
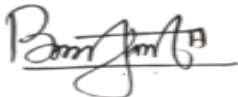




CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
Hamilton Water Division
and
PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT
Growth Management Division

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	February 20, 2024
SUBJECT/REPORT NO:	Detailed Drainage Assessment Study (Phase 2) of Rurally Serviced Existing Residential Neighbourhoods in Ancaster (PW16100(a)/PED24032) (Ward 12)
WARD(S) AFFECTED:	Ward 12
PREPARED BY:	Hanna Daniels (905) 546-2424 Ext. 3421
SUBMITTED BY:	Mark Bainbridge Director, Water and Wastewater Planning and Capital Public Works Department
SIGNATURE:	
SUBMITTED BY:	Binu Korah Director, Development Engineering Planning and Economic Development Department
SIGNATURE:	

RECOMMENDATION

- (a) That the Detailed Drainage Assessment Study (Phase 2) of Rurally Serviced Existing Residential Neighbourhoods (Community of Ancaster, City of Hamilton), attached as Appendix “A” to Report PW16100(a)/PED24032 and the Associated Study Drawings attached as Appendix “B” and “C” to Report PW16100(a)/PED24032 be received.

- (b) That Planning and Economic Development staff consider the Detailed Drainage Assessment Study (Phase 2) results as part of a future Phase 3 study; to develop technical criteria, a policy framework, and implementation strategy for future lot severances in coordination with the Public Works Department and the Legal and Risk Management Services staff, and that the Phase 3 study be presented at a future Planning Committee.

- (c) That approvals continue to be deferred for lot severances in all rural cross section drainage neighbourhoods in Ancaster until the Phase 3 study is complete, and implementation measures are in place to mitigate the impacts of lot redevelopment.
- (d) That the Public Works Department be directed to complete the studies required to undertake culvert improvements recommended in the Detailed Drainage Assessment Study (Phase 2) of Rurally Serviced Existing Residential Neighbourhoods (Community of Ancaster, City of Hamilton), to address the current level of service.
- (e) That the Detailed Drainage Assessment Study (Phase 2) of Rurally Serviced Existing Residential Neighbourhoods (Community of Ancaster, City of Hamilton) be referred to the Planning & Economic Development Department to address Item 22R on the Outstanding Business List which directs staff to prepare the appropriate Public Meeting notice under the *Planning Act* and associated report for Planning Committee to consider the following at a future statutory public meeting:

“Amendments to the Existing Residential “ER” Zone in the Town of Ancaster Zoning By-law No. 87-57 to implement the uses permitted in Urban Hamilton Official Plan Amendment No. 167.”

EXECUTIVE SUMMARY

On September 16, 2013, a motion was made at the Public Works Committee (Report 13-011, Item #9), directing staff to determine if future requests for lot severances in the developed communities of Old Ancaster without storm sewers should be permitted due to potential downstream flooding, and report back. This work was completed as a Phase 1 Pilot Study for a portion of Ancaster and brought to the Public Works Committee in 2016.

At the Public Works Committee meeting on November 14, 2016 (PW16100) the following recommendations were approved:

- a) That Staff be directed to undertake a Detailed Drainage Assessment Study (Phase 2) of all the existing residential neighbourhoods in Ancaster with rural drainage servicing to determine the threshold capacity and breakpoint of the existing drainage networks; and,
- b) Due to the high-level theoretical nature of the Phase 1 Pilot Study Assessment combined with limited geographic scope of the study area, approval of lot severances in all rural cross section drainage neighbourhoods in Ancaster should

SUBJECT: Detailed Drainage Assessment Study (Phase 2) of Rurally Serviced Existing Residential Neighbourhoods in Ancaster (PW16100(a))/PED24032 (Ward 12) – Page 3 of 13

continue to be deferred until a Detailed Drainage Assessment Study (Phase 2) is completed.

The Detailed Drainage Assessment Study (Phase 2) found that under a projected buildout scenario to the currently permissible limits of development (35 percent of the available lot area for houses in addition to the associated increase in driveways, walkways, etc.), the overall estimated impervious lot coverage increases from approximately 41 percent to 57 percent. This represents an additional 51 hectares of impervious area within the study limits. The hydrologic and hydraulic analyses illustrate that the increase in impervious area results in an increase in peak flows, decreased level of service for the municipal drainage system (ditches), increased erosion potential, and an altered water budget.

While it is not necessarily expected that all dwellings will be constructed to their maximum allowable footprint, recently redeveloped lots are showing the maximum increase in scale and impervious coverage relative to the original lot coverage. As such, it was determined that a stormwater management strategy is necessary to mitigate the impacts of increased impervious area. For the Phase 2 Study and detailed drawings see Appendix “A” and “B” to Report PW16100(a)/PED24032.

A long list of mitigation strategies was evaluated and are outlined in detail in Appendix “A” to Report PW16100(a)/PED24032. Private source controls, including low impact development features constructed on private property was considered to be the preferred alternative to mitigate the impacts of lot redevelopment; however, current legislation enacted through Bill 23 significantly limits the ability of the City of Hamilton (City) to require these controls through the development process for developments with less than 10 units.

An assessment of public infrastructure was also completed which identified five locations where culvert upsizing or twinning would be beneficial to conveyance and level of service. This assessment assumes the implementation of source controls to mitigate increases in stormwater due to increased impervious area. Two additional locations were identified where mitigation measures would be beneficial in addressing drainage system deficiencies through private property where the City holds easements.

While the Phase 1 Pilot Study and the Detailed Drainage Assessment Study (Phase 2) are focused on the rurally serviced areas of Ancaster, the findings and recommendations could be applicable to lot severance and lot redevelopment throughout the City.

Phase 3 Study - Implementation Strategy:

SUBJECT: Detailed Drainage Assessment Study (Phase 2) of Rurally Serviced Existing Residential Neighbourhoods in Ancaster (PW16100(a))/PED24032 (Ward 12) – Page 4 of 13

The City does not have an existing framework encompassing the requirement, enforcement, inspection, or monitoring of private lot level source controls outside of the Site Plan process and subsequent to recent provincial *Planning Act* changes (Bill 23), the Site Plan process is no longer applicable to residential development of fewer than 10 units. However, the City is able to apply conditions of approval for *Planning Act* applications for Consents to sever land. To address this, a future Phase 3 study to be led by the Planning and Economic Development Department will define the criteria for the design of private lot level source controls for lot severances, examine case studies, and review the potential to establish regulatory mechanisms for their implementation, enforcement, inspection, and monitoring.

Phase 3 of the Drainage Study will also consider elements of both the Green Building Standards; the Green Infrastructure Standards and Guidelines expected to be brought forward to Planning Committee in the first half of 2024; and the Planning Division's work being done on initial implementation measures for new lot coverage requirements as part of the City's comprehensive Residential Zones update.

Staff recommend that severance applications continue to be deferred in the rurally serviced areas of Ancaster as shown on Appendix "C" to Report PW16100(a)/PED24032 until the Phase 3 study has been completed and the technical criteria and policy framework to support private lot level source controls is in place for future lot severances. Legal Services can provide in camera analysis of any impacts of this recommendation in the event of appeals to the Ontario Land Tribunal.

Alternatives for Consideration – See Page 11

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: Undertaking a future Phase 3 study will focus on building the framework necessary to successfully implement changes supporting private stormwater controls for new development. This work, valued at approximately \$150,000, will be funded from Capital Project ID - 5181780090 - 2017 Annual Storm Water Management.

Staffing: N/A

Legal: The continuation of the deferral of land severances in the rurally serviced areas of Ancaster as shown in Appendix "C" to Report PW16100(a)/PED24032 until the Phase 3 study is complete may result in appeals to the Ontario Land Tribunal by both applicants who have had their applications tabled since 2018 and future applications. Legal Services can provide further commentary on these appeals in camera.

HISTORICAL BACKGROUND

Ancaster Drainage Assessment (Phase 1 & 2):

Phase 1 of the Ancaster Drainage Assessment was a pilot study premised on development trends in high value, desirable neighbourhoods across Hamilton, where lot severances and development were resulting in an increase in impervious lot coverage and adversely impacting the municipal drainage system. While this is not exclusive to rurally or semi urbanized neighbourhoods, impacts are especially notable in areas serviced by roadside ditches for the collection and transmission of stormwater runoff. Lands within these areas have seen building coverage shift toward the maximum 35 percent allowable by planning policy which only accounts for the portion of land occupied by the buildings and primary accessories/structures and does not include other impervious areas such as driveways, walkways, patios, etc; which have also significantly increased. The addition of impervious coverage increases rainfall runoff volumes and flow rates to the municipal drainage system, increasing flood risk, erosion, and contaminant transport potential to receiving natural systems.

Phase 2 of the Ancaster Drainage Assessment consisted of an extension of the Phase 1 study limits to include all the existing residential neighbourhoods in the mature neighbourhoods of Ancaster serviced by ditches. The objective was to assess the potential impacts of lot level redevelopment/intensification on the level of service provided by the municipal drainage system and develop a mitigation strategy. From the study perspective, intensification represents any redevelopment of a property which increases the coverage of structures and accessories (e.g., driveways, patios, walkways, etc), reducing the amount of pervious surface that absorb stormwater on a lot.

Ancaster Existing Residential Zone Pilot Project - Planning Initiative:

Through a separate initiative in 2018, by way of City Initiative 18-A (PED18036(a)), a series of changes to the planning regulations of the Existing Residential Zone were introduced as a pilot project. The pilot project was implemented to promote more compatible integration of new development within mature neighbourhoods in response to community concerns about the scale and massing of new development.

At the same time, staff were directed to include amendments to the Site Plan Control By-law to incorporate the properties zoned Existing Residential in the Town of Ancaster Zoning By-law No. 87-57 to address:

- Grading;
- Elevational changes of a property as it relates to grading; and

- Tree preservation

The primary intent of Site Plan Control in the Ancaster Existing Residential Zone was to review the grading impacts of new dwellings or additions to existing dwellings that substantially increased the building footprint on a lot.

As of February 2023, due to changes to Section 41 of the *Planning Act* resulting from the Provincial Bill 23, *More Homes Built Faster Act, 2022*, Site Plan Control no longer applies to single detached, duplex, and semi-detached dwellings, including dwellings located on properties zoned Existing Residential in Ancaster.

Official Plan Review and Changes to Permissions in Low Density Residential Zones:

On June 8th, 2022, Council approved amendments to the Urban Hamilton Official Plan and Rural Hamilton Official Plan reflecting provincial land use policy changes and the implementation of Council's direction on how the City should grow over the next 30 years. To implement the amendments to the Urban Hamilton Official Plan, Zoning By-law No. 05-200, the Zoning By-laws of the former Communities were amended to create additional housing opportunities within neighbourhoods across the City. This small-scale intensification refers to increasing the number of dwelling units permitted on a lot, from one dwelling unit in a single detached dwelling to up to four dwelling units on a lot (e.g., triplex or a fourplex) with a Detached Additional Dwelling Unit. This type of intensification increases the population density on a lot and may or may not increase the impervious lot coverage.

These changes were approved by Council in August 2022 and in effect as of November 4, 2022, with the Province's approval of Official Plan Amendment No. 167 with modifications, save and except for properties located within Ancaster's Existing Residential Zone. As per Planning Committee Report 22-012, Item 7(v) and (vi), properties zoned Existing Residential Zone in Ancaster were not included in the amendment pending completion of Phase 2 of the Detailed Drainage Assessment Study. Planning staff are required to report back to Planning Committee on the merits of incorporating the Existing Residential lands into the updated zones based on the results of the Detailed Drainage Assessment Study (Phase 2) attached as Appendix "A" to Report PW16100(a)/PED24032.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

Successful implementation of private lot level source controls will require a future legal mechanism in place to ensure their long-term functionality, operation, and maintenance. In conjunction with the Phase 3 study, a review of current policy may need to consider potential tools to mitigate the neighbourhood impacts of increased runoff resulting from

SUBJECT: Detailed Drainage Assessment Study (Phase 2) of Rurally Serviced Existing Residential Neighbourhoods in Ancaster (PW16100(a))/PED24032 (Ward 12) – Page 7 of 13

residential redevelopment through the implementation of private source controls. This may include registration on Title and revisions to City policies, development guidelines, and by-laws, including but not limited to the City's:

- Zoning By-laws
- Sewer Use By-law
- Comprehensive Development Guidelines and Financial Policies Manual

RELEVANT CONSULTATION

Numerous Phase 2 Study workshops and review meetings were held between 2018 and 2022 with the Hamilton Conservation Authority, and with staff across the Planning, Growth Management and Hamilton Water Divisions. The objectives of the consultations were to provide status updates, obtain feedback on approach and study direction, identify concerns and constraints, and review the Study findings. The outcome of the consultations recognizes that the next steps for implementation requires an additional study to be completed by Planning and Economic Development with involvement from Hamilton Water, and in consultation with Legal and Risk Management Services.

The Ward Councillor has been consulted to discuss the nature of this report.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

The Phase 2 Study included development of baseline data with respect to runoff characteristics, erosion potential, and water budget to reflect existing conditions. Under a projected build out scenario to the currently permissible limits of development (35 percent of the available lot area for houses in addition to the associated increase in driveways, walkways, etc.) the estimated impervious lot coverage increases from approximately 41 percent to 57 percent; representing an additional 51 hectares of impervious area within the study limits. The hydrologic and hydraulic analyses illustrate that the increase in impervious area results in an increase in peak flows, decreased level of service for the municipal drainage system (ditches), increased erosion potential, and an altered water budget. While it is not necessarily expected that all dwellings will be constructed to their maximum allowable footprint, recently redeveloped lots are showing the maximum increase in scale and impervious coverage relative to the original lot coverage. As such, it was determined that a stormwater management strategy is necessary to mitigate the impacts of increased impervious area.

The Phase 2 Study identified a long list of alternatives for the mitigation of impacts associated with lot redevelopment to the current permissible limits as follows:

SUBJECT: Detailed Drainage Assessment Study (Phase 2) of Rurally Serviced Existing Residential Neighbourhoods in Ancaster (PW16100(a))/PED24032 (Ward 12) – Page 8 of 13

Alternative	Response
1. Do Nothing	<ul style="list-style-type: none"> ▪ Does not address the impacts of the increased lot imperviousness.
2. Increase the size and capacity of ditch conveyance systems	<ul style="list-style-type: none"> ▪ Does not control or restrict increased flows. ▪ Water quality, flooding and erosion impacts would continue to be expected downstream.
3. Increase the size and capacity of storm sewer/municipal culverts	<ul style="list-style-type: none"> ▪ While this alternative may be appropriate in select locations to address existing conveyance deficiencies, it does not allow for control or restriction of increased flows. ▪ Water quality, flooding and erosion impacts would continue to be expected downstream.
4. Flow diversion and new conveyance routes	<ul style="list-style-type: none"> ▪ This alternative does not allow for control or restriction of increased flows and would re-direct flows to different receiving systems. ▪ Water quality, flooding, and erosion impacts would continue to be expected downstream.
5. Roadway Re-profiling	<ul style="list-style-type: none"> ▪ While this alternative may be appropriate in select locations to address existing conveyance deficiencies, it does not allow for control or restriction of increased flows. ▪ Limited application due to developed nature of the study area (to meet existing driveway grades). ▪ Water quality, flooding, and erosion impacts would continue to be expected downstream.
6. Retrofit of existing end-of-pipe stormwater management facilities	<ul style="list-style-type: none"> ▪ There is only one existing stormwater management facility within the study area.
7. Implement new end-of-pipe stormwater management facilities	<ul style="list-style-type: none"> ▪ Does not address the impacts on conveyance systems. ▪ There are few potential locations for new end-of-pipe stormwater management facilities.

SUBJECT: Detailed Drainage Assessment Study (Phase 2) of Rurally Serviced Existing Residential Neighbourhoods in Ancaster (PW16100(a))/PED24032 (Ward 12) – Page 9 of 13

<p>8. Private source controls, including low impact development features constructed on private property</p>	<ul style="list-style-type: none"> ▪ This includes low impact development best management practices such as bio retention, rainwater harvesting, soakaway pits, and other means of filtration and infiltration. ▪ Source controls would be capable of reducing peak flows at the source, mitigating impacts on flood risk, erosion potential, water budget, and water quality.
<p>9. Public source controls, including low impact development features constructed within the right-of-way</p>	<ul style="list-style-type: none"> ▪ This includes low impact development best management practices such as bio retention, rainwater harvesting, soakaway pits, and other means of filtration and infiltration. ▪ Source controls would be capable of reducing peak flows at the source, mitigating impacts on flood risk, erosion potential, water budget, and water quality.

Alternatives 1 through 7 do not mitigate the impacts associated with increased impervious area and stormwater runoff and were therefore not carried forward for further consideration.

Public source controls (Alternative 9) present a number of challenges:

- Necessitates that the controls be implemented in advance of the development.
- Impedes the City’s ability to utilize the municipal right-of-way by consuming the limited right-of-way width intended for other public assets
- Potential for infrastructure conflicts with sporadic property redevelopment, developers requiring right-of-way width for works to support a development, roadway reconstruction limitations, etc.
- Fewer low impact development measures would be applicable within a road allowance
- Results in the City being responsible to provide stormwater controls to mitigate the impacts of private development, which is contrary to standard development practice

Private source controls (Alternative 8) allow for:

- Stormwater controls can be constructed in tandem with the property redevelopment
- Provides flexibility in siting of controls throughout the property and the types of controls that may be implemented
- No dependence on downstream infrastructure or receiving system capacity

- Assurance that the developer/property owner is responsible for managing the impacts of development rather than the Municipality, in line with the standard development practice

Based on the findings and evaluation of alternatives, Alternative 8 private source control (lot level) was identified as the preferred alternative to mitigate the impacts of lot redevelopment. Provincial legislation introduced through Bill 23 limits the ability of the City to impose requirements for private on-site controls as municipalities are no longer able to apply Site Plan Control to developments of less than 10 units. Therefore, currently this alternative would only be applicable to development applications governed by the *Planning Act*, including Consent to sever land applications and Site Plan Control applications for developments with greater than 10 units. As these controls will be located within private property, the City may require policy and by-law modifications as described in the Policy Implications and Legislated Requirement section of this report to ensure long-term functionality, and that ongoing operations and maintenance activities are completed by the owner.

Conveyance Improvements:

In addition to the recommended stormwater mitigation measures, an assessment of public infrastructure was completed which identified five locations where culvert upsizing or twinning would be beneficial to conveyance and level of service. This assessment assumes the implementation of source controls to mitigate increases in stormwater due to increased impervious area. Two additional locations were identified where mitigation measures would be beneficial in addressing drainage system deficiencies through private property.

Phase 3 Study - Implementation Strategy:

The City does not have an existing framework encompassing the requirement, enforcement, inspection, or monitoring of private lot level source controls outside of the Site Plan process and subsequent to recent provincial *Planning Act* changes (Bill 23), the Site Plan process is no longer applicable to residential development of fewer than 10 units. However, the City is able to apply conditions of approval for *Planning Act* applications for Consents to sever land. To address this, a future Phase 3 study to be led by the Planning and Economic Development Department will define the criteria for the design of private lot level source controls for lot severances, examine case studies, and review the potential to establish regulatory mechanisms for their implementation, enforcement, inspection, and monitoring.

SUBJECT: Detailed Drainage Assessment Study (Phase 2) of Rurally Serviced Existing Residential Neighbourhoods in Ancaster (PW16100(a))/PED24032 (Ward 12) – Page 11 of 13

Phase 3 of the Drainage Study will also consider elements of both the Green Building Standards and the Green Infrastructure Standards and Guidelines expected to be brought forward to Planning Committee in the first half of 2024. The Green Building Standards will be used to evaluate development applications through the lens of sustainability, energy and climate resilience across a range of impact categories and will be applicable to all forms of development, including Consents to sever. In coordination with the Green Infrastructure Standards and Guidelines which is focused on private side stormwater controls for new development under Site Plan Control the goal is to implement performance requirements related to enhanced stormwater and watershed management.

Both initiatives intend to minimize the impact of stormwater runoff and alleviate the strain that stormwater places on municipal infrastructure through a number of techniques, including but not limited, to private on-site controls. Finally, the Phase 3 study will also consider the implications of Planning Division's initiative to develop new lot coverage parameters as part of the comprehensive Residential Zones update.

Considerations for the implementation of on-site controls were compiled and are provided in the Detailed Drainage Assessment Study (Phase 2), attached as Appendix "A" to Report PW16100(a)/PED24032. It is expected that these considerations will support the development of the Phase 3 study scope.

Staff recommend that severance applications continue to be deferred in the rurally serviced areas of Ancaster as shown on Appendix "C" to Report PW16100(a)/PED24032 until the Phase 3 study is complete, and implementation measures are in place to mitigate the impacts of lot redevelopment that is approved through a lot severance. It is worth noting that as-of-right redevelopments in rurally serviced areas of Ancaster, those being demolished and rebuilt on existing lots, will continue as they are not subject to the severance or Site Plan Control application process. These redevelopments may be up to the currently permissible limits of 35 percent of the available lot area for houses in addition to the associated increase in driveways, walkways, etc.

ALTERNATIVES FOR CONSIDERATION

Alternative 1 – Do Not Undertake Phase 3 Study:

An alternative to consider is to lift the deferral of severance applications and permit redevelopments to occur without undertaking the Phase 3 study or developing an implementation strategy. The consequence of this would be an increase in stormwater runoff to the municipal storm systems (local ditches and downstream storm sewers)

increasing flood risk, erosion risk, and contaminant transport potential to receiving natural systems. Staff do not recommend this alternative.

Alternative 2 – Lift the Deferral of Severances, With Interim Conditions, While the Phase 3 Study is Underway:

Another alternative that Council could consider is lifting the deferral of severance applications on an interim basis and permit Existing Residential zone redevelopments to occur while the recommended mitigation strategy is being developed through the Phase 3 study. To address the risk to the municipal system, staff would apply enhanced conditions of approval for grading and lot drainage that restrict post development flows to predevelopment levels. Although this may result in increased stormwater runoff due to the increase in impervious areas within the lot, it is considered a manageable risk given the relatively low number of severance applications the City receives on an annual basis in the Existing Residential zone Ancaster neighbourhoods.

In order to mitigate the risk of potential flooding, erosion and contaminant transport within the municipal system, any severance application would be subject to the following criteria for both the severed and retained parcels on an interim basis:

- Compliance with Existing Residential zoning (staff will recommend denial of any variance requests that would affect space available on the property to address on-site drainage requirement, e.g. lot coverage, setbacks);
- Stormwater flows up to the 100-year peak flow managed within the site using Low Impact Development techniques;
- Submission of detailed engineering, grading and servicing drawings demonstrating:
 - no grading impacts to adjacent properties,
 - soil characteristics are conducive to infiltration and sizing of Low Impact Development techniques (e.g. infiltration galleries),
 - a suitable emergency overland flow route; and,
 - legal right to discharge the flow to the adjacent lands.
- A Notice to be registered on Title with the Consent Agreement notifying future Owners of any required on-site stormwater management features and the requirement that the Owner maintain such features in perpetuity.

It will be important that in this scenario that staff have direction from Council to file an appeal with the Ontario Land Tribunal for any Committee of Adjustment approval that does not impose conditions as described above that are recommended by staff.

Alternative 2 has less risk than Alternative 1; however, Staff do not recommend this alternative due to the complexities of implementing these interim controls which may

SUBJECT: Detailed Drainage Assessment Study (Phase 2) of Rurally Serviced Existing Residential Neighbourhoods in Ancaster (PW16100(a))/PED24032 (Ward 12) – Page 13 of 13

prove to be unenforceable. Legal Services can speak to any legal consequences of these alternatives in camera.

APPENDICES AND SCHEDULES ATTACHED

Appendix “A” to Report PW16100(a)/PED24032 - Detailed Drainage Assessment Study (Phase 2) of Rurally Serviced Existing Residential Neighbourhoods (Community of Ancaster, City of Hamilton)

Appendix “B” to Report PW16100(a)/PED24032 - Associated Study Drawings

Appendix “C” to Report PW16100(a)/PED24032 - Map of rurally serviced areas of Ancaster