Evaluation of the Two Alternatives

Criteria	Objectives	Indicators	Alternative A Signalized Intersections	Alternative B Roundabouts at Rothbourne, Kittiwake/Echowoods	Notes
Corridor Land Use and Access	A road corridor that enables growth, development and business prosperity	I. maximization for all-movement access directly to abutting lots in the short-term	●		With Alternative B, some lots near the roundabouts would have diminished access
		II. maximization for all-movement access directly to abutting lots in the long-term	●	●	Both Alternatives have the possibility of the two-way left-turn lanes being replaced with medians should conditions warrant
Land Implications	A road corridor that minimizes the effects on adjacent private properties	I. minimization of amount of Right-of-Way acquisition required at mid-block locations	●	●	With Alternative B, some lots near the roundabouts would have diminished access
		II. minimization of amount of Right-of-Way acquisition required at intersections	●		Alternative B requires a greater ROW widening at the roundabout corners
		III. minimization of impact on functionality/use of the lot (on-site parking, front yards)	●		Alternative B creates some challenges in maintaining existing land use and site configuration at the roundabout corners
Building Implications	A road corridor that minimizes the effect on individual buildings and on-site private wastewater systems	I. minimization of the requirement to alter/demolish existing or proposed buildings	●		Alternative B may require the demolition of buildings at roundabout corners if sites cannot be rearranged in a functional manner
		II. minimization of impact on on-site private wastewater systems	●		Alternative B has greater likelihood of displacing systems at the roundabout corners
Visual Environment	A road corridor with a pleasing visual environment	I. maximization of attractiveness of the corridor		●	Alternative B has greater potential for greening and attractiveness at the roundabouts
Sustainable Landscaping	A road corridor that allows for green design features	I. maximization of space for trees and landscaping		●	Alternative B provides additional space for landscaping in the roundabout islands
Noise	A road corridor with lower noise levels	I. maximization of separation between noise sources and receivers	●		Alternative B brings the noise generating roadway closer to adjacent buildings at the roundabout corners
Vibration	A road corridor with lower vibration levels experienced by adjacent structures	I. maximization of separation between vibration source (primarily trucks and buses) and receivers	●		Alternative B brings the noise generating roadway closer to adjacent buildings at the roundabout corners
Outdoor Air Quality	A road corridor with reduced contributions to ambient air quality criteria	I. maximization of fuel efficient driving behaviour	●	●	Both alternatives are projected to have similar fuel consumption and emission
Life Cycle Costs	A road that is affordable to construct and maintain	I. minimization of capital infrastructure cost	●		Alternative B is $2.652M more/less expensive
		II minimization of road and infrastructure maintenance and replacement cost		●	Alternative B has a slightly lesser maintenance and replacement cost as fewer traffic signals are required
		III. minimization of property acquisition cost	●		Alternative B has a greater land acquisition cost
Pedestrian Convenience, Comfort, and Safety	A road corridor with appropriate pedestrian capacity, safety and comfort	I. maximization of separation of pedestrian route from vehicle travel lanes	●	●	Both alternatives achieve good separation of pedestrians from travel lanes
		II. minimization of length of travel	●		Pedestrians using roundabout crossings have a longer distance to travel
		III. minimization of crosswalk length		●	Crosswalks at the roundabouts are include splitter islands and hence shorter individual crosswalks

● Preferred or Equally Preferred

Evaluation of the Two Alternatives

Criteria	Objectives	Indicators	Alternative A Signalized Intersections	Alternative B Roundabouts at Rothbourne, Kittiwake/Echowoods	Notes
Cycling Convenience, Comfort, and Safety	A road corridor where cyclists are well-separated from moving vehicles	I. maximization of horizontal and/or vertical separation of cyclists from vehicles	●	●	Both alternatives achieve good separation of cyclists from travel lanes (on multi-use pathways)
		II. maximization of a comfortable environment for cyclists of all ages and all abilities	●	●	Both alternatives result in a very comfortable environment for cycling (on multi-use pathways)
		III. minimization of length of travel	●		Cyclists using roundabout crossings have a longer distance to travel
		IV. maximization of safety of left turn movements	●	●	Both alternatives require cyclists using the multi-use pathway to perform a two-stage crossing
Universal Accessibility	A road corridor that can be used by all users of all abilities	I. provision of sidewalks with clear zone not less than 1.8 m	●	●	Both alternatives have sufficient clear walking width
		II. provision for street design features that enable barrier free movement	●	●	Both alternatives provide barrier free movement
		III. maximization of protection at crossings	●		Alternative A provides protected phase visible and audible crosswalk signals
Bus Transit Travel Time and Reliability	a road corridor where passenger vehicles, emergency service vehicles, and trucks move safely and efficiently through the corridor	I. maximization of consistency of travel time along the corridor		●	Alternative B results in slightly improved reliability
Motor Vehicle Safety and Performance	a road corridor where passenger vehicles, emergency service vehicles, and trucks move safely and efficiently through the corridor	I. maximization of vehicle Level of Service at intersections	●		Alternative A provides slightly improved level of service (LOS) for vehicles at Kittiwake intersection. Similar Los at Rothbourne
		II. minimization of roadway width (curb to curb width) to increase friction and reduce travel speed	●	●	Both alternatives have the same curb to curb width in mid-block locations along the corridor
		III. maximization of safety of left turning movements at intersections		●	Alternative B provides for less-vulnerable left-turn movements at the two roundabout intersections
		IV. maximization of safety of left turning movements at mid-block	●	●	Both alternatives provide for left-turns in mid-block locations
		V. maximization of safety of left turning movements at mid-block in long-term	●	●	Both alternatives have the possibility of the median needing to be filled in over the long term to address safety issues that may emerge
		VI. minimization of duration of travel time along the corridor	●	●	Both alternatives have similar projected travel times through the entire corridor. Overall intersection spacing and traffic patterns result in good progression opportunities using traffic signals

● **Preferred or Equally Preferred**