Appendix N
Survey
City of Barrie  
Hewitt's Secondary Plan Class EA  

Technical Report – Legal Survey  

1. Introduction  
The City of Barrie has retained Hatch (formerly Hatch Mott MacDonald) to complete a Schedule “C” Municipal Class Environmental Assessment (EA) for the proposed widening of Mapleview Drive, Lockhart Road, Yonge Street and Big Bay Point Road within the Hewitt’s Secondary Plan Area (SPA) to address both short and long term considerations for planned future growth up to 2031. The purpose of this Technical Memorandum is to provide details of the legal survey undertaken in support of the Hewitt's Secondary Plan Class EA.

1.1 Project Background  
The annexation and subsequent redevelopment of land into the City of Barrie through The Barrie-Innisfil Boundary Adjustment Act, 2009 (Bill 196) places additional demands on the City’s existing municipal infrastructure. To facilitate this growth, the City has recognized the need for improvements to and upgrading of existing infrastructure as well the need for new infrastructure. To this end the City, through previous study has identified a need for widening of 4 urban arterial and collector roads. The proposed road widenings within the Hewitt’s SPA include:

- Lockhart Road improvements from Huronia Road to east of the Hewitt’s Creek crossing at the east;
- The Mapleview Drive improvements from Huronia Road to Sideroad 20 in the east;
- Yonge Street improvements from Lockhart Road to Mapleview Drive; and
- Big Bay Point Road from West of McCormick Gate to the future Collector 11 Road in the east.

In addition, two (2) railway grade separations were identified as required within the study area, notably:

- Mapleview Drive crossing of the Metrolinx GO Transit corridor east of Yonge Street; and
- Lockhart Road crossing of the Metrolinx GO Transit corridor east of Yonge Street.
The EA is also being undertaken in support of adjacent development growth within the corridor which is currently underway or is scheduled to reach subdivision approval within the lifespan of the EA.

1.2 Purpose
The purpose of this Technical Memorandum is to provide details of the legal survey undertaken in support of the Hewitt’s Secondary Plan Class EA. The City of Barrie identified that the legal survey, similar to the topographic survey, was to apply only to the areas surrounding the proposed major structures.

1.3 Reference and Background Data
As part of the project, additional data was provided by the City of Barrie in order to supplement the legal survey data:

- 2007 LIDAR Data
- 2012 Aerial Mosaic
- 2013 Aerial Photography
- 2012 City of Barrie Terrain data

This information was also supplemented with data provided by other sources including:

- LIDAR data and Conformity plans provided by the adjacent landowners group
- 2016 LIDAR survey of the Metrolinx Rail Corridor provided by Metrolinx

All legal survey information obtained as part of the Hewitt’s SPA Class EA was to be undertaken using UTM Zone 17 NAD 83 coordinate. The preparation of reference plans and the setting out of survey bars and monuments was not part of the study.

2. Legal Survey
As previously indicated the legal survey was undertaken by J. D Barnes Ltd for Hatch on behalf of the City of Barrie. The survey was isolated, as detailed in the terms of reference, to select locations within the study limits, notably:

- Planned grade separated railway crossing on Mapleview Drive east of Yonge Street;
- Planned grade separated railway crossing on Lockhart Drive east of Yonge Street;
  and
- Major watercourse crossings

Field work for the project was undertaken in December of 2015 and provided to Hatch in early 2016. The legal survey was undertaken using the following general guidelines for each of the specific locations:

- Major Watercourses – existing rights of way, parts and easements
• Railway Crossings – existing rights of way, parts and easements.

Detail contained with the above noted guidelines included:

• Visible survey bars, fence lines or other identifiable means of delineating the existing right of way.

The legal survey was provided in an electronic format suitable for including in the Autocad format drawings.

The field work was hindered slightly by ongoing construction occurring on Mapleview Drive between Huronia Road and Yonge Street restricting access to some of the watercourses. In addition access along the railway corridor was also limited due to the requirement to undertake railway flagging operations, thus the survey information obtained by J D Barnes was supplemented with a 2016 LIDAR survey undertaken by Hatch on behalf of Metrolinx, which was provided to the City by Metrolinx.

3. Quality of the Survey

The quality of the legal survey was determined based on comparison to the City’s GIS property fabric, legal survey R-Plans provided by the City and conformity plans provided by the adjacent landowners group. In general terms the survey and the City of Barrie GIS property fabric were found to correspond within anticipated levels of accuracy. Similarly the legal survey was found to correspond within an acceptable degree of accuracy with provided R-Plans within the areas on which field surveys were undertaken. Given the nature of the conformity plans the level of accuracy was less in comparison with the R-Plans but was still well within acceptable levels of accuracy.

4. Conclusion

The legal survey was completed as per the requirements of the terms of reference for the project and in accordance with City of Barrie and industry standards. It was successfully incorporated into the background information and used to provide sufficient detail to undertake the required designs at the major structures.

Robert Shamess

XX:xx
Attachment(s)/Enclosure
City of Barrie
Hewitt's Secondary Plan Class EA

Technical Report – Topographic Survey

1. Introduction

The City of Barrie retained Hatch (formerly Hatch Mott MacDonald) to complete a Schedule “C” Municipal Class Environmental Assessment (EA) for the proposed widening of Mapleview Drive, Lockhart Road, Yonge Street and Big Bay Point Road within the Hewitt’s Secondary Plan Area (SPA) to address both short and long term considerations for planned future growth up to 2031. The purpose of this Technical Memorandum is to provide details of the topographic survey undertaken in support of the Hewitt’s Secondary Plan Class EA.

1.1 Project Background

The annexation and subsequent redevelopment of land into the City of Barrie through The Barrie-Innisfil Boundary Adjustment Act, 2009 (Bill 196) places additional demands on the City’s existing municipal infrastructure. To facilitate this growth, the City has recognized the need for improvements to and upgrading of existing infrastructure as well the need for new infrastructure. To this end the City, through previous study has identified a need for widening of 4 urban arterial and collector roads. The proposed road widenings within the Hewitt’s SPA include:

- Lockhart Road improvements extend from Huronia Road to east of the Hewitt’s Creek crossing at the east;
- The Mapleview Drive enhancements are featured from Huronia Road to Sideroad 20 in the east;
- Yonge Street alterations are planned for between Lockhart Road to Mapleview Drive; and
- Big Bay Point Road from West of McCormick Gate to the future Collector 11 Road in the east.

In addition, two (2) railway grade separations were identified as required within the study area, notably:

- Mapleview Drive crossing of the Metrolinx GO Transit corridor east of Yonge Street; and
1.2 Purpose

The purpose of this Technical Memorandum is to provide details of the topographic survey undertaken in support of the Hewitt's Secondary Plan Class EA. The City of Barrie identified that the topographic survey was to apply only to the areas surrounding the proposed major structures.

1.3 Reference and Background Data

As part of the project additional data was provided in order to supplement the surveyed topographic data by the City of Barrie:

- 2007 LIDAR Data
- 2012 Aerial Mosaic
- 2013 Aerial Photography
- 2012 City of Barrie Terrain data

This information was also supplemented with data provided by other sources including:

- LIDAR data and Conformity plans provided by the adjacent landowners group
- 2016 LIDAR survey of the Metrolinx Rail Corridor provided by Metrolinx

All topographic data surveyed as part of the Hewitt’s SPA Class EA was to be undertaken using UTM Zone 17 NAD 83 coordinate system utilizing 2nd order horizontal and vertical control monuments.

2. Topographic Survey

As previously indicated the topographic survey was undertaken by J. D Barnes Ltd for Hatch on behalf of the City of Barrie. The survey was isolated, as detailed in the terms of reference, to select locations within the study limits, notably:

- Planned grade separated railway crossing on Mapleview Drive east of Yonge Street;
- Planned grade separated railway crossing on Lockhart Drive east of Yonge Street; and
- Major watercourse crossings

Field work for the project was undertaken in December of 2015 and provided to Hatch in early 2016. The topographic survey was undertaken using the following general guidelines for each of the specific locations:
• Major Watercourses – spot elevations at 10m cross-sections for 50m north and south of the road centreline along the watercourses, and spot elevations for 30m along roads east and west from the intersection of the road and watercourse

• Railway Crossings – 200m either side of the railway centreline along the roads and 50m north and south along the railway corridor from the centreline of the roads.

Detail contained with the above noted guidelines included:

• Visible above ground services including ditches, culverts, hydro poles, manholes, catchbasins, light standards, fire hydrants and valves.

• Significant isolated trees (greater than 0.15m trunk diameter). For wooded areas the outline or edge of trees was located without the identification of individual trees

• An additional 10m overlap beyond the right of way or edge of vegetation or building face (whichever was closer) was also provided.

The topographic survey was provided in an electronic format suitable for including in the Autocad format drawings.

The field work was hindered slightly by ongoing construction occurring on Mapleview Drive between Huronia Rd and Yonge Street restricting access to some of the watercourses. In addition access along the railway corridor was also limited due to the requirement to undertake railway flagging operations, thus the survey information obtained by J D Barnes was supplemented with a 2016 LIDAR survey undertaken by Hatch on behalf of Metrolinx, which was provided to the City by Metrolinx.

3. Quality of the Survey

The quality of the topographic survey was determined based on comparison to the City’s digital terrain model and topographic survey information provided by the adjacent landowners group. In general terms the survey and the City of Barrie terrain model were found to correspond within anticipated levels of accuracy, although the further from the centreline of the existing roadway the difference between field surveys and the LIDAR surveys increased due to the limitations of LIDAR surveys to differentiate between breakpoints (i.e. edge of pavement) to the same level of accuracy as an actual field survey. However, this should not affect the ability to complete the design. The specific areas surrounding the major structures are sufficiently accurate to undertake a higher level of design at these locations.

4. Conclusion

The topographic survey was completed as per the requirements of the terms of reference for the project and in accordance with City of Barrie and industry standards. It was successfully incorporated into the background information and used to provide sufficient detail to undertake the required designs at the major structures.