Appendix D – Key Design Considerations

Issue	Design Considerations
Lack of adequate active transportation along the entire corridor	The proposed design includes dedicated one-way multi-use paths along the couplet (one in each direction on both Goulet and Marion) as part of the complete streets designs. West of Youville Street proposed design includes a bi-directional multi-use path along the roadway's eastbound direction lanes (south of the roadway), and within Happyland Park where the park faces Marion Street. Along Lagimodiere Boulevard itself, between Marion Street and Dugald Road, a proposed multi-use path was designed to utilize the currently undeveloped park space that runs parallel to Brussels Street. The multi-use path also connects to a similar path proposed for Dugald Street, and a new transit lay-by on Lagimodiere Boulevard.
Desire to create complete streets infrastructure along the Marion-Goulet couplet	The Marion-Goulet Couplet Complete Streets design include curb extensions, tree planting, parking areas used for temporary patios, improved transit facilities, improved accessibility features, and integration of cycle facilities. These also align with the Norwood Grove BIZ Master Plan Visioning Report (2018).
Desire for addition of streetscape along the corridor from Youville Street eastward	The transition from protected bike lanes to a multi-use path at Youville provide the opportunity for additional greenspace and clear separation of travel modes. Functional design represents the intent to minimize the impacts of corridor improvements on Happyland Park, provide enhancements to the public space where appropriate, and convert the existing sidewalk to a wider multi-use path through the park that maintains good visibility from the road. The functional plan also includes a new ornamental fence along the park edge, an orientation node overlooking the creek, and the redevelopment of the park entrance at Dufresne Street, with seating node, secure bike parking, and gateway features. The redesigned intersections of Marion Street at Dawson Road and Panet Road allows for a broad landscaped buffer west of Panet Road and south of Dawson Road. The new green buffer and vegetated island provide a visual break for drivers and some shelter and comfort for pedestrians and cyclists in this otherwise industrial portion of the corridor.

	Along Lagimodiere Boulevard, functional designs utilize landscape features that help activate underutilized greenspaces on the west side of the roadway.
Need for improvements to the transportation network along the corridor	
1. Marion - Goulet Couplet	Both Marion Street and Goulet Street receive curb extensions for traffic calming, and to reduce pedestrian crossing lengths and define parking spaces. As such, the diamond lane along Goulet (from Youville Street to Taché Avenue), will be removed. Curb extensions will be applied to the Transit stops in Marion - Goulet Couplet which increases the bus-stop area. Transit buses will stop in the right driving lane for pick-up and drop-off of transit riders, to avoid merging in and out of traffic into the right-hand parking lane. In addition, the Transit stops have been relocated from nearside to farside stops at each intersection. The design includes a 1.8 m wide uni-directional protected bike lane on the north side of Goulet Street and south side of Marion Street with a raised concrete median barrier separating cyclists from motor vehicles. The cycling facilities are placed along the right-hand curb side of each street, and are one-way facilities following the same direction as vehicle traffic.
2. Youville Curve	The functional design realigns the westbound lanes of Marion that shift through Youville Street to Goulet Street with two back-to-back curves. This geometry reduces the risk of collisions by encouraging uniform speeds of drivers. This differs from the existing geometry which has differential speeds experienced due to small radii and reduced sight distances. The design includes upgrading the pedestrian crossing from a corridor to a coordinated half signal.
3. Marion - Archibald Intersection	Improvements to the site including widening the Archibald Street to the east from St. Catherine Street to Cherrier Street to increase right-of-way space for a new median and turn lanes. The intersection geometry includes changes to Archibald Street in the northbound direction to include two left turn lanes, two through lanes, and one right turn lane leading to a right turn cut-off; while in the southbound direction one divided left turn lane has been added.

	On Marion Street itself, a new single dedicated right turn lane was added. The geometry of the intersection was updated to include medians for all four legs of the intersection to improve access management and safety. The right turn cut-off islands were designed to be large enough for pedestrians and cyclists for the east side islands.
4. Marion – Panet-Dawson Intersections	The design decreases the vehicular workload at the intersecting three streets and improves traffic management within the area. This includes the removal of the right turn cut-off southbound Dawson to westbound Panet, where sightlines were previously limited, leading to numerous collisions documented. New left turn lanes are designed eastbound Marion Street to northbound Panet Road. New raised medians and turn lanes provides clearer direction indication to drivers while reducing confusion and conflict points.
5. Marion – Lagimodiere – Dugald Corridor	Along Lagimodiere Boulevard, the design includes three lanes northbound and three lanes southbound, between Marion Street and Dugald Road. The design also includes a number of intersection upgrades to accommodate current and future traffic volumes. At the Lagimodiere Boulevard and Marion Street intersection, the intersection geometry includes a dedicated eastbound to southbound right turn lane and right turn cut-off, along with two dedicated left turn lanes; At the Lagimodiere Boulevard and Dugald Road intersection, the intersection geometry includes updates to through traffic for better network accommodation and safety through the intersection, including two dedicated left turn lanes on westbound Dugald Road and one dedicated southbound through lane. Design also includes two new dedicated left turn lanes in the southbound Lagimodiere Boulevard direction. The improvements to Lagimodiere Boulevard itself include repurposing of the land west of the roadway to allow for a landscaped buffer zone and/or noise attenuation for the community, and an off-street multi-use path with additional landscaping, public art, wayfinding or other place making elements.

Review of culvert infrastructure along the corridor	Modifications to the existing Marion Street Culvert in the Seine River to accommodate the proposed multi-use pathway along the south side of Marion Street were designed; A new double-cell cast-in-place concrete drop-inlet culvert structure in the Dugald Drain was designed, replacing the structurally undersized and deteriorating existing Archibald Street culvert, along with the Tim Horton's Private Approach culvert structure (to accommodate the addition of lanes on Archibald Street). Extension (to the south) of the Marion Street Culvert in the Dugald Drain was necessary just west of the Marion/Archibald intersection, to accommodate the proposed roadway and multi-use pathway works occurring along Marion Street.
Need to minimize property acquisitions and impacts	The proposed design minimizes the number of permanent takings required along Marion Street. Along Lagimodiere Boulevard more extensive property acquisition is required in order to widen the roadway by an additional lane in each direction.
Need for road renewal	The existing pavement structure along Goulet Street, West of Traverse Avenue, and Marion Street east of Youville Street are in poor condition and require rehabilitation and/or reconstruction.
Need for rehabilitation of areas of improvement ranking to ensure budget feasibility	At the conclusion of the functional study, the final functional designs of the five proposed areas of improvement were compared and evaluated after completion, in order to obtain a ranking outlining which of the areas is the most beneficial to move forward to future design and construction. Detailed rankings are presented in History/Discussion section 3.0.