

Summary of Safety & Operational Assessment of Proposed Roundabout or Traffic Circle at Horner Avenue & Foch Avenue

PURPOSE

Staff evaluated the feasibility (operational, geometric, safety, and policy) of replacing the existing T-intersection control at Horner Avenue and Foch Avenue with either a single-lane roundabout or traffic circle / mini-roundabout, based on:

- Observed 8-hour and 24-hour weekday traffic, pedestrian, and cycling volumes
- Collision history
- Geometric constraints and access limitations
- Canadian, provincial, and City of Toronto design guidelines
- Proposed future improvements including bike lanes, speed limit reduction, and traffic calming

GEOMETRIC AND OPERATIONAL FEASIBILITY

1. Roundabout

Single-lane urban roundabout requirements (TAC Canadian Roundabout Design Guide):

| Feature | Recommended Minimum |
|-------------------------------------|----------------------|
| Inscribed Circle Diameter (ICD) | 26–35 m |
| Circulatory Roadway Width | 6–8 m |
| Splitter Islands | Required |
| Pedestrian set-back from yield line | 6–12 m (OTM Book 15) |

Site constraints:

- Available curb-to-curb width: 9.6 m
- Right-of-way: 26 m
- Sidewalks, boulevards, and utilities reduce available footprint further
- Adjacent driveways 15–18 m from side street intersection (functional area conflicts)

Conclusion: Insufficient geometric space to construct a compliant single-lane roundabout without **major property acquisition, driveway removal, and full reconstruction**, making it **geometrically infeasible** and cost-prohibitive.

2. Traffic Circle / Mini-Roundabout

Mini-roundabouts (traffic circles) are designed for:

- Local streets
- Low-volume intersections (< 2,000 vehicles/day per approach is recommended)
- Mountable central islands, minimal approach deflection

Single-lane mini-roundabout requirements (TAC CRDG):

| Feature | Recommended Minimum |
|-------------------------------------|---|
| Inscribed Circle Diameter (ICD) | 18–25 m |
| Central Island Diameter | 6–12 m (mountable or landscaped) |
| Circulatory Roadway Width | 5–6 m |
| Splitter Islands | minimum 6 m length, 1.5–2 m width |
| Pedestrian set-back from yield line | 6–12 m (OTM Book 15) |
| Entry/Exit Geometry | tapered at 3–5 m, with deflection angles of 15–25° and smooth departure at 25–30 km/h |

Site evaluation:

- Horner Avenue speed and volume study (April 16-18, 2024)
 - 24-hour total vehicle volume is 3,695 vehicles
 - The operating speed, which is the speed at which 85 percent of traffic is travelling at or below, was observed at 48.1 km/h
- Foch Avenue speed and volume study (February 3-5, 2026)
 - 24-hour total vehicle volume is 740 vehicles
 - The operating speed, which is the speed at which 85 percent of traffic is travelling at or below, was observed at 39.2 km/h
- Volumes are **high for a mini-roundabout**, particularly on Horner Avenue
- Adjacent PXO, pedestrian volumes, and driveway spacing **conflict with design requirements**
- Mini-roundabouts require clear approach paths and sufficient entry/exit deflection, which cannot be provided given the 9.6 m curb-to-curb width and 15–18 m driveway spacing
- **Proposed painted bike lanes would not be continuous** (width cannot accommodate splitter islands and bike lanes, unless reconstructing the boulevard); would require transitioning to sharrows or high cost changes
- Boulevard reconstruction would be necessary on north side
- Impractical movement for emergency services vehicles, waste collection vehicles and school buses (unless widening further into boulevard)
- Indirect paths of travel for pedestrians (particularly for east-west crossing on south side of Horner Avenue)

Conclusion: A traffic circle would **not meet safety or operational standards** due to high main street volumes, school-related pedestrian activity, and spatial limitations.

Pedestrian Crossing Considerations

- Existing PXO is located on the west leg at the intersection
- OTM Book 15 requires **6–12 m setback** from yield lines for roundabouts
- Installing either roundabout or mini-roundabout would require relocation of PXO, **reducing pedestrian visibility and safety**
- Observed pedestrian volumes: 322 in the busiest 8-hour weekday, concentrated during school arrival/departure times

