

Executive Summary

1. Introduction

The City of London retained CIMA+ in 2016 to undertake an Environmental Assessment (EA) for the proposed realignment of Commissioners Road West. The realignment of Commissioners Road West was identified in the London 2030 Transportation Master Plan (TMP) which was approved by City Council in June 2012. The realignment was also shown in the City of London Official Plan 1992 and The London Plan. The Commissioners Road West realignment from Springbank Drive/Byron Baseline Road to Cranbrook Road study follows the Municipal Engineers Association (MEA) *Municipal Class Environmental Assessment* (October 2000, as amended in 2007, 2011 and 2015) process for a Schedule C project.

The proposed realignment is in accordance with the City's 2030 Transportation Master Plan (TMP), which identified the need to realign Commissioners Road West through the Byron Gravel Pit. The realignment is part of an overall plan that includes the reclamation of the Byron Gravel Pit. The recommendations of this study will contribute significantly to the development of the South-East Byron Secondary Plan, which will establish a vision for future development in the Byron Area. The construction of the realignment is not anticipated to commence for 15 to 20 years however, the study was initiated in order to establish a base road network for the Secondary Plan and establish preliminary property requirements.



Study Area of the Commissioners Road West Realignment EA

Within the study area, Commissioners Road West is a 1.2-kilometre two-lane arterial roadway extending from Springbank Drive/Byron Baseline Road in the West to Cranbrook Drive in the East. The study area includes four intersections with Commissioners Road West; Springbank Drive/Byron Baseline Road, Cranbrook Road, Crestwood Drive and Longworth Road. In the western portion of the study area, Commissioners Road West passes through “Snake Hill” (also referred to as “Reservoir Hill”), where the road experiences a very steep westerly downgrade of approximately 11% (approaching the intersection of Springbank Drive/Byron Baseline Road). The current posted speed along Commissioners Road West is 60 km/h east of Longworth Road and 50 km/h west of Longworth Road.

2. Planning context

The policy context is discussed in Chapter 2 of the ESR. The policy framework guides infrastructure and land use planning and strategic investment decisions to support City growth and transportation objectives.

The realignment of Commissioners Road West was first identified in the South-East Byron Area Study in 1992 and reaffirmed in the City of London Official Plan. The

realignment is shown in both plans as a part of the land use redevelopment of the Byron gravel pit. More recently, the City's Cycling Master Plan (2016), The London Plan and the 2030 Transportation Master Plan show the importance of the realignment of Commissioners Road West for all modes of transportation to better connect the City's transportation network.

3. Consultation

Consultation was a key component of the study in order to provide an opportunity for stakeholder groups and the public to gain an understanding of the study process and provide feedback at important stages in the Class EA process. The consultation plan was organized around key study milestones, including the two Public Information Centres (PICs), stakeholder engagement and participation of technical review/regulatory agencies at study milestones.

A mailing list was developed to notify potentially interested parties of opportunities for review and comment. The key stakeholders included residents, interested public, agencies, First Nations communities and those who may be affected by the project.

A Notice of Study Commencement was issued on April 11th, 2016 to inform the public of the study and invite agency representatives participate on the study's Technical Agency Committee (TAC).

Public Information Centre (PIC) No.1 was held on March 30, 2017 to present the study, including information on existing conditions, alternative planning solutions, evaluation criteria and design considerations. It served as opportunity for the public to review the project information, ask questions, and provide input to the members of the study team. The Notice of PIC No.1 was published in *The Londoner* on March 16th and March 23rd, 2017.

PIC No.2 was held on November 29, 2017 as an opportunity for attendees to review the impact of the road improvement options on the social, cultural, economic, and natural environments as well as the preliminary preferred design. The Notice of PIC No.2 published in *The Londoner* on November 16th and 23rd, 2017.

In addition to formal public events, the Project Team conducted numerous in-person meeting with the stakeholders and agencies. In particular, three meetings were held with the LaFarge Canada representatives, March 24th, September 18th, November 9th, 2017 and one meeting with the Upper Thames River Conservation Authority (UTRCA) on November 15th, 2017.

4. Identification of the problem

4.1. Existing Road Network

Within the study limits, Commissioners Road West and Byron Baseline Road /Springbank Drive are two-lane arterial roadways. All other roadways within the study area are local roads. East of the intersection with Byron Baseline Road/ Springbank Drive, Commissioners Road West passes through “Snake Hill”, where the roadway experiences a vertical grade of approximately 11%.

The existing roadway cross-section is partly rural and partly urban (curb and gutter present). The current posted speed limit on Commissioners Road West is 60 km/h east of Longworth Road and 50 km/h west of Longworth Road. The intersections at the two study-area termini are signalized, and there are two unsignalized intersections within the study area (Crestwood Drive and Longworth Road).

4.2. Traffic Operations and Safety Assessment

Commissioners Road West exhibits a steep road grade and very tight horizontal curves between Crestwood Drive and Byron Baseline Road/Springbank Drive. Commissioners Road West is classified as an urban arterial undivided roadway where the maximum gradient is recommended to be 6% while the current vertical grade for Snake Hill is approximately 11%. These existing conditions reduce traffic capacity, prevent provision of transit and emergency service within the study area, and inhibit active-transportation opportunities.

A significant number of collisions were observed on Snake Hill and at the intersection of Byron Baseline Road/ Springbank Drive and Commissioners Road West. Some of the contributing factors for the collisions may be slippery roads caused by loss of traction due to steep downgrade and sharp horizontal curvature, and short stopping sight distance. These conditions could be traffic safety concerns not only for vehicles but also vulnerable road users (i.e. pedestrians, cyclists and individuals with accessibility requirements).

Currently, this section of Commissioners Road West is not included in London Transit’s network due to the operational concerns. Similarly, emergency service vehicles’ operations are limited; especially in the winter season as this section of Commissioners Road West has high collision rates under wet and slippery conditions as discussed in the traffic and safety assessment.

4.3. Problem and Opportunity Statement

The steep vertical grade and sharp horizontal curves, contribute to safety concerns for all road users on this section of Commissioners Road West particularly in poor winter road conditions. Existing conditions reduce traffic capacity, prevent provision of transit and emergency service within the study area, and inhibit active-transportation opportunities. Additional problems within the study area include:

- + Most recreational cyclists have hard time riding on an 11% incline.
- + Ontario's Accessibility Design Standards generally require that pedestrian pathways have a grade of 5% or less.
- + Emergency service vehicles may reduce their respective operations.
- + Transit services limitation.
- + Heavy vehicles are advised against using Snake Hill as a truck route.

The operator of the Byron Gravel Pit has indicated that pit operations are nearing completion, and this creates the opportunity to provide a realigned Commissioners Road West with a road geometry suitable for all road users. The realignment of Commissioners Road West is an opportunity to:

- + Improve road safety for all users
- + Achieve integrated land-use planning (including the Byron Gravel Pit)
- + Connect the park system
- + Create new pathways and pocket parks
- + Enhance landscaping

5. Alternative Planning Solutions

Transportation planning solutions were developed and assessed against their ability to reasonably address the problems and opportunities identified in the study area. The following five alternatives solutions are examined in relation to the geometric deficiency on Commissioners Road West:

Alternative Solution 1 – Do Nothing

Leave Commissioners Road West in an as-is state.

Alternative Solution 2A – Improve Existing Road Geometry: Vertical Road Profile

Reconstruction of the existing Commissioners Road West to improve the vertical curvature deficiencies to meet the design standard of 6%. The steep grade may be avoided by modifying the roadway's profile between Springbank Drive and Westmount Drive.

Alternative Solution 2B – Improve Existing Road Geometry: Horizontal Curvature

Reconstruction of the existing Commissioners Road West to improve the horizontal deficiencies of reverse curves, just east of Springbank Drive, which currently have radii of 80 metres. Solutions to improve the horizontal deficiencies will mitigate the stopping sight distance (SSD). However, designing under the required design standards, the minimum horizontal curve radius will increase, result in significant property impacts.

Alternative Solution 2C – Improve Existing Road Geometry: Road Profile and Curvature

Combining horizontal and vertical alignment modifications would be preferred over Solution 2A and 2B to eliminate sight-distance restrictions at the horizontal curves. A minimum curve radius of 170 metres and 6% maximum grade would be required. The impacts noted for Alternative Solution 2A and 2B combined would be incurred for this option.

Alternative Solution 3 – Realign Commissioners Road West

Following the closure of the Byron gravel pit, relocation of Commissioners Road West southerly to a new corridor may be feasible. The maximum road grade of a new Commissioners Road West would be less than 6%, (i.e. within the City's design standards). There are several alternate solutions for the roadway alignment and configuration of the local road network.

6. Preferred Planning Solution

Phases 1 and 2 of the Class EA including the alternative solutions, were presented to agencies and the public for review and input at a Technical Agencies Committee (TAC) meeting and Public Information Centre #1 (PIC). Overall, in discussion with those in attendance at the PIC, there was an overall favourable response to Alternative Solution 3.

Key factors for Alternative Solution 3 being selected as the preferred planning solution include the following:

- + Removes the existing steep road grade by closing the existing Commissioners Road West and providing a new alignment
- + Improved safety for all road users (i.e. vehicles, pedestrians and cyclist)
- + Improved access for emergency services
- + Opportunity to provide transit service
- + Integration of Commissioner Road into London's Road Network and conforms to the City's planning policies (i.e. The London Plan)
- + Improved road grade accommodates improved active-transportation facilities (i.e. multi-use path)
- + Reserved corridor is sufficient to widen Commissioners Road West to 4-lanes

Cost was not considered as a principle factor in the determination of the preferred solution. The overall benefits mentioned above were found to outweigh cost in the evaluation process.

Following consultation with agencies and the public, the preferred planning solution is recommended as **Alternative 3, realignment of Commissioners Road West into a new corridor.**

7. Alternative Design Concepts

Phase 3 of the Class EA process includes the development and evaluation of alternative designs based on the preferred planning solution. The design criteria utilized in the development of the alternative designs are shown in **Section 7.1** of the body of the report.

In addition to the design criteria discussed above, the following factors were considered in the development of alternative designs:

- + In keeping with the design criteria which keep the vertical and horizontal alignment within safe limits, design options through the pit were constrained. The largest distance between centre lines of the most northerly and most southerly alignments was restricted to 55 metres due to proximity to the pit and the hill adjacent to Crestwood Drive.
- + An alignment that encroaches on the residential properties located on the hill would require a large amount of cut and directly affect these properties.

- + An alignment far away from these properties and closer to the pit would require a large amount of fill and the connection at the intersection of Commissioners Road West and Byron Baseline Road would increase the skewed angle.

After reviewing design options, previously prepared in 1992 (and others by the City), three feasible alternative designs were developed using the design criteria. The alternative designs and variation in alignment are illustrated below.



Alternative Design 3.1 – Southerly Alignment

This corridor alignment is the furthest south and furthest away from the existing properties located on the hill on Crestwood Drive. This is the most southerly alignment feasible while still adhering to the design criteria.

Alternative Design 3.2 – Northerly Alignment

This alignment is the most northerly and closest to the hill on Crestwood Drive. This is the most northerly alignment feasible while meeting design criteria and not directly impacting the existing properties on top of the hill.

Alternative Design 3.3 – Middle Alignment

This alignment is in between alternative design 1 and 2.

8. Preferred Design

Alternative Design 3.2, Northerly Alignment was selected as the preferred design that best addresses the project problem statement based on the detailed evaluation and feedback received from the public. Factors such as impact on areas of archaeological potential, built heritage resources, vegetation, property and municipal services and

utilities as well as opportunities for streetscaping and active transportation were similar between all three Alternative Designs. Alternative Design 3.2 presents the shortest road length, does not encroach on a source of groundwater, and the cost was lowest due to the least amount of fill required. Additionally, based on a virtual 3D representation of the design, it appeared that Alternative Design 3.2 presented the least amount of visual impact to the adjacent properties on the top of the hill on Crestwood Drive as the alignment appeared to be hidden under the brow of the hill.

9. Additional Design Components

9.1. Approach to Byron Baseline Road

An alternative westbound approach alignment to the Byron Baseline/Springbank intersection was considered in conjunction with each of the main alignment options 3.1, 3.2, and 3.3. The approach angle was modified to reduce the wide angle between Byron Baseline Road and the east leg of Commissioners Road West. This could potentially improve safety while modifying the angle between legs closer to the desired 90 degrees.

However, it became apparent that this realignment would bring the new alignment south causing a significant increase in fill and therefore cost yet there were no significant advantages to doing so. Therefore, additional alternative approach to the Byron Baseline/Springbank Intersection was not carried forward for more detailed assessment.

9.2. Intersection Design Alternatives

The intersection of Byron Baseline Road/Springbank Drive at Commissioners Road West is a skewed intersection and the connection to the new corridor was a design consideration. Roundabout design was considered to reduce intersection related collisions and increase traffic capacity. Two intersection designs were compared; a signalized intersection and a roundabout.

Based on the intersection design evaluation, a signalized intersection was selected as the preferred intersection design. A signalized intersection was recommended due to a lower overall cost and less impact on adjacent land with half the amount of property required and the traffic operations and level of safety for the traffic signal option were considered acceptable.

10. Preliminary Property Requirements

The City of London will require residential and commercial properties to establish the new ROW within the study limits. The final extent of acquisition at these locations and associated mitigation will be the subject of negotiations with the property owners. Seven (7) properties within the ROW are impacted and the property required is shown below.

Table 1: Property Required within the Right of Way of the Study Limits

Property	Property Required (m²)
940 Springbank Road	55
982 Springbank Road	440
1044 Byron Baseline Road	365
1030 Byron Baseline Road	14815
West of 549 Crestwood Drive (CON 1 PT LOT 41 RP 33R10286 - PART 1)	630
581 Crestwood Drive	7135

11. Project timing and Construction Staging

Currently, the project does not have a firm construction date with a likely completion date at least 15 to 20 years away unless the project is promoted in the City’s budget.

The construction is expected to take at least two years and possibly more for establishing the fill area in the pit depending on the construction technique used. Since much of the road construction will take place away from the current road network on a new alignment; traffic disruption will be minimized during construction. Suggested construction staging is split into three stages:

- + Stage 1: West of Byron Baseline Road to correct the sight line issues
- + Stage 2: Between Cranbrook Road and the start of the pit (just west of Crestwood Drive)
- + Stage 3: The gravel pit

Should the detail design for this project recommend incremental loading of the fill area in order to establish stability, a slight modification of this construction staging could involve incremental loading of the fill area in the pit in advance of the main construction taking place over a number of years in order that the fill compacts before construction of

the road – this could commence following detail design once property and easements are obtained.

12. Preliminary Project Costs

The estimated total project cost associated with the proposed improvements, including engineering, roadway construction, stormwater management, utility relocation, landscaping, traffic control, sanitary sewer and watermain improvements, landscaping, staging, and other project costs is approximately \$19.5 M. It should be noted that this cost estimate does not include property costs. A detailed cost breakdown can be found in **Section 8.13** of the report.