

## Summary of Background Reports

Report	Key Findings and Next Steps
<p><b>Air Quality Assessment</b></p> <p>Prepared by RWDI Air Inc., 2019</p>	<p>The Ministry of the Environment, Conservation and Parks (MECP) D-series guidelines provide direction for land use planning to maximize compatibility of industrial uses with adjacent land uses. The goal of Guideline D-6 is to minimize encroachment of sensitive land uses on industrial facilities and vice versa, in order to address potential incompatibility due to adverse effects such as noise, odour and dust. Recommended minimum separation distances are provided based on the industry size and operation type.</p> <p>The 2019 report noted that the predicted particulate and odour levels are within the applicable thresholds and are therefore considered to be acceptable throughout the Wilmot Creek Neighbourhood Secondary Plan study area.</p> <p>The setback requirements for the two facilities; Canopy Growth at 20 metres and Detox Environmental Ltd. at 70 metres; both fall outside of the Wilmot Creek Neighbourhood study area and therefor there are no impacts to development within the Wilmot Creek Neighbourhood with respect to the nearby industries.</p> <p><b>Next Step:</b> Policy to be included in the Secondary Plan to require an update to the Air Quality Assessment as part of a complete application.</p>
<p><b>Noise and Vibration Study</b></p> <p>Prepared by HGC Engineering, 2015.</p> <p><b>Note: Report to be updated prior to Recommendation Report</b></p>	<p>HGC Engineering completed a draft noise and vibration feasibility study in 2015 as part of the original private development applications. The key findings from the 2015 investigation are summarized.</p> <ul style="list-style-type: none"> <li>• Areas requiring noise barriers comprised of berms and acoustic fencing on top and preliminary heights, dwellings which require forced air ventilation systems and central air conditioning, upgraded building constructions and the recommendation for a further detailed noise report were identified.</li> <li>• Ground borne vibration measurements were also completed at the closest proposed residential building façade adjacent to the railway right of way, at 30 m. Vibration levels were found to be below the Canadian National (CN) guideline and therefore mitigation for vibration was not required.</li> </ul>

	<ul style="list-style-type: none"> <li>• The site visits in 2015 concluded that the surrounding existing commercial/industrial uses were not considered to be a significant source for noise or vibration.</li> <li>• Road traffic data was obtained from the Ministry of Transportation (MTO) and rail traffic from CN railway in 2015. Current and/or projected data will need to be obtained from MTO and CN Railway.</li> </ul> <p><b>Next Step:</b> The Noise and Vibration Study Update will be prepared based on the recommended Land Use Plan for the Secondary Plan Area.</p>
<p><b>Archaeological Assessment</b>  Prepared by Archeoworks Inc.</p>	<p>Previous background work had identified elevated potential for the recovery of archaeologically significant materials within the study area. As the study area consisted of a ploughed agricultural field, it was subjected to a pedestrian survey at five-metre transects. No archaeological material was encountered during the pedestrian survey.</p> <p>In consideration of the study area testing negative for archaeological resources during the Stage 1-2 AA, the report concluded that the study area is considered free of archaeological concern. No further work is recommended.</p>
<p><b>Hydrogeological Investigation and Water Balance Study</b>  Prepared by Terraprobe Inc.</p>	<p>The purpose of the investigation is to provide information regarding the requirements for groundwater control for the development, both during the construction phase and following construction.</p> <p>Based on the results of the investigation, the following conclusions and recommendations are provided:</p> <ul style="list-style-type: none"> <li>• The Site is mostly underlain by a surficial layer of topsoil, underlain by undisturbed native soils of sandy silt to silty sand and clay and silt extending to the full depth of investigation. Exceptions were observed at borehole location BH4 and BH9.</li> <li>• The groundwater level generally fluctuates seasonally at the Site. The groundwater flow at the Site is towards the south on the majority of the site with the eastern edge of the Site flowing towards the east.</li> <li>• The hydraulic conductivity of the water bearing zone (silt and sand to silty sand) approximately ranges from 10-5 to 10-7 m/second based on the in-situ SWRT tests. For the purpose of assessing groundwater seepage rate, hydraulic conductivity of 10-6 m/second was assigned to the water bearing strata.</li> </ul>

	<ul style="list-style-type: none"> <li>The total ground water recharge component for the area is estimated as 140 mm/a with 563 mm/a of evapotranspiration, and 140 mm/a of runoff. The infiltration volumes over the pre-developed site were calculated as 13,080 m<sup>3</sup>. These calculations are based on a total pre-development area of approximately 333,673 m<sup>2</sup> (33 ha).</li> </ul> <p>The recommendations provided in the report will be utilized in the detailed design stage of the development.</p>
<p><b>Geotechnical Investigation</b> Prepared by Terraprobe Inc.</p>	<p>The geotechnical investigation provided recommendations for house foundations on native soil and engineered fill, foundation installation, basement floor slab, earth pressure design parameters, basement drainage, pavement design and drainage, pipe bedding, backfill, and excavations.</p> <p>The recommendations provided in the report will be utilized in the detailed design stage and construction of residential dwellings and the road system.</p>
<p><b>Traffic Impact Study – Existing Conditions Assessment</b> Prepared by GHD., 2019</p> <p><b>Note: Report to be updated prior to Recommendation Report</b></p>	<p>The purpose of the Traffic Impact Study – Existing Conditions Assessment was to assess the existing conditions, to determine the traffic volumes anticipated to be generated by the proposed development during the critical weekday am and weekday pm peak periods; to assess the impact of this traffic on the nearby roadways; and if needed, to recommend improvements to accommodate the projected traffic.</p> <p>The existing Road network that was assessed includes</p> <ul style="list-style-type: none"> <li>Highway 401 interchange at Bennett Road</li> <li>Bennett Road</li> <li>Lake Road/South Service Road</li> <li>Wilmot Creek Drive</li> </ul> <p>Under existing conditions, the study area intersections are currently operating with acceptable levels of service and delays with minimal queuing. The analysis of the a.m. and p.m. peak hours confirm that there is reserve capacity available within the existing road network to accommodate additional future development.</p> <p><b>Next Step:</b> The Traffic study will be updated to assess the proposed traffic conditions based on the recommended Land Use Plan for the Secondary Plan Area.</p>

<p><b>Existing Environmental and Geomorphological Conditions Report</b></p> <p>Prepared by Savanta, 2019 with GEOMorphix</p>	<p>The Existing Conditions report describes the extent and quality of natural heritage features on, and surrounding, the Wilmot Creek Neighbourhood Secondary Plan area.</p> <p>The extent and quality of the natural heritage features on the subject lands have been influenced by historic agricultural activities, past disturbances, and the presence of the Hwy 401 and Canadian National Rail corridor. The primary future development constraint will involve the maintenance of the Rickard Creek watercourse, the associated riparian/wetland corridor and vegetation protection zones.</p> <p>Note: Features identified for protection in this report have been identified as Environmental Protection Area on the Land Use Plan. Policies have been included in the Secondary Plan to protect these features. As well, and Environmental Impact Study will be required as part of a complete application.</p> <p>A fluvial geomorphological assessment of the two tributaries within the subject lands was completed. This assessment included a background review, reach delineation, rapid geomorphic assessments, a detailed geomorphic assessment of the most sensitive reach within Rickard Creek, erosion threshold modelling in support of the SWM plan, and determination of meander belt widths for both tributaries.</p> <p>A detailed geomorphic assessment was completed for portions of the Rickard Creek to inform erosion threshold modelling. The erosion threshold values for the bank materials are the most conservative and should be used as the ultimate threshold values. The critical discharge value is 0.254 m<sup>3</sup>/s.</p> <p>Meander belt width values were empirically modelled as reaches had been previously modified and there were no measurable meanders Based on historical aerial photographs and field observations. Meander belt width values for the Rickard Creek varied between 15.0 and 19.0 m.</p> <p><b>Next Step:</b> Information provided in this report will be used to inform the Stormwater Management Plan to be prepared in support of the Secondary Plan.</p>
<p><b>Water and Wastewater Servicing Report</b></p> <p><b>Floodplain Analysis and Stormwater Management Plan</b></p>	<p>The purpose of the Water and Wastewater Servicing, Floodplain Analysis and Stormwater Management Report (FSSR) is to:</p> <ul style="list-style-type: none"> <li>• Demonstrate that the proposed development can be graded and serviced in accordance with the Agency standards:</li> <li>• Delineate the existing Regulatory Floodplain on the site; and</li> </ul>

<p>Prepared by SCS Consulting.</p> <p><b>Note: Reports to be updated prior to Recommendation Report</b></p>	<ul style="list-style-type: none"><li>• Confirm the stormwater management criteria and preliminary stormwater management options.</li></ul> <p>Existing Sanitary Servicing - The Secondary Plan Area is not currently serviced however there are two sanitary sewers in the area that can take flows from the Secondary Plan area:</p> <ul style="list-style-type: none"><li>• an existing 250 mm diameter sanitary sewer is located on the 65 easement/future Lake Road at Bennett Road near the northwest corner of the site that conveys flows west to the Bowmanville Water Pollution Control Plan</li><li>• an existing 300 mm diameter sanitary sewer is located south of the CN Railway on Port Darlington Road.</li></ul> <p>A sanitary sewer pumping station will be required to convey flows to these existing services.</p> <p>Existing Water Servicing - The Secondary Plan Area is not currently serviced however there are watermains in the area that can service the Secondary Plan area including:</p> <ul style="list-style-type: none"><li>• an existing 400 mm diameter watermain located on the easement/future Lake Road at Bennett Road near the northwest corner of the Study Area that is connected to the Bowmanville Water Distribution System.</li><li>• An existing 300 mm diameter watermain on Bennett Road that connects to a 300 mm diameter watermain from Port Darlington Road to the existing 400 mm diameter watermain at Lake Road.</li></ul> <p>Existing Storm Drainage - The western portion of the study area generally sheet drains from north to south toward a low point approximately 225 m east of Bennett Road at the CN Railway. The central portion of the study area drains to the Rickard Creek (east of Bennett Road).</p> <p>Floodplain Analysis - Rickard Creek traverses the central portion of the site and is located east of Wilmot Creek Drive. An upstream external drainage area, from land north of and including Highway 401, drains to the Rickard Creek. The total upstream drainage area to Rickard Creek is approximately 129 ha.</p> <p>The peak runoff rate generated by greater of the 100 year or the Regional Storm (Hurricane Hazel) will be defined as the Regulatory flow rate for the purpose of the Regulatory floodplain mapping. The results of the hydrology modelling show that the Regional storm event (Hurricane Hazel)</p>
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	<p>produces the largest peak flow rate and will therefore be used to define the regulatory flood plain mapping.</p> <p>Using the provided information, a regulatory floodline was mapped and will assist with determining the development limits for the Secondary Plan Area.</p> <p>Stormwater Management - The ideal location for the stormwater management pond is in the mid-south portion of the Hydro Corridor, as this is the low point in the topography. A suitable outlet will be required and may involve installation of a new culvert under the railway and either piping or channelling south to combine with the outlet channel from the existing stormwater management pond south of the railway.</p> <p><b>Next Steps:</b> A water servicing capacity analysis will be completed to confirm the water servicing requirements for the Secondary Plan. A Functional Servicing Report (Sanitary and Water) and a Preliminary Stormwater Management Plan will be prepared in support of the Secondary Plan. Policies will be included in the Secondary Plan to require the detailed design reports as part of a complete application.</p>
<p><b>Active Transportation Analysis</b> Prepared by thtinc, 2019</p>	<p>The Active Transportation Analysis focused on a review of existing and planned pedestrian/cycle trail systems adjacent to and connecting to the Wilmot Creek Neighbourhood Secondary Plan area and identified opportunities for providing enhanced or new linkages.</p> <p>The Active Transportation Plan includes recommendations for:</p> <ul style="list-style-type: none"> <li>• Designing safe and direct routes for pedestrian travel to walkable nodes such as community facilities, transit terminals and commercial areas;</li> <li>• Designing Active Transportation networks that incorporate trails with natural features, open spaces, parks and integrates with the planned road system;</li> <li>• Ensuring that all roadways are designed with Complete Street principles that provide sidewalks and street trees on both sides of arterial and collector road rights-of-way;</li> <li>• Integrating pedestrian and cycle networks with adjacent trail systems and provide connections across key physical barriers such as railways; and,</li> <li>• Providing direct and continuous collector streets for transit accessibility and efficiency of service.</li> </ul>

<p><b>Sustainability Background Report</b></p> <p>Prepared by urbanEquation, 2019</p>	<p>The Background Report provides an overview of policies and recommendations for green development principles for the community that have been set forth through a review of existing provincial, regional, and municipal policy documents to inform the Sustainability Plan and Green Development Guidelines, including the Clarington’s Official Plan and the Priority Green Clarington Development Framework. The report has been prepared to ensure that the Wilmot Creek Neighbourhood Secondary Plan Area reflects the ambitions advanced in these documents.</p> <p>The report is structured to provide the necessary background information to assist with the preparation of sustainability policies for inclusion in the Secondary Plan and the necessary steps for moving towards the preparation of the Sustainable Development Guidelines.</p> <p>The Priority Green Clarington (PGC) framework and One Planet Living (OPL) was used to establish recommended Secondary Plan policies. The PGC and OPL criteria have been translated into recommended Secondary Plan policies, with attention given to synergies between the criteria and across each of the four theme areas. These policies will be refined alongside the creation and evolution of the preferred development concept.</p> <p><b>Next Step:</b> This Background Report will inform the preparation of the Sustainability Guidelines that will be appended to the Secondary Plan. For each sustainability priority, the Sustainability Guidelines will outline both ‘Mandatory’ and ‘Voluntary’ performance measures.</p>
<p><b>Urban Design Analysis</b></p> <p>Prepared by The Planning Partnership.</p>	<p>The Urban Design Analysis examined the existing urban design conditions and opportunities. The first component of the study, Existing Conditions, reviewed existing conditions within the Study Area and in the surrounding areas. The review included existing and proposed development surrounding the Study Area, connectivity such as roads and active transportation, views and vistas, destinations, and community infrastructure.</p> <p>Based on the review of existing conditions, Official Plan policy directions, and the Priority Green Checklist criteria, the urban design intent for the Wilmot Creek Neighbourhood Secondary Plan and development options should consider the following:</p> <ul style="list-style-type: none"> <li>• A high quality, well-designed <b>Built Environment</b> is valued within the Municipality.</li> </ul>

	<ul style="list-style-type: none"> <li>• The <b>Natural Heritage System</b>, made up of Environmental Protection Areas, hedgerows, and stormwater ponds provide key organizing elements of the Plan, as well as a recognizable and ever-present way to orient oneself within the community.</li> <li>• A <b>High-Quality Public Realm</b>, consisting of a hierarchy of active and passive parks, along with a variety of streets, will enhance mobility, promote healthy and active lifestyles and contribute to the character of the community.</li> <li>• An <b>Accessible and Connected Active Transportation Network</b>, consisting of pedestrian and cycling routes, sidewalks and trails, will be important to promoting healthy, active lifestyles.</li> <li>• <b>Gateways and Landmarks</b> are important parts of the fabric of the neighbourhood and can be created using a combination of buildings, landscapes, open spaces, or public art.</li> <li>• A <b>Permeable Street and Block Pattern</b>, with a modified grid of streets and block lengths to create a more pedestrian-scaled environment and provide multiple points of access and routes of movement through the community.</li> <li>• A <b>Neighbourhood Centre</b> will create an animated focal point that will include a combination of medium density housing forms, public space, mixed-use/live-work opportunities and potential community uses.</li> </ul> <p>Urban design must also take into consideration the challenges of the Study Area, such as the Hydro and CN Rail corridors, Highway 401, adjacent employment uses, access to the Study Area, and Rickard Creek and associated wetland setbacks. These create constraints to development and potential setbacks that will need to be addressed at the plan preparation stage and confirmed through the findings of the technical studies.</p> <p>Building on the urban design intent and an understanding of the existing conditions of the Study Area and the broader area of influence, a number of opportunities have been identified for consideration in the preparation of the development options for the Wilmot Creek Neighbourhood.</p>
<p><b>Landscape Analysis</b></p>	<p>The Landscape Analysis examined the existing context of the lands within the study area including the following:</p>



<p>Prepared by The Planning Partnership, 2019.</p>	<ul style="list-style-type: none"><li>• a description and assessment of the existing context of the lands within the study area;</li><li>• existing natural features; and</li><li>• the study area's topography and grading to comprehensively understand the slopes of the site and their orientational aspect.</li></ul> <p>As a result of this landscape analysis a series of recommendations have been established to guide the Secondary Plan policy and future work within the subject lands.</p> <p>The north-west corner of the site is presently home to a group of impressive mature Sugar Maple and Black Walnut trees. These trees are a stunning feature of the site that should be preserved.</p> <ul style="list-style-type: none"><li>• The riparian system for the Rickard Creek should be improved and the consultant recommends the existing vegetation be removed, the banks regraded, and appropriate, native plantings be reinstalled.</li><li>• To improve resilience, it is recommended that a planting strategy be established which increases species diversity and ensures that a higher proportion of locally native species are employed.</li><li>• Remove all invasive Buckthorn.</li><li>• Make use of existing vistas, both natural and anthropogenic, throughout the site for key community open spaces.</li><li>• Maintain landscape features that serve as interesting subjects for future views.</li><li>• Utilize existing Wilmot Creek Drive view corridor.</li><li>• Maintain or introduce view corridors to Lake Ontario.</li></ul>
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