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TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON DEC 19, 2011**
FROM:	**JOHN LUCAS, P.ENG. ACTING DIRECTOR, ROADS AND TRANSPORTATION ENVIRONMENTAL & ENGINEERING SERVICES**
SUBJECT:	**HYDE PARK ROAD IMPROVEMENTS ENVIRONMENTAL STUDY REPORT PROJECT NUMBER: TS1477**

RECOMMENDATION

That, on the recommendation of the Acting Director, Roads and Transportation, Environmental and Engineering Services, the following actions **BE TAKEN** with respect to the Hyde Park Road Improvements Environmental Study Report:

(a) The Hyde Park Road Improvements Environmental Study Report **BE ACCEPTED**;

(b) A Notice of Completion **BE FILED** with the Municipal Clerk; and

(c) The Environmental Study Report **BE PLACED** on public record for a 30-day review period.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

- Environment and Transportation Committee – June 22, 2009 – Appointment of Consulting Engineers; Class Environmental Assessments for Hyde Park Road, Sarnia Road, Sunningdale Road

BACKGROUND

Purpose:

This report seeks approval to finalize a Schedule 'C' Class Environmental Assessment for improvements to Hyde Park Road from Oxford Street West to Sunningdale Road West.

Discussion:

IBI Group was hired by the City of London to conduct the Environmental Assessment (EA) for Hyde Park Road. This EA considered many factors during evaluation of the design alternatives which included:

- impact on the social environment;
- technical considerations;
- future traffic patterns;
- existing and future land uses;
- project phasing; and
- estimated costs.

Recommended Alternative:

The recommended design for the widening of Hyde Park Road incorporates a number of features to improve traffic flow, minimize impacts, and maximize social benefits. They include:

- four through lanes with turn lanes;
- streetscape enhancements in the Hyde Park hamlet;
- intersection improvements, including new traffic signals where warranted;
- bicycle lanes and sidewalks in both directions;

- incorporating a new multi-use pathway link and crossing;
- noise attenuation where warranted; and,
- upgrades to storm drainage, sanitary sewers and watermains.

Public Consultation:

Public input to this project has been thoroughly solicited in both conventional and unconventional methods.

Project signboards were placed in the Hyde Park Road right-of-way at the outset of the project. The signs provided basic information including contact information for the project. These signs resulted in numerous inquiries about the project. All project information was also posted on the City's Transportation Planning & Design website.

The first of two Public Information Centres (PIC) was held on September 30th, 2009 to introduce the project and to receive input and concerns. Public turnout was good with 62 attendees signing into PIC 1. Display boards explained background information on the project along with the EA process.

A design charrette which included members of the Hyde Park village community was held in April, 2010. The charrette focused specifically on enhancing the local hamlet, mitigating effects from the road widening and how the Hyde Park Urban Design Guidelines would be addressed within the road design.

A second PIC was held on June 23rd, 2011. This PIC presented the preferred design layout of Hyde Park Road for input and comment. Public turnout was again good with 72 attendees signing in to PIC 2.

Members of the project team frequently attended meetings of the Hyde Park Business Association. Meetings were also held with property owners as interest arose.

Consistent with all consultation points during the study, the public, agencies and First Nations were informed of the date of this public participation meeting through a mail-out and advertisements in the Living in the City section of the London Free Press.

EA Issues:

The ESR Executive Summary is contained in Appendix A. The EA study identifies and mitigates impacts associated with the project. The following issues are noted.

Hyde Park Hamlet Urban Design

The 1999 Hyde Park Community Plan and related Urban Design Guidelines recognize the unique character of the Hyde Park Community with its mix of new residential neighbourhoods and large commercial blocks developed around an existing hamlet community. The Hyde Park Urban Design Guidelines are intended to create a healthy, functional and pleasing community environment.

Given the need to be consistent with the Urban Design Guidelines and the Official Plan, the project team organized a design charrette to incorporate the community stakeholder's interests in minimizing the impact of road improvements on the existing hamlet community. Residents and business owners from the hamlet community participated in the charrette and provided significant contribution.

The design charrette was a 'brain storming' session that assisted the project team in the design and development of alternatives. The design charrette also helped to establish a community vision with distinct elements which could be clearly incorporated in the corridor improvements. Streetscape elements that have been incorporated in the recommended plan include centre median planter boxes, aesthetic streetlighting with banner brackets and the concept of a lane diet with reduced road widths.

Commercial Access Management

The proposed design utilizes centre median islands to restrict some movements to right turns only, which will improve traffic flow and safety. The proposed design also enforces municipal access control standards with respect to driveway locations and width. Access management concepts deem that traffic safety is paramount for pedestrians, cyclists and drivers.

The recommended design of the centre median was presented at PIC #2 and showed the impact on access to both private residences and commercial properties. As there were no related comments at the second PIC or shortly thereafter, a subsequent mail-out with illustrative drawings was sent to the property owners for which access restrictions were proposed. As a result of subsequent meetings with property owners, some local adjustments were made to the design to improve access where accommodations were possible.

Property Acquisition

The existing Hyde Park Road corridor is fairly constrained with the existing road allowance ranging from 29m to 33m. Major arterial roads usually have a road allowance of 36m. Widening to the full 36m would have a significant impact on a large number of adjacent properties so reduced design widths and offsets have been incorporated where necessary. The impact to properties has been minimized as much as possible; however, acquisitions of strip widenings are required at sporadic locations throughout the project.

Temporary consent to enter agreements will be required throughout the corridor to facilitate grading, drainage works, and the construction of noise walls along the back of adjoining residential properties. A number of adjacent residential properties will also require the construction of drainage swales and the installation of rear yard catch basins to facilitate drainage.

Intersection Operations and Traffic Signals

Several alternative intersection configurations for the Hyde Park Road corridor were reviewed with the aim of maximizing the intended capacity of the road while also acknowledging the need to control the potential negative effects of the road widening on adjacent properties. Typical intersection enhancements are proposed at most locations.

Dual left-turn lanes are proposed at Oxford Street, Sarnia Road and Fanshawe Park Road. However, since dual left-turn lanes can create signal timing and operational challenges, these improvements will be phased in when warranted.

The expansion of the Gainsborough Road intersection was rationalized with associated impacts to the surrounding hamlet and property constraints. Consequently, a nominal expansion of the intersection is proposed that accommodates the additional through lanes but no additional turn lanes.

Traffic signals are not anticipated to be warranted at South Carriage Road and the future north leg of North Routledge Park/Coronation Blvd but are shown for planning purposes when triggered. The timing of the new signals is dictated by provincial traffic volume signals warrants. This is largely a function of the pace of local development and traffic growth, which will be monitored to determine implementation timing. Traffic impact studies recently done for developments in the area of these intersections confirm that signal warrants will not be met in the near term. This area has been the subject of signal requests due to driver difficulty accessing Hyde Park Road; however staff has consistently found that this issue is resolved when the arterial road is widened and gaps are created in the traffic stream. Premature installation of signals would reduce the capacity of Hyde Park Road in the area of Gainsborough Road where compromises have already been made in the design. Furthermore, it is anticipated that signals at these locations will facilitate cut-through traffic into the residential neighbourhoods. Cut-through traffic complaints have been received west of the South Carriage intersection.

Railway Structures

Canadian National Railway (CNR) Overpass: The CNR overhead bridge was constructed in the mid-1980s. The abutments and piers were overbuilt to accommodate the future road widening; however, the previous design did not accommodate all of the currently proposed cross-section elements. A number of design alternatives were developed and evaluated to widen the grade separation over the CNR track. The EA recommends utilizing the existing overbuilt structural elements by extending them further and widening the structure entirely to the east. This design minimizes costs and property impacts and accommodates a future recreational path crossing of the CNR corridor.

Canadian Pacific Railway (CPR) Underpass: The existing underpass/subway was also constructed approximately 25 years ago and was designed for the future widening of Hyde Park Road. However, the existing structure opening is 2 m narrower than required for a standard cross-section of vehicle and bicycle lanes plus sidewalks. The recommended alternative consists of a localized reduction in cross-section widths to “squeeze” through the existing structure. The EA also considered alternatives that incorporate the construction of one or two pedestrian tunnels through the rail embankment; however, there are large costs and risks associated with tunnelling beneath the rail line. These alternatives are not recommended.

Other Municipal Servicing

A Class Environmental Assessment was recently completed for the Hyde Park Trunk Sanitary Sewer. The proposed sewer works are going to be phased with the first stage coordinated with the 2013 Oxford Street West widening. The second stage is scheduled for 2014 and will consist of a new gravity trunk sewer and forcemain on Hyde Park Road, constructed with the Hyde Park Road widening.

Within the Hyde Park Road corridor the local sanitary sewer collection systems are largely undeveloped, particularly between Sarnia Road and North Routledge Park. Prior to construction of the road improvements, the City will implement local improvement processes to determine if there is sufficient financial commitment from beneficiaries for the installation of local sewers. Alternatively, these local sanitary sewers could be delivered under an area rating by-law.

The Hyde Park Road corridor is serviced by both low level and high level water systems. Proposed watermains between Royal York Road and South Carriage Road will complete GMIS water servicing in the area.

Project Phasing

The Growth Management Implementation Strategy (GMIS) presently identifies the improvements of Hyde Park Road from Oxford Street to Fanshawe Park Road as taking place in three phases over a three year period extending from 2014 to 2016. Hyde Park Road from Fanshawe Park Road to Sunningdale Road was included in the EA for long-term planning purposes and is not scheduled until after 2028.

The business community and stakeholders provided input signifying that a three year phasing was too long for the near-term works and requested that the duration be reduced to minimize the impact on the local community. The area has already been subject to extensive construction work in the years since annexation in 1996.

A large single-phase project was evaluated but is considered challenging from a logistical and financial perspective, and potentially a more severe impact on the area businesses. Consequently, the near-term works from Oxford Street to Fanshawe Park Road are proposed to be completed in two phases as follows.

- 2014 - Phase 1 – Oxford Street to north of CPR
- 2015 - Phase 2 – north of CPR to Fanshawe Park Road

These will be large contracts and it is anticipated that minor work will need to carry over to the following year in each phase

The Oxford Street / Hyde Park Road intersection was partially improved during the Oxford Street West widening in 2005. Consequently the intersection, identified as Phase 1B, can be deferred until 2019. This will also allow for consideration of potential Bus Rapid Transit (BRT) improvements since this location is tentatively proposed as a BRT node in the current Transportation Master Plan.

The north phase of the project, from Fanshawe Park Road to Sunningdale Road, is scheduled beyond 2028.

The proposed phasing is illustrated in the following figure:

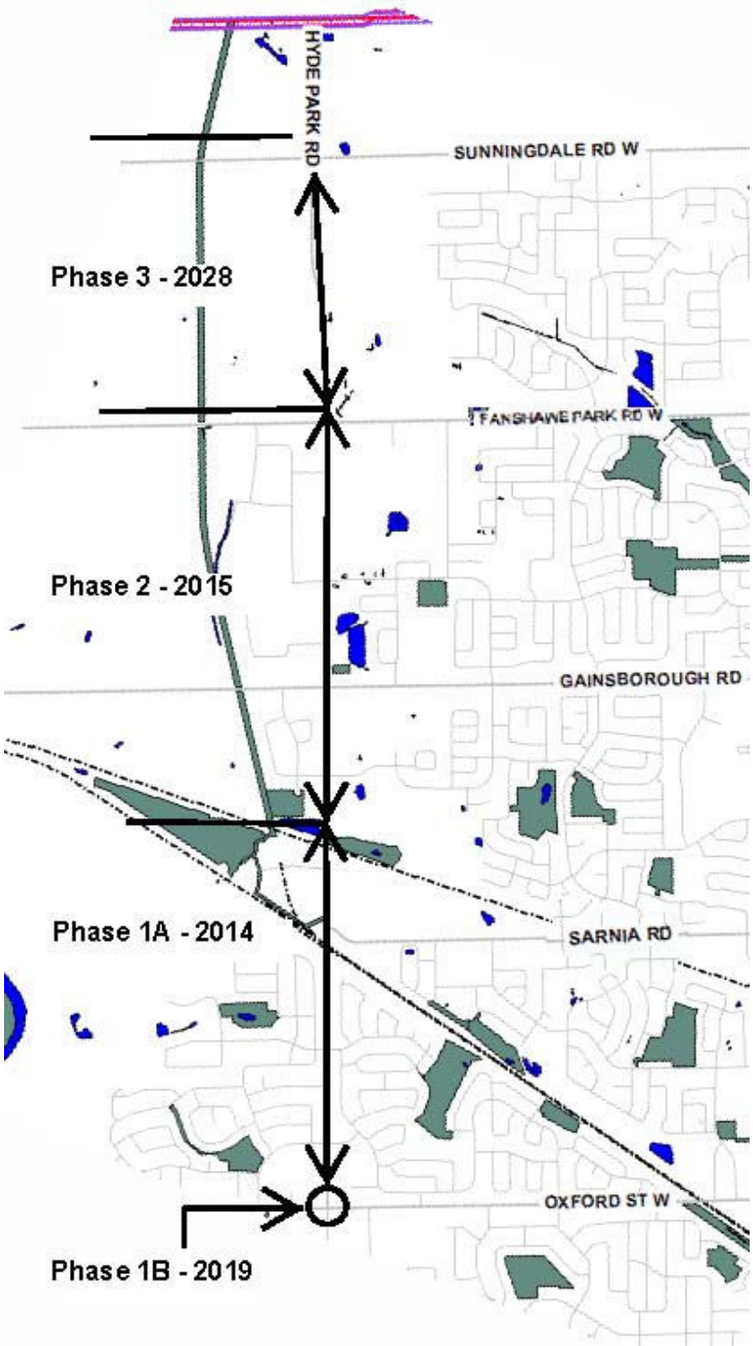

Figure 1: Proposed Project Phasing

Cost Estimate:

The preliminary cost estimate for widening Hyde Park Road is approximately $39M. This is broken down by the recommended phases as follows:

- Phase 1 (2014) $20.4 M
- Phase 2 (2015) $13.8 M
- Phase 1B (2019) $1.8M
- Phase 3 (>2028) $7.6M

These values include roadworks, servicing, utility relocations, property, and engineering. Recoverable costs related to possible local improvements works are also included. A more detailed breakdown of the figures is as follows:

Preliminary Cost Estimate (2011 dollars)	**Phase 1 – 2014** (North of Oxford Street to CPR)	**Phase 2 – 2015** (CPR to Fanshawe Park Road)	**Phase 1B – 2019** (Oxford Street and Hyde Park Road Intersection)	**Phase 3 – 2028** (Fanshawe Park Road to Sunningdale Road)
Road Construction	12,221,000	9,325,000	1,513,000	5,918,000
Sanitary Sewer	613,000 250,000*	630,000*	n/a	n/a
Watermain	2,995,000	482,000	n/a	330,000
Land	1,500,000	1,200,000		
Utility Relocations	875,000	875,000	193,000	550,000
Engineering	1,900,000	1,260,000	100,000	815,000
TOTAL	**20,354,000**	**13,772,000**	**1,806,000**	**7,613,000**

* Local Improvements involve potential extension of sanitary sewer servicing on Hyde Park Road. Work is subject to a successful Local Improvement petition or an area rating by-law. Figures represent estimated city share of costs.

Funds for the design and land acquisition for the first phase of the Hyde Park Road widening have been approved in the 2011 budget. The 2012 budget forecast was submitted before this final EA estimate was available, however, it closely resembles the above and reflects the new phasing plan. Upon approval of the EA, the more precise values presented above will be used in the 2013 Capital Budget Forecast for transportation, water and wastewater capital budgets. The transportation portion of the project costs is 5% higher than the 2009 DC Background Study estimate. This is primarily a result of the Hyde Park hamlet aesthetic enhancements and refined property acquisition costs based on actual requirements.

Summary and Next Steps:

1. A Schedule ‘C’ Class Environmental Assessment for improvements to Hyde Park Road from Oxford Street West to Sunningdale Road West has been undertaken.

2. An Environmental Study Report is ready for final public review. It was prepared with public and agency participation, and includes a preliminary design which provides mitigation measures for impacts associated with the widening.

3. Completion of this phase of the Municipal Class Environmental Assessment process requires that the ESR be placed on public record for a 30-day review period.

4. Subject to no Part 2 Orders (“bump-up requests”) being received within the 30-day review period, design activities and property acquisition related to the first two phases of improvements can commence. The duration of the property acquisition process necessitate that negotiations for the Phase 1 acquisitions begin immediately to meet the project schedule.

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Acknowledgements:

This report was prepared with assistance from Josh Ackworth, Transportation Technologist in the Transportation Planning & Design Division.

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REVIEWED & CONCURRED BY:
PAT MCNALLY, P. ENG. EXECUTIVE DIRECTOR, PLANNING, ENVIRONMENTAL AND ENGINEERING SERVICES DEPARTMENT

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JA/DM

Attach: Appendix “A” – Executive Summary

c. IBI Group, 203-350 Oxford Street West, London, Ontario, N6H 1T3
Betty Mercier, Secretary, Transportation Advisory Committee

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Appendix A – Executive Summary

EXECUTIVE SUMMARY

1. INTRODUCTION AND BACKGROUND

This Environmental Study Report (ESR) identifies and documents the planning and decision-making process completed under a Schedule "C" Municipal Class Environmental Assessment (EA) for roadway improvements within the Hyde Park Road corridor extending from Oxford Street through to Sunningdale Road. The Hyde Park Road EA recognizes and incorporates the significant planning, engineering and public consultation work completed under the 2004 City of London Transportation Master Plan (TMP) which identified physical improvements consisting of the widening of Hyde Park Road from two lanes to four lanes as part of the transportation network improvements required to address the future transportation needs of the City of London.

In addition to the TMP, a number of other studies which relate directly to the proposed undertaking were referred to in providing guidance in the completion of the Hyde Park Road EA, including:

- City of London Growth Management Implementation Strategy (GMIS);
- Hyde Park Community Plan, 1999
- Hyde Park Community Plan – Community and Urban Design Guidelines, 1999;
- Sarnia Road Improvements, Class Environmental Assessment, 2010;
- Hyde Park Road Trunk Sanitary Sewer, Class Environmental Assessment, 2011;
- City of London storm drainage and stormwater management design studies;

The project Study Team drew from the transportation planning, urban design, and engineering expertise provided by the prime consultant, IBI Group, plus the expertise of sub-consultants in the areas of natural sciences, archaeology and geotechnical provided by the firms of Bio-Logic and Golder Associates and finally, the planning, engineering and project management skills of City of London team members.

2. STUDY AREA

The project study area included properties both fronting and backing onto the road allowance throughout the length of the corridor from south of Oxford Street to north of Sunningdale Road as well as adjacent natural areas and storm drainage outlets.

3. PUBLIC AND STAKEHOLDER CONSULTATION

3.1 Public Information Centres (PIC):

The EA commenced in July 2009 and the first of two PIC's was held in September, 2009. The first PIC focused on the need for the undertaking, development of alternatives and the development of evaluation criteria which would be used in selecting the preferred alternative. The second PIC, held in June 2011 focused on the evaluation of alternatives, presentation of the recommended design and mitigation measures.

A notice was published for all public meetings in the Living in the City section of the London Free Press. In addition, direct mail-outs were sent to all commercial and residential properties within the identified study area as well as government agencies, review bodies and stakeholders who had expressed an interest in the project or had provided comment(s) regarding the proposed undertaking.

In total, the combined attendance at the two PIC's was 134 people. Comments received by the public are generally summarized as follows:

- Confirmation of the need for the improvements due to the increase in traffic volumes which are being realized as a result of development in the area; There is significant difficulty moving through the corridor; weekend traffic in particular is very high;
- Concern expressed over the time required to complete the improvements and the impact that an extended construction period would have on the local community and businesses;
- Notwithstanding the recognized need for improvements, there is also a need to control the potential negative impacts of road widening on the hamlet community; significant desire expressed to maintain a "sense of place" within the hamlet;
- The need for noise attenuation measures to address traffic noise; concern express regarding the configuration of the noise wall at the south approach of the CNR overpass;
- The need to provide accommodation of cyclists; need for "on-street" dedicated bike lanes;
- Then need for local sanitary servicing;
- Existing operational issues at intersections including the need for: dedicated left turn lanes; advance turning signals; and signals at intersections where there currently are no signals;
- Need to address cut-through traffic in adjacent residential subdivisions - both short term during construction and longer term.

3.2 Design Charrette:

Through consultation with the Hyde Park Business Advisory Group and the City of London Planning Department, it became apparent that the impact of the proposed improvements on the hamlet community was likely to become one of the defining issues of the Hyde Park Road EA. IBI Group suggested the undertaking of a "design charrette" which would bring together stakeholders from the community and the project design team as well as additional engineering and planning resources within the City and IBI Group. The design charrette was useful in developing urban design alternatives which could be incorporated into the Hyde Park Road corridor improvements and was successful in obtaining a "buy-in" from the local community who became engaged in developing and understanding the trade-offs that would become necessary between balancing needed transportation improvements and the desire to control the potential negative impact of road widening on the hamlet community.

3.3 Commercial Property Access – Consultation

Due to the impact that proposed road improvements could have on the access to a number of existing commercial and residential developments fronting onto the roadway, a separate mail-out was prepared and circulated to property owners where changes were anticipated which would not have been previously identified through development agreements. The mail-out included design "vignettes" which illustrated proposed median and driveway changes in the immediate vicinity of the subject property. In a number of instances, this contact resulted in additional one-on-one meetings.

4. ALTERNATIVE DESIGN SOLUTIONS

The widening of Hyde Park Road from two lanes to four lanes, presented a number of design challenges which resulted in the development of alternatives to address:

- technical design issues;
- issues raised by stakeholders through the public consultation, and
- minimize the overall environmental impact of the proposed undertaking.

The following provides a summary of the major design issues; provides a brief discussion of the approach to address the issue; and provides the rationale for the selection of the preferred alternative to minimize the net environmental impact in each case:

Construction Staging

As outlined in the City's GMIS, the proposed improvements to Hyde Park Road from Oxford Street to Fanshawe Park Road were originally scheduled to take place over three years, commencing in 2014. Improvements north of Fanshawe Park Road were not scheduled to occur until sometime after 2028.

Throughout the EA, the one prevailing issue raised by the local community was the need to get on with the works and to do it quickly. Since 1996, the area has been the subjected to extensive growth and development. This has resulted in successive servicing contracts for the installation of major storm, water and sanitary services which have been severely disruptive to the local community and businesses.

While the need for road improvements is well recognized within the community, there is significant concern that a protracted time period for the implementation of road improvements will be the death knell for a number of small businesses in the area. The Study Team worked closely with the local business association in reviewing phasing alternatives ranging from a single mega construction contract from Oxford through to Fanshawe Park Road to the original planned three phases.

A single large construction contract from Oxford Street through to Fanshawe Park Road would pose significant financial cash flow and logistical challenges for the City and would be of unprecedented size for a municipal road project in the City. Although compressing the construction schedule from three years to one, would reduce the duration of the impact on the community, it was anticipated that the severity of the impact would be greater and perhaps more difficult for businesses to endure.

Given the amount of disruption the community has already endured, three more years of consecutive construction was deemed to be unacceptable by the business community. In the end, it was resolved that completing the works over two years would be the "least harm" alternative. From the City's perspective, completing the works in two large construction contracts was seen to be both financially and logistically doable. Accordingly, the preferred alternative for the implementation of corridor improvements from Oxford Street to Fanshawe Park Road is to be completed in two phases: Phase I works, scheduled for 2014 are to extend from Oxford Street through to just north of the CPR underpass. Phase 2 works, schedule for 2015, are to extend north to Fanshawe Park Road.

Due to the implementation of recent intersection improvements at the Oxford Street intersection and uncertainty around the requirements of future Bus Rapid Transit (BRT) at this location, further improvements within the Oxford Street intersection are to be deferred until approximately 2019.

Widening Alternatives

Property Impacts: In accordance with City of London Official Plan Policies and Transportation Guidelines, the standard road allowance limits for arterial roads is to be 36.0m. This width is deemed necessary to accommodate roadway transportation requirements, bike lanes, sidewalks plus utility requirements which are all elements of major arterial roads. Throughout the length of Hyde Park Road corridor, there are many sections which have significantly less than the standard 36m road allowance.

In the development of widening alternatives designers are typically challenged to investigate widening the road structure to one side or the other of the existing centre line or about the road centre line itself. In this instance, widening generally about the existing centreline was deemed preferable as it minimized overall property impacts and matched historically property takings.

Due to shifts in the existing road corridor, some sections of the roadway are offset slightly to one side or the other however the overall widening of Hyde Park Road is to be generally about the centreline. Accordingly, there will be sporadic property requirements along both sides of the roadway. In a number of locations, property needs have been based on the minimum road allowance width required to accommodate the improvements, which in a number of areas is less that the standard 36.0m.

Hyde Park Hamlet Community - Urban Design Streetscape

The 1999 Hyde Park Community Plan recognized the unique character of the Hyde Park Hamlet community with its proposed mix of new residential and larger commercial blocks developed around an existing hamlet community. Accordingly the Hyde Park Community Urban Design Guidelines were developed to address some of the design challenges associated with incorporating the existing hamlet community with new residential and commercial development.

In keeping with the objectives established in the above documents, the Study Team hosted a design charrette to brainstorm on the issues facing the community and to identify what measures could be incorporated into the proposed road improvement project to help mitigate against the impact of the road widening.

Out of this effort came the creation of a streetscape design portfolio which included a number of elements to be included in the preferred design alternative, including:

- The imposition of a “lane diet” to keep roadway improvements to a maximum cross-section of 5 lanes through the intersection of Gainsborough Road and Hyde Park Road;
- The reduction in standard roadway lane widths from 3.5m to 3.3m and left turn lane widths from 3.3m to 3.0m. This resulted in an overall reduction in the road pavement cross-section of 1.1m providing additional boulevard and sidewalk area. In addition, the reduction in lane widths would have a positive influence in attempting to reduce traffic speeds through the hamlet;
- The use of centre median planter boxes are proposed in the section of Hyde Park Road extending from just north of the CPR tracks to one block north of the Gainsborough Road intersection, which in essence delineates the limits of the hamlet community. The planter boxes would be a decorative feature which would serve to distinguish the hamlet from adjacent areas and would serve as positive influence in reducing traffic speeds through the subject section of roadway;

- The use of decorative lighting outfitted with banner brackets;
- The use of alternate pavement forms to highlight and distinguish intersections, crosswalks and select boulevard areas.

CNR Overpass

The original structure, constructed in 1984/85, was designed to accommodate a future widening of Hyde Park Road from two lanes to four lanes by widening the structure on the east side. The structure is offset to the west and the abutments were extended to the east to accept a future widening of 6.5m. Based on current design standards, a total widening of 16.85m is now required. A number of alternatives were considered for the widening of the existing crossing including: i) widen the existing structure to the east; ii) widen to the west; iii) widen about the centre, and iv) undertake a complete reconstruction/replacement of the existing structure. Cost estimates for the various alternatives ranged from $2.3M to $4.5M with widening to the east and complete replacement being the least cost and most cost alternatives respectively. Other considerations included property impact, constructability, duration of construction, and maintenance of traffic during construction. An evaluation of alternatives lead to the selection of widening to the east as the preferred alternative on the basis of least cost, least impact on property, least duration of construction and ability to maintain at least one lane of traffic in each direction for the period of construction.

CPR Underpass

Similar to the CN structure, the CP underpass/subway was constructed in the mid-1980's and was designed to accommodate the future widening of Hyde Park Road from two lanes to four lanes. The structure opening through which the roadway extends is 19.94m and is not sufficient to accommodate four lanes of traffic, 2 bike lanes plus sidewalks with standard widths at a total requirement of 22.0m.

A number of alternatives were considered which included the construction of one or two pedestrian/pathway tunnels constructed on either one side or both sides of the roadway. Preliminary cost estimates for the construction of new pedestrian tunnels were in the order of $1.5 to $2.0M each. Given the costs and risks associated with tunnelling under the railway, these alternatives were screened out for further evaluation.

The preferred alternative consists of the reduction in the design width of each of the elements to produce a maximum cross-section of 19.94m. This includes the reduction of through lane widths from 3.5m to 3.3m; bike lanes from 1.5m to 1.2m, sidewalks from 1.8m to 1.67m and curb from 0.6m to 0.5m. These reductions still maintain minimum design clearances and enable the entire cross-section for the improvements to be accommodated within the 19.94m available.

For the sidewalks, bike lanes and curb, the reduction in width would only be applied for the 15m length required to clear the underpass. However, the reduction in roadway lane widths would be applied for the entire length of roadway section extending from the CPR overpass north to North Routledge Park. This approach is consistent with the urban design elements established above.

Intersection Designs

One of the purposes of this EA was to develop intersection layouts along Hyde Park Road with the intent of maximizing capacity enhancement while recognizing the need to control the potential negative impacts of road widening on the adjacent properties and land uses. At the intersection level, the City of London defines acceptable service levels based on the ability of traffic to move through the intersection as the "volume-to-capacity (V/C)" ratio. Operational evaluations of intersection designs were completed under a number of different loading scenarios developed by the City of London. If all of the desired performance criteria from a traffic flow perspective were applied at every intersection, the proposed improvements would not only include the provision of

four lanes but multiple turning lanes in each direction which in all cases was not necessarily practical or consistent with other project objectives.

The preferred design alternatives for intersection configurations will result in operational improvements and the intersections are expected to operate within acceptable service levels up to 2022 demand levels. It is recognized that as traffic demands increase from 2022 to 2027 levels, not all of the intersections will be able to maintain the ideal service level objectives established by the City. Operations improvements at the intersection of Hyde Park Road and Oxford Street beyond 2022 may require the further widening of Oxford Street from four lanes to six lanes. Moreover, while technical solutions may be available to address operational deficiencies at the intersection of Hyde Park Road and Gainsborough Road, there has been a conscious decision made to forego ideal traffic solutions in order to obtain other design objectives established within this EA which work towards maintaining a "sense of place" within the hamlet community.

Finally, this EA identified the implementation of a round-about at the intersection of Hyde Park Road and Sunningdale Road as the preferred design alternative. The application of a round-about at this location is consistent with the approach being taken through the Sunningdale Road EA on major intersections along this east west arterial near the northern limit of the City. Although this improvement will not be warranted for a number of years, ie: beyond 2028, the geometrics and land requirements for a roundabout are unique and they need to be identified in advance of development in order to preserve the property. It is expected that further review and evaluation of this alternative will be required through an update of this EA prior to full implementation of Sunningdale Road intersection improvements.

Access Control

Centre medians have been utilized throughout the Hyde Park Road corridor to provide continuity of traffic flow and safety. In some instances, new medians will impact on access to residential and commercial properties fronting onto the roadway by limiting access to "right-in/right-out" movements only. In addition, the preferred design enforces municipal access control standards with respect to driveway locations and widths.

A significant amount of effort has gone into working with the local community in the development of the preferred roadway configuration. In a number of instances, changes were made to the design to facilitate access where possible including the relocation of existing access points to safer locations where a median break could be provided to allow for full turning movements. In other locations, changes were requested by the property owners but were not provided. In each case where modifications were either provided or requested, public safety and the safe movement of traffic was deemed paramount in determining the final roadway alignment and median configurations.

Noise Attenuation

Noise attenuation walls are be provided where warranted in accordance with City of London standard policies for capital projects.

As a result of public input, modifications were made to the noise wall locations at the southeast corner of the approach over the CNR overpass to shift the location of the wall from the standard location along the road allowance limit to behind the sidewalk on the east side as the roadway extends up the approach. At the second PIC, residents expressed concern that the wall height was not sufficient to attenuate traffic noise as the roadway would at some point be completely above the height of the wall. Addressing the situation strictly by increasing the wall height was not deemed practical, therefore the location of the wall was shifted to a location behind the sidewalk. In that location, the wall will follow the road profile as it ramps up to the CNR overpass providing proper noise attenuation.

Stormwater Management and Drainage

Drainage and Stormwater Management investigations were completed as part of this EA. For the northerly portion of the project (north of the CNR), a stormwater strategy had been developed through the "City of London Hyde Park Community Storm Drainage and Stormwater Management Servicing, Municipal Class EA, Schedule B". In addition, numerous subsequent functional design reports and designs for the area had also been prepared for the City both directly and in conjunction with development applications and approvals. These documents provided the basis for the development of a comprehensive stormwater management plan for the Hyde Park Road corridor. A total of 12 separate storm outlets along the corridor were reviewed along with 6 existing/future downstream stormwater management facilities for various levels of both quantity and quality control. Ultimately a preferred drainage/stormwater management plan was developed that was acceptable to the City of London, met the City's subwatershed criteria, and addressed Ministry of Environment requirements. A combination of quality and quantity control of stormwater was met through the use of existing/future stormwater management facilities, and in some cases, a combination of underground pipe storage and oil/grit separators within the right-of-way.

Natural Environment

There are no flood plain or environmental features within the immediate road corridor from Oxford Street through to Sunningdale Road. The only identifiable features within the study limits or within proximity to the proposed works are the Sifton Bog to the southwest of the Hyde Park Road / Oxford Street intersection and the Hyde Park Woodlot located on the east side of Hyde Park Road north of Gainsborough Road. It is not anticipated there will be any impacts on significant plant species nor sensitive wildlife habitat areas either within the roadway corridor or the identified adjacent natural areas.

Utilities

Space within the road allowance is at a premium and extensive relocations of existing utilities are anticipated in order to accommodate the road widening. This is especially true through the southern end of the project from Oxford Street to Gainsborough Road. Detailed investigations will be required early in the design stage to confirm buried utility locations and depths. Buried utilities could be affected by both the widening and changes to the road profile which could affect the cover over utilities. It is anticipated that major utility relocations will be completed in advance of the road works contracts in order to minimize delays and to avoid "constructor" issues.

Municipal Services

Hyde Park Trunk Sanitary Sewer: In June 2011, IBI Group completed a Class Environmental Assessment for the downstream extension of the Hyde Park Trunk Sanitary Sewer running from the CNR corridor south to Oxford Street. The preferred design alternative identified within the EA recommended:

- maintaining a pumping facility at the current location of the existing Hyde Park Pumping Station;
- the installation of a new 400mm diameter forcemain discharge extending from the pumping station to Prince Philip Drive; and,
- the installation of a new 675mm gravity outlet to be constructed along Hyde Park Road to Royal York Road and west on Royal York to Oxford Street.

The proposed 400mm forcemain and the 675mm gravity sewer to be constructed within the Hyde Park Road road allowance, are to be constructed in conjunction with the Phase 1 road improvements.

Local Sanitary Sewers: Within the corridor limits of Hyde Park Road, the sanitary collection system is largely undeveloped with sections of the corridor devoid of any local sanitary sewers. This is especially true in the north end of the project in the area that was annexed to the City in 1996. As such, new local sanitary sewers will need to be installed along most of the area extending north from the CN tracks to north of North Routledge Park. It is anticipated that these sewers would be installed through some form of local improvement with the immediately benefitting areas contributing to the cost of the installation of these services. Prior to the construction of the road improvements, the City of London will implement a programme of canvassing the local property owners to determine if there is sufficient interest and support for the installation of local sanitary sewers.

Watermains: The Hyde Park Road corridor is serviced by both the low level and high level distribution systems. The south end of the study area from Oxford Street to Sarnia Road is serviced off the low level system with an existing 750mm main extending from Oxford Street through to Royal York Road and a 600mm main from Royal York Road through to Sarnia Road. The City of London Water Division intends to upgrade/replace the 600mm main from Royal York Road to Sarnia Road with a new 750mm main and these works are to be completed in conjunction with the Phase I road improvements.

North of Sarnia Road the area is generally service of a separate high level system however a low level 900mm trunk main extends from South Carriage Road through to Fanshawe Park Road with a short 300mm extension running north of Fanshawe Park Road. As part of the road improvements, the Water Division intends to complete the 450mm distribution main with the installation of a new 450mm main from Sarnia Road to South Carriage Road.

5. ENVIRONMENTAL IMPACT AND MITIGATION COMMITMENTS

In addition to the above, the Environmental Study Report (ESR) includes environmental mitigation and commitments relating to the following:

- Sediment and Erosion Control;
- Contaminated Soils;
- Groundwater Impact;
- Management of Excess Materials;
- Vegetative and Landscape Plantings;
- Maintenance of Traffic;
- A Stage 2 Archaeological Assessment of a defined area south of Gainsborough Road;
- A Canadian Environmental Assessment Act (CEAA) screening report for proposed modification to the CNR overpass;
- Monitoring program to ensure recommendations of EA are followed.