifted on one side- Sidewalk widening
Maintenance costs	Acceptable <ul style="list-style-type: none">Maintenance costs similar to existing.		
Recommendation	Not Recommended <ul style="list-style-type: none">Low impact to woodlots and greenspace.Continuity: MUT provides pedestrian and cyclist continuity on the west side.Increased buffer provided for pedestrians/cyclists on one side.No curb impacts.Wider active transportation facility on the west side.Less capital cost required.	Not Recommended <ul style="list-style-type: none">Low impact to woodlots and greenspace.Improved safety: Narrowed travel lanes serve a traffic calming function.Continuity: MUT provides pedestrian and cyclist continuity on the west side.Increased buffer provided for pedestrians/cyclists on both sides.Curb impacts on both sides.Wider active transportation facility on the west side.Higher capital costs.	Recommended <ul style="list-style-type: none">Low impact to woodlots and greenspace.Improved safety: Narrowed travel lanes serve a traffic calming function.Continuity: MUT provides pedestrian and cyclist continuity on the west side.Increased buffer provided for pedestrians/cyclists on one side.Curb impacts on one side.Wider active transportation facility on both sides.Higher capital costs.
Legend: More Preferred Acceptable Less Preferred			

Winston Churchill Boulevard Integrated Road Project
Assessment of Alternative Design Options
Location #3: 20m South of Burnhamthorpe Road

<div>Alternatives</div> <div>Existing</div> <div></div>	<div>Alternative 3a</div> <div>Proposed MUT with Existing Sidewalk</div> <div></div>	<div>Alternative 3b</div> <div>Remove Existing Sidewalk Replace with 3.0m MUT</div> <div></div>	<div>Alternative 3c</div> <div>MUT and Narrowed Traffic Lanes</div> <div></div>
Winston Churchill Blvd 20m South of Burnhamthorpe Rd (between Cornish Rd/Split Maple Gate and Burnhamthorpe Rd)	<ul style="list-style-type: none">• Maintain 4 travel lanes and existing left turn lane.• Maintain existing 1.5m sidewalk on the east side and 2.0m sidewalk on the west side.• Proposed 3.0m MUT on west side.	<ul style="list-style-type: none">• Maintain 4 travel lanes and existing left turn lane.• Maintain existing 1.5m sidewalk on east side.• Replace existing sidewalk on the west side with a 3.0m MUT.	<ul style="list-style-type: none">• Curbs adjusted for narrower travel lanes (3.35m travel lane and 3.5m transit/curb lane).• Existing sidewalk on east side widened to 3.0m.• Replace existing sidewalk on the west side with a 2.5m MUT.
Natural Environment			
Woodlot/Tree Preservation <i>* Note: The exact quantity of impacted trees or infrastructure will be confirmed for the preferred alternative.</i>	<div>Less Preferred</div> <ul style="list-style-type: none">• Existing shrubs on the west side impacted.• Moderate encroachment into tree protection zones, injury to 4 trees with anticipated significant root pruning to accommodate grade cut. At least 3 tree removals.	<div>Acceptable</div> <ul style="list-style-type: none">• Boulevard green space reduced.• Trees will be maintained within the boulevards.• Minor encroachment into tree protection zones, anticipated minimal root pruning for 5 trees.	<div>Acceptable</div> <ul style="list-style-type: none">• Boulevard green space reduced.• Trees will be maintained within the boulevards.• Minor encroachment into tree protection zones with 5 trees subject to minor root compaction, and no anticipated root pruning.
Drainage and Stormwater Management	<div>Acceptable</div> <ul style="list-style-type: none">• Drainage and stormwater management improvements on the west side by realigning the existing swale, replacing the existing swale catch basin, adding ditch inlets, and incorporating sufficient gaps underneath noise walls for flow.		
Socio-Economic Environment			
Connectivity and continuity of pedestrian and cycling facilities	<div>More Preferred</div> <ul style="list-style-type: none">• Improves connectivity for cyclists on the west side.• Maintains sidewalk connectivity on both sides.	<div>Acceptable</div> <ul style="list-style-type: none">• Improves connectivity for cyclists on the west side.	<div>Acceptable</div> <ul style="list-style-type: none">• Improves connectivity for cyclists on the west side.

	<ul style="list-style-type: none">• Cross-rides are to be provided at all intersections to connect MUTs.	<ul style="list-style-type: none">• Maintains sidewalk connectivity on the east side.• Cross-rides are to be provided at all intersections to connect MUTs.	<ul style="list-style-type: none">• Maintains sidewalk connectivity on the east side.• Cross-rides are to be provided at all intersections to connect MUTs.
Pedestrian and cyclist comfort and separation from motor vehicles	Less Preferred <ul style="list-style-type: none">• Maintains existing separation buffer (0.5m and 1.67m wide on the west and east side, respectively) for active transportation facilities located adjacent to motor vehicle lanes.	Acceptable <ul style="list-style-type: none">• Slight increase in the separation buffer on the west side to 1.1m.• Maintains existing separation buffer of 1.67 m on the east side.	Acceptable <ul style="list-style-type: none">• Increase in the separation buffer on the west side to 1.5m.• Decrease in the separation buffer to minimum (0.5m) on the east side.
Potential for pedestrian and cyclist conflicts	More Preferred <ul style="list-style-type: none">• Cyclists and pedestrians are provided dedicated and separated facilities on the west side, divided by a minimum (0.6m) buffer strip.	Acceptable <ul style="list-style-type: none">• Cyclists and pedestrians share the MUT facility on the west side.	Acceptable <ul style="list-style-type: none">• Cyclists and pedestrians share the MUT facility on the west side.
Noise impacts	Acceptable <ul style="list-style-type: none">• No significant increase in noise levels.• Maintenance of existing noise barrier (Barrier I) exhibiting minor deficiencies.		
Technical Environment			
Traffic and Transit Operations	Acceptable <ul style="list-style-type: none">• Minimal impacts to traffic and transit operations.• Bus landing pad to be 2x15m per MiWay Memo.	Acceptable <ul style="list-style-type: none">• Minimal impacts to traffic and transit operations.• MUT may need to wraparound the proposed bus landing pad on the west side.	More Preferred <ul style="list-style-type: none">• Minimal impacts to traffic and transit operations• MUT may need to wraparound the proposed bus landing pad on the west side.• Regraded and widened bus stop and sidewalk width on the east side.
Ability to accommodate emergency vehicles and other larger vehicles	Acceptable <ul style="list-style-type: none">• All lanes are able to accommodate emergency vehicles and other larger vehicles.		
Curb impacts	Acceptable <ul style="list-style-type: none">• Travel lane widths are maintained as existing. Existing curbs will not be impacted.	Acceptable <ul style="list-style-type: none">• Travel lane widths are maintained as existing. Existing curbs will not be impacted.	Less Preferred <ul style="list-style-type: none">• Narrowing travel lanes will result in curb impacts.
Ability to reduce vehicular speeds	Less Preferred <ul style="list-style-type: none">• Existing lane widths maintained. No change to vehicular speeds expected.	Less Preferred <ul style="list-style-type: none">• Existing lane widths maintained. No change to vehicular speeds expected.	More Preferred <ul style="list-style-type: none">• Narrowing travel lanes:<ul style="list-style-type: none">- Increases driver attention,

	<ul style="list-style-type: none">Does not address safety concerns associated with high PSI index near Burnhamthorpe Rd/Winston Churchill Blvd.	<ul style="list-style-type: none">Does not address safety concerns associated with high PSI index near Burnhamthorpe Rd/Winston Churchill Blvd.	<ul style="list-style-type: none">Provides a traffic calming effect by reducing vehicular speeds, andImproves pedestrian/cyclist comfort.
Improve safety for all modes of travel	Less Preferred <ul style="list-style-type: none">No adjustment to travel lane widths.MUT provides separation from general vehicle traffic and dedicated space for cyclistsSeparate spaces provided for pedestrians and cyclists.AODA-compliant sidewalks.	Less Preferred <ul style="list-style-type: none">No adjustment to travel lane widths.MUT provides separation from general vehicle traffic and dedicated space for cyclists but does not provide separate spaces for pedestrians and cyclists.AODA-compliant sidewalks.	More Preferred <ul style="list-style-type: none">Narrow lanes reduce the speed of vehicles.MUT provides separation from general vehicle traffic and dedicated space for cyclists but does not provide separate spaces for pedestrians and cyclists.Exceeds AODA requirement for sidewalk widths.Sidewalk widened and slope gradient reduced on the east side at the bus stop (#4505).
Utility impacts	Less Preferred <ul style="list-style-type: none">No light pole or hydro pole relocation required.Fire hydrants affected on the west side.	More Preferred <ul style="list-style-type: none">No light pole or hydro pole relocation required.	More Preferred <ul style="list-style-type: none">No light pole or hydro pole relocation required.
Financial Environment			
Capital costs	Acceptable <ul style="list-style-type: none">Moderate capital costs:<ul style="list-style-type: none">Addition of MUTRelocation of fire hydrants	More Preferred <ul style="list-style-type: none">Low to moderate capital costs:<ul style="list-style-type: none">Replacing sidewalk with a MUT	Less Preferred <ul style="list-style-type: none">Moderate to high capital costs:<ul style="list-style-type: none">Sidewalk widening and grading improvementsReplacing sidewalk with a MUTLane narrowing and curb relocation
Maintenance costs	Acceptable <ul style="list-style-type: none">Maintenance costs similar to existing.		
Recommendation	Not Recommended <ul style="list-style-type: none">Potential impacts to existing shrubs and trees on the west side.Minimum AODA-compliant sidewalk width met on the east side.Improved safety: Separate facilities provided for cyclists and pedestrians on the west side, reducing the potential for conflict.Does not address identified midblock and intersection safety issues.	Not Recommended <ul style="list-style-type: none">Low impact to woodlots and greenspace.Minimum AODA-compliant sidewalk width met on the east side.Does not address identified midblock and intersection safety issues.Continuity: MUT provides pedestrian and cyclist continuity on the west side.	Recommended <ul style="list-style-type: none">Low impact to woodlots and greenspace.Improved safety: Narrowed travel lanes serve a traffic calming function.Continuity: MUT provides pedestrian and cyclist continuity on the west side.Improved comfort: Regraded and expanded bus stop and sidewalk area on the east side to provide pedestrians and transit users a safer and more comfortable loading/unloading zone.Higher capital costs.

	<ul style="list-style-type: none">• Continuity: MUT provides pedestrian and cyclist continuity on the west side.• Fire hydrant will require relocation.		
Legend: More Preferred Acceptable Less Preferred			