Evaluation Criteria
Guelph Protected Cycling Network

Table 1: Suitability of Design Option as an All Ages and Abilities Cycling Facility Pre-Screening

Criterion	Ideal Condition

Comfortable Cycle Facility Width and Separation from Vehicular Traffic	• Greatest suitability for all ages and abilities, based on:
	  ○ Optimal facility width
	  ○ Physical separation from traffic.

Cycling Access to Key Destinations	• Safe, accessible cycling facilities are provided between key destinations along both sides of the corridor. • Clearly delineated locations for cyclists to cross the roadway with priority are provided.
Evenness of Cycling Facility	• Cycle facility is at one level, without elevation changes (i.e. ramps) at driveways and entrances.

Impact of Steep Sections on Accessibility and Safety	• Road elevation change generally less than 5% to allow for sustained cycling speeds and reduced weaving.
	• Steeper segments are limited to:
	  ○ Less than 500 m in length, for grades between 5% and 7%
	  ○ Less than 150 m in length (about a block), for grades between 7% and 8%
	  ○ Less than 30 m in length, for grades above 8%.

Rider Safety	• Lowest risk of conflicts with motorized vehicles, considering:
	  ○ Relative vehicular and cyclist location and operating speeds
	  ○ Traffic speed at conflict points
	  ○ Crossing control
	  ○ Number of contraflow conflicts with turning vehicles and potential mitigation measures
	  ○ Number of right hook conflicts and potential mitigation measures

Criterion	Ideal Condition
	○ Risk of cyclist travel in mixed traffic.[a]
	• Lowest risk of conflict between transit vehicles and cyclists, considering locations where cyclists would travel through bus loading zone.
	• Lowest risk of pedestrian and bike collisions, considering: ○ Separation of cyclists and pedestrians ○ Relative operating speeds of cyclists and pedestrians on shared facilities ○ Sudden path narrowing on shared facilities ○ Anticipated pedestrian volumes.
Cohesion	• Consistent design throughout the corridor.

Table 2: Traffic and Safety Evaluation Criteria

Criterion	Ideal Condition
Winter Maintenance Implications	• City's current winter maintenance equipment can be used to clear snow from cycling infrastructure. • Adequate space for snow storage. • Low potential for damage to cycling infrastructure from winter maintenance equipment (i.e. potential impact to bollards or raised curbs).
	• Ability to keep cycle facility clear, considering: ○ Potential for facility to become partially blocked by surface debris, including leaves ○ Relative location of catch basins and gutters to proposed cycling facility. • Clearing of snow and ice to enable all season operation of the facility.

[a] This condition was only evaluated for Eramosa Road due to the lack of existing bike lanes.

Criterion	Ideal Condition
Connectivity of Cycling and Pedestrian Facilities during Construction	• Ability to maintain connectivity during construction.
Accessibility[b]	• Width of dedicated pedestrian facilities meets Accessibility for Ontarians with Disabilities Act (AODA) standards. • Adequate space exists within the right-of-way to add rest areas on steep sections of roadways. • No conflict between cycling facility and transit alighting areas.
Traffic Delays	• Vehicular travels times through the corridor are maintained or reduced.[c]
	• Ability to accommodate auxiliary lanes for vehicular traffic.
	• Ability to move more people once the intersections are at capacity.
Public Transit	• Transit travel times through the corridor are maintained or reduced.[d]
	• Transit pads can be provided between the curb and cycle facility or adequate space exists to accommodate a shelter beyond the cycle facility and/or sidewalk.

[b] This criterion was only evaluated for Eramosa Road due to space constraints and potential related impacts to our ability to provide AODA compliant pedestrian facilities.
[c] This condition was only evaluated for Eramosa Road due to the anticipated need to reduce the number of vehicular travel lanes to accommodate the cycling facilities.
[d] This condition was only evaluated for Eramosa Road and Gordon Street due to anticipated impacts on transit travel times resulting from two or three-lane cross sections.

Criterion	Ideal Condition
Emergency Services[e]	• Least anticipated impact to emergency service response times.

Table 3: Engineering Evaluation Criteria

Criterion	Ideal Condition

Construction Complexity	• Least construction complexity associated with:
	  ○ Utility relocation requirements
	  ○ Construction staging.

Infrastructure and Road Impacts	• Fewest impacts to existing municipal infrastructure, including:
	  ○ Culvert extensions
	  ○ Bridge widening
	  ○ Impacts to roadway geometry or alignment.

Drainage	• Avoids unnecessary impacts to floodplains. • Avoids changes to existing catchbasins. • Minimizes increase in impervious surface area. • Maintains or improves existing stormwater management and drainage.
Impact on City Operations	• Minimizes interactions with existing waste collection processes.

Table 4: Natural Environment Evaluation Criteria

Criterion	Ideal Condition
Vegetation and Landscaping	• Minimal removal of vegetation. • Opportunities for landscaping enhancements. • Opportunities to incorporate Low-Impact Development (LID) features into the design.
Tree Removal	• Fewest mature trees to be removed.

[e] Due to the significant importance of maintaining or improving overall emergency service response times, the value of the scores associated with this criterion were doubled when determining a preferred alternative.

Criterion	Ideal Condition
Urban Forestry	• Boulevard space is wide enough to support mature trees without the need for soil cells.
Natural Heritage	• Least anticipated impact to designated natural heritage features.
Aquatic Species and Habitat	• Lowest potential for impacts to features containing fish and fish habitat, including Species at Risk (SAR).
Terrestrial Species and Habitat	• Lowest potential for impacts to woodlands, wetlands, candidate Significant Wildlife Habitat, and potential SAR and/or SAR habitat.

Table 5: Socio-Cultural Environment Evaluation Criteria

Criterion	Ideal Condition
Alignment with Policy	• Consistent with objectives and policies outlined in Guelph's Official Plan and Transportation Master Plan.
Cultural Heritage	• Lowest potential for impacts to structures or landscapes with cultural heritage value or potential.
Archaeological Resources	• Avoids impacts to lands with archaeological potential.
Parkland	• Least impacts to parkland.
Placemaking	• Proposed facility is consistent with or enhances the image of the corridor.
Integration with University of Guelph Campus[f]	• Alignment with Campus Master Plan. • Connections to paths and destinations on University of Guelph campus. • Ability to provide landscaped or Low Impact Development features within cycling infrastructure near University of Guelph.
Property Impacts	• Avoids or limits requirements for property acquisition.
Property Access	• Fewest property access impacts during construction and operations.

[f] This criterion was only evaluated for College Avenue and Gordon Street due to the presence of the University of Guelph campus adjacent to both of those study corridors.

Criterion	Ideal Condition
Public Opinion	• Most aligned with input from stakeholders, Indigenous communities, and the general public.[g]

Table 6: Cost Evaluation Criteria

Criterion	Ideal Condition
Capital Costs	• Lowest capital construction costs associated with: ○ Construction complexity ○ Infrastructure and road impacts.
Operation and Maintenance Costs	• Lowest anticipated operation and maintenance costs.

[g] Public input summarized in this section is general feedback received for the study; not specific to any one of the study corridors.