To Chair and Members
Committee of the Whole – Operations and Administration

From E. (Beth) Goodger, General Manager, Public Works Commission

1.0 Type of Report
Consent Item [ ]
Item For Consideration [x]

2.0 Topic
Feasibility Study for the Oak Park Road Extension
[Financial Impact - $950,000]

3.0 Recommendation

A. THAT Report titled *Feasibility Study for the Oak Park Road Extension* BE RECEIVED; and

B. THAT staff BE DIRECTED to initiate the Municipal Class Environmental Assessment (EA) study for the Oak Park Road Extension; and

C. THAT Council APPROVE funding of $950,000 from the Transportation Development Charges Reserve Fund (RF0406) to be added to capital project RD1603, Oak Park Road Extension (from Hardy Road south to Colborne Street); and

D. THAT the General Manager, Public Works Commission and the Purchasing Officer BE AUTHORIZED to award Oak Park Road Extension Municipal Class Environmental Assessment as “Pre-approved Solicitation”, in accordance with the City of Brantford’s Purchasing Policy.
4.0 Purpose and Overview

To advise Council of the findings for the Oak Park Road Extension Feasibility Study ("Feasibility Study") and seek direction to prepare the Terms of Reference that will initiate the Municipal Class Environmental Assessment (EA) study for the Oak Park Road extension.

5.0 Background

The Oak Park Road extension as shown in Figure 1 is intended to accommodate long term population and employment growth within the City’s northwest industrial area (NWIA), Southwest Brant, West Brant and Eagle Place communities. The need for the extension was first identified in the Brantford Corridor Study 1981, as well as subsequent City of Brantford Transportation Study 1997, the City’s 2007 Transportation Master Plan (TMP), and the 2014 TMP update.

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Figure 1- Oak Park Road Corridor in the context of wider area road network

Council passed the following resolution in January 2015:

Evaluation of the Oak Park Road Extension – Colborne Street West to Highway 403
WHEREAS the 2014 Transportation Master Plan Update includes a four lane arterial road connection from Colborne Street West to Highway 403 known as the Oak Park Road Extension; and

WHEREAS the Oak Park Road Extension is an integral component of the transportation network for the City of Brantford; and

WHEREAS the Oak Park Road Extension provides a direct link from the Southwest Area of the City to Highway 403; and

WHEREAS the Oak Park Road Extension, in combination with Veterans Memorial Parkway, provides a link from the Northwest Industrial Area to the Southwest, West Brant and Eagle Place communities in the City; and

WHEREAS these links provide alternative transportation routes for all road users to the existing well used transportation routes in the western part of the City including along Colborne Street West, Brant Avenue, Paris Road, and Hardy Road;

NOW THEREFORE BE IT RESOLVED THAT Staff BE DIRECTED to prepare a detailed evaluation of the proposed Oak Park Road Extension as shown in the Transportation Master Plan Update with the evaluation to include the following:

A. THAT the evaluation includes the costs and benefits of the proposed route as well as any alternative routes,

B. THAT the evaluation of the proposed route and each alternative route be done in the context of the best overall transportation scenario for all road users,

C. THAT the evaluation consider the impact that the proposed route and each alternative route will have on the natural environment, Grand River crossing, surrounding existing land uses, and the transportation networks in all areas of the City,

D. THAT the evaluation include the need for land acquisitions for the proposed route and each alternative route with a realistic assessment of the feasibility of any necessary acquisitions, and

E. THAT the evaluation includes public consultation as an integral aspect of the process.
6.0 Corporate Policy Context

The Oak Park Road extension aligns with the following priorities approved by Council in June 2019 as per Report 2019-384: titled 2019-2020 Council Priorities:

- Road Development - Increase Access to West Brant and Highway 403: Provide additional roadway access from West Brantford (West Brant) to Highway 403, to reduce travel time with the following proposed short term objectives:
  - Complete the Feasibility Study for the Oak Park Road Extension
  - Initiate planning related to the construction of the extension including initiating Municipal Class Environmental Assessment (EA) for the Oak Park Road Extension (from VMP/Colborne Street West to Highway 403
  - Identify any capital and human resources that will be required
- Finalize Boundary Implementation Plan

Council approved the 2014 Transportation Master Plan (TMP) in August 2014 (Report PW2014-065), which provided the need and justification supporting the Oak Park Road extension. This corridor was identified as a medium term (2020-2024) recommendation subject to Municipal Class Environmental Assessment and Council approved funding.

7.0 Input From Other Sources

Technical inputs were received through a multidisciplinary Technical Advisory Committee, which included staff from the following departments:

- Engineering Services
- Long Range Planning
- Parks
- Facilities
- Real Estate
Continuous Improvement

Asset Management

Brant County Health Unit

County of Brant

The Committee was presented with an overview of background information and alternatives for consideration. Based on the presentation, the Committee provided input and technical insights on various subjects including cost estimates, constructability, natural environment, transportation capacity, network connectivity, property requirement, design criteria, servicing, structural and drainage.

Public consultation is not part of the Feasibility Study but will be included as part of the EA study. Findings from the Feasibility Study will provide technical details for the public to make an informed decision.

8.0 Analysis

The Brantford Corridor Study 1981 recommended a corridor for the extension, between the existing Kramer’s Way/Hardy Road intersection and Colborne Street West. The alternatives of this study are based on the 1981 study. Figure 2 shows the corridor as well as proposed land uses adjacent to the extension.

Figure 2- Land Uses surrounding the Oak Park Road Extension
A Feasibility Study for the Oak Park Road extension was initiated in 2018, based on direction from the 2015 Council resolution. The purpose of the Feasibility Study is to:

- Determine cross section requirements
- Identify key constraints and challenges
- Develop alignment and alternatives
- Develop cost estimates for each alternative
- Evaluate alternatives

The Feasibility Study was completed in July 2019. The executive summary of the study is attached in Appendix A. The findings of the Feasibility Study will guide the scoping of the EA, which will include public consultation, design, and submission for the province’s approval.

8.1 Cross Section Requirements

The City’s southwest community currently has indirect connections to Highway 403 and to the City’s north-west industrial area. Travel demands generated by developments located in these parts of the city rely on corridors through the downtown and other meandering connections leading to Highway 403.

Without Oak Park Road extension, the adjacent north-south links (on Brant Avenue via Colborne Street West and Rest Acres Road through Brant County) will carry the bulk of the traffic demand. Analysis from the Feasibility Study confirmed there is insufficient capacity to serve future needs of the southwest community without the extension. Traffic assessment concluded that the Oak Park Road extension will need four lanes in the next 10 years.

A supplemental analysis was undertaken to simulate widening of Rest Acres Road from 2 lanes to 4 lanes. Oak Park Road extension is still required under this scenario since widening Rest Acres Road alone will not meet future needs. Furthermore, Rest Acres Road is not within the City’s jurisdiction, which creates a number of uncertainties for its function in the future.

Active transportation can be supported through multi-use trails on either one or both sides of the extension with connecting links to the existing trail network. Figure 3 shows a typical cross section utilized in the Feasibility Study.
8.2 Key Constraints and Challenges

There are a number of key constraints and challenges within the study area. Consideration of the constraints and challenges are discussed in the following sections.

8.2.1 Oak Hill Cemetery and adjacent residential community

The Oak Hill Cemetery was opened in 1993 and is owned and operated by the City of Brantford. The *Oak Hill Cemetery Master Plan 1990* identified a future roadway corridor (the Oak Park Road extension) that would bisect the property. On-site circulation could be maintained via an underpass at the new roadway.

There is a significant elevation difference between Colborne Street West and Oakhill Drive. It is challenging to maintain an acceptable road grade through this section while providing at-grade intersections at Oakhill Drive and the Oak Hill Cemetery.

Limited alignment options were available to the south of the Oak Hill Cemetery property due to topography, property limitations and vertical fill requirements. Grading also affects the residential neighbourhood to the east of Oak Park Road and south of the Grand River as the access point from Colborne Street West may be limited.

8.2.2 Trail Network and the existing Grand River Crossing

Numerous off-road trails are currently in place along the proposed corridor for the Oak Park Road extension. The Oak Hill Trail begins at the south end of the...
Oak Hill Cemetery and extends to north of the Grand River where it meets the S.C. Johnson Trail. The S.C. Johnson Trail is part of the Trans Canada Trail system and provides connections to Hardy Road.

A steel truss pedestrian structure is in place where the Oak Hill Trail crosses the Grand River named the Gordon Glaves Crossing. The structure was built in 1999 for the purpose of carrying municipal watermain and sanitary sewer pipes across the Grand River that serve the industrial area in the northwest. It also provides a 4.5m wide wooden deck suitable for use by both pedestrians and cyclists.

8.3 Development of Alignment and Alternatives

Initial alignment options based on the 1981 study and variations of the alignment were developed based on known constraints and design standards. The most viable of these were then further refined and turned into alternatives for analysis and evaluation.

8.4 Summary of Alternatives

Alternatives were developed based on scope of work and project constraints such as existing connections to Colborne Street West and to the north of the Grand River. The figures for each alternative are in Appendix B.

There are three alignments for the new Oak Park Road corridor and grade options for two of these alignments for a total of five (5) alternatives:

- Alternatives 1A and 1B are based on a straight extension of Oak Park Road, centred on the Right of Way (ROW)
- Alternatives 2A and 2B are based on an alignment slightly east of the protected corridor
- Alternative 3 is based on an alignment furthest east, at the narrowest point of the river

The descriptions of alternatives are summarized in Table 1:
### Table 1- Description of Alternatives

<table>
<thead>
<tr>
<th>Design Considerations</th>
<th>Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1A</td>
</tr>
<tr>
<td>Alignment</td>
<td>straight extension, centred on the ROW</td>
</tr>
<tr>
<td>Grading in the South</td>
<td>maximum allowable grade, minimize fill requirements</td>
</tr>
<tr>
<td>Oakhill Dr/cemetery crossing</td>
<td>severed</td>
</tr>
<tr>
<td>Gordon Glaves Crossing</td>
<td>rerouted to the multi-use pathways along the west side of the Oak Park Road crossing</td>
</tr>
</tbody>
</table>

### 8.5 Costing of Alternatives

Table 2 summarizes the capital and operating cost of each alternative. The range of capital cost is between $70M to $94M in 2019 dollars. The difference between lowest and highest operating costs is $30,000 per year, or about 10% relative to the lowest operating cost.
Table 2- Costing of Alternatives (2019 dollars)

<table>
<thead>
<tr>
<th>Cost</th>
<th>Alternative Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1A</td>
</tr>
<tr>
<td>Capital Cost</td>
<td>$76M</td>
</tr>
<tr>
<td>Annual Operating Cost</td>
<td>$310,000</td>
</tr>
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</table>

8.6 Evaluation of Alternatives

Table 3 summarizes the summarized evaluation of each alternative, with the alternative with the higher points ranking higher. A detailed evaluation table is in Appendix C. All five alternatives are compared against the status quo, which is referred to as the “Do Nothing” alternative in Table 3.

Table 3- Evaluation of Alternatives

<table>
<thead>
<tr>
<th>Evaluation Factor</th>
<th>Do Nothing</th>
<th>1A</th>
<th>1B</th>
<th>2A</th>
<th>2B</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation (out of 24)</td>
<td>2</td>
<td>18</td>
<td>23</td>
<td>18</td>
<td>23</td>
<td>16</td>
</tr>
<tr>
<td>Technical Requirements (out of 16)</td>
<td>7</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>Socio-Economic Environment (out of 12)</td>
<td>4</td>
<td>10</td>
<td>9</td>
<td>10</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Cultural Heritage (out of 12)</td>
<td>12</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Natural Environment (out of 28)</td>
<td>26</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>Cost (out of 16)</td>
<td>10</td>
<td>11</td>
<td>8</td>
<td>13</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>TOTAL (out of 108)</td>
<td>61</td>
<td>78</td>
<td>79</td>
<td>80</td>
<td>81</td>
<td>49</td>
</tr>
</tbody>
</table>

Alternatives 1A, 1B, 2A and 2B have similar number of points, but alternatives 1A, 2A and 3 are less desirable than alternatives 1B and 2B because through access to Oakhill Drive and Oak Hill Cemetery will be severed. This would leave the residential area in the northeast quadrant of Colborne Street West and the extension with only a singular access point. Cemetery maintenance crews
and visitors would be required to use a longer, indirect route to travel between the main buildings and grounds to the east of Oak Park Road.

Another constraint of Alternative 3 is associated with environmental considerations. Alternative 3 was considered based on this being the narrowest point to cross the river within the available corridor and potentially lower costs for the bridge structure. The Feasibility Study determined that the lands to the north of the river are low-lying and have the potential to flood during high-water levels. Additionally, a review of available environmental data revealed that these lands are designated as a Provincially Significant Wetland by the Ministry of Natural Resources and Forestry (MNRF) and as an Environmental Protection Policy Area by the City of Brantford. As a result of these environmental considerations it is the most expensive alternative.

Alternatives 1B and 2B are considered most feasible. With the grade separation at Oakhill Drive, existing access for the neighborhood and cemetery will maintain, for a marginally higher capital cost. It should be noted that a grade separation was identified in the Oak Hill Cemetery Master Plan 1990.

While the preferred alternative is 2B based on the Feasibility Study, it will need to be confirmed through the EA study with public input.

### 8.7 Intersection Improvements

The following intersections are also identified for potential improvements:

- Highway 403 south ramp terminal at Rest Acres Road: signalized or roundabout, with dedicate eastbound left and right turn lanes
- Highway 403 north and south ramp terminal at Oak Park Road: signalized or roundabout, with dedicate eastbound and westbound left and right turn lanes
- Colborne Street W at Veteran Memorial Parkway: dual eastbound left turn lanes and free southbound right turn
- Brant Road/Paris Road: signal timing improvement
- Signalized control at:
  - Hardy Road/Kramer’s Way and Oak Park Road
  - Colborne Street and Oak Park Road Extension
Rest Acres Road and Robinson Road  
Colborne Street and Pleasant Ridge Road/Forced Road

8.8 Staging

The proposed cross section for the Oak Park Road extension contains a median, which allows the possibility to phase the project by initially constructing a two-lane roadway with a widening to four-lanes in the future as necessary. This would be achieved by constructing one side of the roadway initially and marking it for two-way travel.

The grade separation structures at Oak Hill Drive and the Oak Hill Cemetery would be constructed in their entirety whereas the structure over the Grand River could be built in stages.

8.9 Next Steps

With the completion of the Feasibility Study, the next step will be to prepare the Terms of reference to retain consulting services to undertake the EA study, which would include public and stakeholder consultation. The EA study will also provide additional analysis and opportunities to confirm all improvements that may be required. If approved, staff will proceed with preparing the tendering documents in fourth quarter of 2019.

It will take approximately 12-14 months to complete the EA. Council approval of the preferred alternative and filing of the EA would occur in mid-2021. Design could be initiated following the completion and approval of the EA, with construction beginning 2023. It is expected that the construction will take 5-7 years to complete.

9.0 Financial Implications

The total cost to undertake the EA is estimated to be $1M. Partial funding of $50,000 has been approved in the 2019 Capital budget. Additional funding of $950,000, currently identified in the 2020 Capital Budget, is required in 2019 in order to retain consultative services to complete the EA. Finance staff has confirmed that these funds are available in the Transportation Development Charges Reserve Fund (RF0406). The full funding for the EA will become available through approval of this report.
All the alternatives identified in the Feasibility Study have cost estimates that are significantly higher than the $36.8M identified in the previous 10 year capital forecast. The project costs will be updated based on the findings of the Feasibility study and submitted as part of the 2020-2029 Capital Budget, which will be presented to the Estimates Committee later this year when it considers the 2020 budget. The cost estimates will be refined again during the EA process that will be completed in 2020 and the Capital budget will be subsequently updated with those costs.

As identified in Report 2019-384 “2019-2020 Council Priorities”, approved by Council in June 2019, additional staff resources will also be required. In order to expedite the work on the EA, Council will need to approve the unmet need for two positions in the Transportation Services Division of the Engineering Services Department. These positions will be brought forward as unmet needs as part of the 2020 Estimates process.

10.0 Conclusion

The Oak Park Road Extension Feasibility Study assessed various alternatives based on technical merits that will provide foundation for an EA study. Approval of this report will direct staff to initiate the EA study.

R. Loukes, P. Eng
Director, Engineering Services

E. (Beth) Goodger
General Manager, Public Works Commission

T. Ku, P. Eng., PTOE
Manager, Transportation Services

Attachments

Appendix A: Executive summary
Appendix B: Exhibits of alternatives
Appendix C: Detailed evaluation of alternatives
In adopting this report, is a by-law or agreement required? If so, it should be referenced in the recommendation section.

By-law required [ ] yes [X] no

Agreement(s) or other documents to be signed by Mayor and/or City Clerk [ ] yes [X] no

Is the necessary by-law or agreement being sent concurrently to Council? [ ] yes [X] no