



INTERSECTION VISIBILITY ASSESSMENT

File Reference: Toronto Preservation Board
Agenda Item PB47.9
2 Whitney Ave. Structure – Intersection Visibility Assessment

Location: 2 Whitney Ave.
Toronto, ON

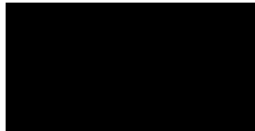
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Prepared for: Toronto Preservation Board

Investigator:



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1.0 EXECUTIVE SUMMARY

This report describes our road design and sight visibility assessment findings regarding a property renovation project at 2 Whitney Rd. in Toronto. The following is a synopsis of the findings discussed in this report:

- The incident brick wall is in violation of the TAC Geometric Design Guide for Canadian Roads, due to significantly obstructing the view of drivers at the intersection. The Approach Sight Distance and the Departure Sight Distance visibility requirements for this intersection are both severely deficient due to the obstruction posed by the wall.
- The severe visibility obstruction caused by the incident wall poses a significant safety hazard to the travelling public at this intersection.
- The incident wall, as-built, was in violation of numerous stipulations of the Encroachment Agreement between the City of Toronto and Ms. Michele McGrath.
- The overall height of the wall posts is currently 2.0 m above the adjacent grass level, or 2.25 m above road level.
- The analysis in the email from Mr. Asayas of the City of Toronto is incomplete and contains technical errors. Mr. Asayas did not conduct an Approach Sight Distance analysis at all, and his Departure Sight Distance analysis used an incorrect design speed with an observation point that was too far forward to allow for safe usage of the intersection for pedestrians and vulnerable road users.
- The proposed compromise to reduce the height of certain wall sections to 1.2 m above the adjacent ground will not address the reduced visibility safety hazard at this intersection.
- The wall pillar posts at the corner pose the same visibility obstruction as the full wall height and cannot be left as is, unless a significant and foreseeable increase in collisions at this intersection is deemed acceptable by the City.
- The row of hedges on the inside of the wall, within 20 m of both curbs at the intersection, pose a significant visibility safety hazard and must be either removed or maintained at a 1.0 m height or less to provide an acceptable level of visibility at this intersection for drivers and vulnerable road users.

2.0 INTRODUCTION

2.1 Background and Scope

As part of a residential renovation project at 2 Whitney Ave. in Toronto, Michele McGrath entered into an encroachment agreement with the City of Toronto regarding a proposed property wall to be built at the edge of the property at the corner of the intersection of Whitney Ave. and Glen Rd. The property wall was subsequently built. It has been alleged that the built wall does not comply with numerous aspects of the encroachment agreement.

Advantage Forensics was asked to conduct an independent engineering assessment of the road design and intersection visibility safety implications of this property wall.

The analysis and findings of this report are based on a review of the documents listed below, a review of publicly available aerial and street-view photos of the site, and a site exam conducted by the author.

2.2 List of Provided Documents

We have reviewed the following provided documents pertaining to this matter:

- Encroachment Agreement between City of Toronto and Michele McGrath, dated Oct. 3, 2024.
- Traffic Management Plan for Glen Road, dated July 2018
- City of Toronto Report for Action to Toronto Transportation Board, dated Sept 10, 2025
- Email from Mr. Kristoffer Asayas, City of Toronto, to City Councillors, dated Jan. 20, 2025
- City of Toronto Report for Action to Toronto Preservation Boards, dated July 6, 2026
- City of Toronto Report for Action to Toronto Preservation Board, dated July 21, 2026
- Tab 9 – Permit Drawing Set for McGrath Residence, dated June 22, 2026
- Tab 10 – Wall Construction Detail Enlargements from June 22, 2026 drawing
- Tab 12 – Encroachment Schedule 1A & 1B Enlargements from June 22, 2026 drawing

2.3 Qualifications of Authors and Expert's Duty

The primary author of this report is Jason Young, B.E.Sc., M.A.Sc., P.Eng. The author has been a licensed professional engineer in the Province of Ontario since 2002. The author has been qualified as a forensic expert on 30 occasions by the Superior Courts of Ontario, Quebec, Prince Edward Island, Florida, and California, and on 5 occasions at Ontario Arbitrations and Judicial Courts, including the field of Road Design. The author has been the lead investigator on more

than 3000 forensic investigations, including over 300 road design assessment cases involving intersection safety and intersection visibility.

Mr. Young has a Bachelor's degree in Mechanical Engineering and a Master's degree in Biomedical Engineering. Mr. Young has been retained by municipalities across Ontario, by Police, by transit authorities, by plaintiffs, by insurers, and by the Ministry of Transportation representing His Majesty The King as an expert in Road Design. Mr. Young is a long-standing member and technical paper reviewer for the Canadian Association for Road Safety Professionals (CARSP). Mr. Young has taught a variety of professional courses, guest lectures and seminars in Road Design at Ontario municipal training courses and at Ontario lawyer and insurance association seminars. Mr. Young has published industry magazine articles on Road Design and has been a featured guest expert in the media across Canada on Road Design factors in collisions.

The author acknowledges his duty to provide expert opinion evidence within his field of expertise that is scientifically based in an unbiased, ethical, and professional manner. The author's Curriculum Vitae summarizing all education, training and experience related to Road Design is attached.

3.0 SITE FINDINGS & ANALYSIS

This section describes our analysis and findings regarding the incident location, based on our review of the provided documents and our site exam conducted on Dec 8, 2025.

The area in question is in a suburban residential area and consists of a T-intersection with Whitney Ave. running primarily east-west and Glen Rd. running primarily north-south (Figure 1). Whitney Ave. approaches the intersection from the east and has a stop sign at the intersection. Traffic on Glen Rd. has the right-of-way through the intersection. The property in question (2 Whitney Ave.) is located on the northeast corner of the intersection.

Whitney Rd. is 2 lanes wide with no centreline and a posted speed limit of 30 km/h. The road has curbs and sidewalks on both sides. The road curves significantly to the right for westbound traffic at the intersection. Glen Rd. has 1 marked lane in each direction with a dashed yellow centreline, bicycle sharrows in both directions, and a posted speed limit of 30 km/h. The road has curbs and sidewalks on both sides. Both roads are flat at the intersection. Both roads are classified by the City of Toronto as local roads. The area has a very high volume of pedestrian use due to the park on the opposite side of the street.



Figure 1: Google Earth aerial view (taken July 2021) of the incident area (north is up).

Driver Visibility – Approach Sight Distance

Figure 2 illustrates the driver view from Whitney Ave., taken 25 m set back from the intersections of westbound Whitney Ave. and southbound Glen Rd., corresponding to the required location for the Transportation Association of Canada's (TAC 2007)¹ 'Approach Sight Distance' sight visibility measurement for one-way stop or two-way stop intersections. From that location, the incident brick wall, as is, blocks the entire view of southbound traffic, which is a violation of the Approach Sight Distance requirement for intersections, and which poses a safety hazard to the travelling public. Approach Sight Distance is a requirement for intersections of this nature, allowing vehicles travelling on the through road an opportunity to see the approaching vehicle on the intersecting road that may not stop for the stop sign. For a posted speed limit of 30 km/h with an assumed design speed of at least 40 km/h, a clear line-of-sight triangle across the corner of the intersection must be provided for at least 35 m north of the point of intersection of the lanes. The incident brick wall blocks that visibility and is in violation of the TAC Geometric Design Guide for Canadian Roads. The Asayas analysis did not consider Approach Sight Distance at all, only Departure Sight Distance (see next section).



Figure 2: Site exam photo, looking west on Whitney Ave. toward the intersection, taken 25 m back from the intersection of the westbound lane and the southbound lane. The incident brick wall completely blocks the view of southbound traffic from this location.

¹ Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads, 2007 update, Part 2, Section 2.3.3.2.

Driver Visibility – Departure Sight Distance

Figure 3 illustrates the driver view from Whitney Ave., taken from a position 2 m back from the centre of the stop line, corresponding to the driver's perspective with the front bumper of the vehicle stopped over the centre of the stop line. This location corresponds to the required location for the Transportation Association of Canada's (TAC 2007)² 'Departure Sight Distance' sight visibility measurement for one-way stop or two-way stop intersections. From that location, the view of southbound vehicles on Glen Rd. was obstructed by the brick wall and was limited to only 27 m north of the centre of the westbound lane on Whitney Ave. This is a violation of the Departure Sight Distance requirement for intersections and poses a safety hazard to the travelling public. Departure Sight Distance is a requirement for intersections of this nature and allows the stopped vehicle at the stop line sufficient visibility to be able to use the intersection safely and decide whether or not it is safe to turn into the intersection. For a posted speed limit of 30 km/h with an assumed design speed of at least 40 km/h, a clear line-of-sight triangle across the corner of the intersection must be provided for at least 87 m north of the centre of the westbound lane. The incident brick wall, as is, blocks that visibility and is in violation of the TAC Geometric Design Guide for Canadian Roads.



Figure 3: Site exam photo, looking north from a stopped position on Whitney Ave., with the camera 2.0 m back of the stop line, corresponding to the front bumper being stopped at the stop line. The incident brick wall limits the view of southbound vehicles to only 27 m north of the centre of this lane.

² Ibid, Part 2, Section 2.3.3.2.

Even from a fully pulled-forward position, with the front of the vehicle encroaching halfway into the pedestrian crossing and with the driver's eye positioned above the stop line, the visibility from that perspective was still obstructed by the incident brick wall, limiting the visibility of southbound vehicles to only 43 m north of the centre of the westbound lane. The visibility obstruction posed by the incident brick wall poses a significant safety hazard to westbound drivers stopped at this intersection, attempting to turn left to travel south on Glen Rd.

The Asayas analysis, which appeared to be based on aerial photos only, clearly showed that the line-of-sight of a driver stopped properly at the stop line was blocked by the new brick wall. The second aerial photo in the Asayas email, which claimed to show a clear line-of-sight for a driver in a pulled-forward position, contained two errors:

- First, the diagram showed a driver-eye position located exactly over the first pedestrian crossing line, meaning that the front end of the vehicle would be fully blocking the pedestrian crossing at that point. This would pose a safety hazard to pedestrians and cyclists, and is a clear violation of the TAC Geometric Design Guide for Canadian Roads. That would not be classified as a "slight encroachment". Intersection visibility requirements are not measured in that manner.
- Second, the Asayas distances for the visibility triangle requirement appear to be based on a 30 km/h design speed, which is incorrect. For a local, wide, paved suburban road with a posted speed limit of 30 km/h, the assumed design speed (which is the speed of the 85th percentile fastest driver on that road) should be at least 40 km/h which is 10 km/h above the speed limit. Using a design speed of 30 km/h to assess visibility at this location would result in a safety hazard due to insufficient visibility.

Encroachment Agreement Conditions

The Encroachment Agreement between the City of Toronto and Michele McGrath, dated Oct. 3, 2024, had a number of stipulations regarding the building of this proposed property wall. Based on our site exam measurements, a number of those stipulations were violated by the as-built wall, as follows (referenced by Section number in the Agreement):

- Section 5(2)a: The wall encroachment was required to not obstruct vehicular sight lines. As discussed in the above two sub-sections, both of the relevant sight line requirements for intersections were violated with significant deviation from the applicable standards.
- Section 5(2)b: The wall encroachment was required to not impede or pose a hazard or potential hazard to pedestrian or vehicular traffic. As discussed in the above two sub-sections, the deficient sightlines at the intersection that were due to the presence of the wall posed a significant safety hazard to vehicular traffic at this intersection.

- Section 5(2)h: The wall encroachment was required to not violate the 1.0 m minimum clearance from the existing utility poles and sign posts. We measured the distance from the as-built wall to the existing utility poles and to the stop sign post. The as-built wall was only 18 cm (i.e. 0.18 m) from the stop sign post (Figure 4), which was in violation of that clause of the Agreement.



Figure 4: Site exam photo, of the minimal clearance (18 cm) between the stop sign post and the wall.

Wall Height

The as-built overall height of the wall at the intersection is currently 2.0 m above the adjacent grass level, measured both on the Whitney Ave. side and the Glen Rd. side (2.0 m for the large square pillar posts and 1.9 m for the wall, see Figure 2 above). The grass level was 0.1 m above the municipal sidewalk level and the sidewalk curb was 0.15 m high, so the top of the wall posts were 2.25 m above the road pavement. These measurements are from the wall as is, without the proposed addition of metal spikes above the wall.

The July 6, 2026 Report for Action Memo, along with the accompanying provided drawings, dated June 22, 2026, state that a compromise has been proposed by the City and homeowner to reduce the height of the current wall to '1.2 m above grade' (i.e. above the adjacent ground) in those sections bordering the intersection. Since those sections of wall are currently 1.9 m above the adjacent ground, this means that those sections will be cut down in height by 0.7 m. The proposal states that the square pillar posts will remain at their current height (i.e. 2.0 m above grade, and 2.25 m above road pavement), and that the metal spikes will be installed on top of the reduced-height wall.

I note that the other wall sections on Glen Rd., north of the intersection, are already 'half wall height' and are 1.0 m above grass level (or 1.25 m above road level). Figure 5 below shows my site exam photo, taken during the winter, from driver-eye height in the southbound lane of Glen Rd., only 43 m north of the centre of the westbound lane of Whitney Ave. The 'half wall height' north of the intersection can be seen in this photo and closely represents what is being proposed for the rest of the wall. Three critical points are evident from this photo:



Figure 5: Site exam photo from driver-eye height in the southbound lane of Glen Rd., only 43 m north of the centre of the westbound lane of Whitney Ave., taken during the winter.

1. A 1.2 m wall will still block the view of at least the bottom 80% of sedans, coupes, motorcyclists, and adult cyclists, and close to 100% of the view of children cyclists or e-scooter users on the road. The typical height of sedans and coupes ranges from 1.4 to 1.5 m. For SUVs, minivans, and pickup trucks (heights range from 1.7 to 2.1 m), the 'half wall' height will block the view of the bottom 60% to 70% of those vehicles. The TAC standards for intersection visibility (both Approach and Departure Sight Distance) do not allow any partial obstructions within the required visibility triangle. The proposed 'half wall' height will not solve the visibility issue for vehicles, cyclists, or other vulnerable road users.
2. The large square wall pillar posts at the corner appear next to each other from this driver approach, along with the hydro pole between them, fully blocking the view of stopped vehicles at the stop line on Whitney Ave. The wall pillar posts at the corner pose the same visibility obstruction as the full wall height and cannot be left as is, unless a significant and foreseeable increase in collisions at this intersection is deemed acceptable by the City.

3. The row of hedges next to the inside of the wall, which retain their leaves during winter, are about 10 feet tall and dense, fully blocking the driver view across the corner of the intersection, even where the wall is half height and no pillar posts are present. This row of hedges is slated to remain in place in the compromised proposal cited above. The visibility safety issue at this intersection will not be solved until this row of hedges is removed or maintained at a 1.0 m height or less, at all locations within 20 m north of the north curb of Whitney Ave. and 20 m east of the east curb of Glen Rd.

As such, the proposed compromise will not address the safety hazard at this intersection and is likely to result in a foreseeable increase in collisions involving both vehicles and vulnerable road users. As a case in point, consider Figure 6 which shows the southbound driver view from only 33 m north of a large cargo van at the stop line that is present in this photo but 99% obstructed from view by the wall, the large pillar posts, and the hedge. Figure 7 shows the view of that same large cargo van after advancing to only 23 m north of the van, with the front wheels of the van now on the first pedestrian crossing line and the front end of the van now blocking about half of the pedestrian crosswalk.



Figure 6: Site exam photo from driver-eye height in the southbound lane of Glen Rd., only 33 m north of the large cargo van at the stop line, with only the front edge of the bumper visible (arrow).



Figure 7: Site exam photo of the same large cargo van in Figure 6, taken from driver-eye height only 23 m north of the van, with the front wheels of the van now on the first pedestrian crossing line.

4.0 CONCLUSIONS

Based on our investigation, we have reached the following conclusions:

- The incident brick wall, as is, is in violation of the TAC Geometric Design Guide for Canadian Roads, due to significantly obstructing the view of drivers at the intersection. The Approach Sight Distance and the Departure Sight Distance visibility requirements for this intersection are both severely deficient due to the obstruction posed by the wall.
- The severe visibility obstruction caused by the incident wall, as is, poses a significant safety hazard to the travelling public at this intersection.
- The incident wall, as-built, was in violation of numerous stipulations of the Encroachment Agreement between the City of Toronto and Ms. Michele McGrath.
- The overall height of the wall posts is currently 2.0 m above the adjacent grass level, or 2.25 m above road level, without the addition of the proposed metal spikes.
- The provided analysis in the email from Mr. Asayas of the City of Toronto is incomplete and contains technical errors. Mr. Asayas did not conduct an Approach Sight Distance analysis at all, and his Departure Sight Distance analysis used an incorrect design speed with an observation point that was too far forward to allow for safe usage of the intersection for pedestrians and vulnerable road users.
- The proposed compromise to reduce the height of certain wall sections to 1.2 m above the adjacent ground will not address the reduced visibility safety hazard at this intersection.
- The wall pillar posts at the corner pose the same visibility obstruction as the full wall height and cannot be left as is, unless a significant and foreseeable increase in collisions at this intersection is deemed acceptable by the City.
- The row of hedges on the inside of the wall, within 20 m of both curbs at the intersection, pose a significant visibility safety hazard and must be either removed or maintained at a 1.0 m height or less to provide an acceptable level of visibility at this intersection for drivers and vulnerable road users.