From: Mark Flowers
Sent: August 11, 2022 11:55 AM
To: Regional Clerk <RegionalClerk@regionofwaterloo.ca>
Subject: Region of Waterloo Planning and Works Committee Agenda Item 6.1 - Proposed Amendment to the Regional Official Plan - Report No. PDL-CPL-22-24

Please find attached a written submission, on behalf of Schlegel Urban Developments Corp., regarding Agenda Item 6.1 for this afternoon's Planning and Works Committee meeting.

Kindly ensure that a copy of this submission is provided to all members of Regional Council.

Mark Flowers *

Davies Howe
LAND DEVELOPMENT ADVOCACY & LITIGATION

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August 11, 2022

By E-Mail to *regionalclerk@regionofwaterloo.ca*

Chair Tom Galloway and Members of the Planning and Works Committee
Regional Municipality of Waterloo
150 Frederick Street
Kitchener, Ontario
N2G 4J3

Attention: Regional Clerk

Dear Chair Galloway and Members of the Planning and Works Committee:

Re: Proposed Amendment to the Regional Official Plan – Implementation of the Results of the Municipal Comprehensive Review under the *Growth Plan for the Greater Golden Horseshoe*
Regional Staff Report No. PDL-CPL-22-24
Committee Meeting on August 11, 2022 – Agenda Item 6.1

We are counsel to Schlegel Urban Developments Corp. ("Schlegel").

Schlegel has property interests adjacent to the existing urban area in southwest Kitchener, including approximately 59 ha north of New Dundee Road and east of Fischer-Hallman Road, commonly referred to as "Bayer Lands", within the area known as the Southwest Kitchener Policy Area ("SKPA"), as well as approximately 58 ha located at 236 Gehl Place, between Bleams Road and Huron Road and west of Fischer-Hallman Road, commonly known as the "BSF2 Lands".

We and Schlegel's land use planning consultants, Malone Given Parsons Ltd. ("MGP"), have made a number of oral and written submissions to both the Region and the City of Kitchener regarding Schlegel's lands within the context of the current Regional Official Plan Review. We have also recently reviewed the report of the Region's Community Planning staff (Report No. PDL-CPL-22-24) (the "Staff Report"), which was made available to the public earlier this week, and recommends the adoption of an amendment to the Regional Official Plan ("ROP") as set out in Attachment A to the Staff Report (the "Draft ROPA").

MGP are separately making a comprehensive submission to the Planning and Works Committee in support of the inclusion of both the Bayer Lands (and other SKPA lands) and the BSF2 Lands within an expanded urban area in southwest Kitchener.

Meanwhile, the purpose of this submission is to provide comments regarding certain proposed policies in the Draft ROPA pertaining to the "Countryside Line" and future urban area expansions.

First Policy 1.6.4. of the Draft ROPA states, in part, that "[i]f required, any future expansions of the Urban Area and Township Urban Area boundaries must be within the Countryside Line", and further states that "[w]here the Countryside Line coincides with the Protected Countryside, the Countryside Line will be considered a permanent boundary".

With respect to the latter phrase, the obvious implication is that where the Countryside Line does not coincide with the Protected Countryside, the Countryside Line will not be considered a permanent boundary and, accordingly, may be adjusted to accommodate an Urban Area expansion.

Thus, it is contradictory to state, in the previous sentence, that "any future expansions of the Urban Area … boundaries must be within the Countryside Line", as it fails to recognize circumstances where the Countryside Line does not coincide with the Protected Countryside, with the BSF2 Lands being a prime example of this situation. Further, it is inappropriate to predetermine, through an Official Plan policy, where future urban area expansions may not occur, particularly where it is based on an arbitrary delineation that fails to consider the suitability of particular lands for future urban development.

In this regard, we note that Policy 2.2.8.3 of the *Growth Plan for the Greater Golden Horseshoe* (the "*Growth Plan*") confirms that, where the need for a settlement area boundary expansion has been justified in accordance with a proper land needs assessment, "the feasibility of the proposed expansion will be determined and the most appropriate location for the proposed expansion will be identified based on the comprehensive application of all of the policies in [the *Growth Plan*]", including a lengthy set of considerations – none of which refer or equate to the Region's "Countryside Line". Indeed, it may well be determined that lands currently outside of the Countryside Line represent the "most appropriate location for the proposed expansion" when one comprehensively applies all of the *Growth Plan* policies.

Moreover, in response to a pre-application consultation meeting requested by Schlegel earlier this year in relation to the BSF2 Lands, which had been made out of an abundance of caution, Regional Planning staff very recently advised that a "[proposal] to modify the Countryside Line is more appropriately considered through [a] Regional Official Plan Review/Municipal Comprehensive Review (MCR)". In other words, Regional staff now seem to acknowledge that the Countryside Line can be adjusted as part of an Official Plan Review / MCR exercise, including in instances where an Urban Area expansion is contemplated on lands presently outside of the Countryside Line.

For these reasons, we request that the Committee direct that the Draft ROPA be amended by removing the reference in proposed Policy 1.6.4 that "any future expansions of the Urban Area … boundaries must be within the Countryside Line". Similarly, proposed Policies 2.C.3.1, 2.C.3.3 and 2.C.3.4 in the Draft ROPA should be amended to delete all references to expansions to Urban Area boundaries only applying to lands located within the Countryside Line.

With respect to proposed Policy 2.C.3.4 of the draft ROPA, we also have concern with the reference to the potential for an expansion of an Urban Area boundary in advance of the next municipal comprehensive review, to a maximum of 40 hectares per area municipality, being limited to a "one-time" amendment to the Regional Official Plan. We presume that the general basis for this proposed Policy in the Draft ROPA is Policies 2.2.8.5 / 2.2.8.6 of the *Growth Plan*, which allow for settlement area boundary expansions to a maximum of 40 hectares to occur in advance of a municipal comprehensive review, subject to satisfying certain criteria. Notably, there is no reference in the *Growth Plan* to this being a "one-time" opportunity available to municipalities. On the contrary, in a letter to municipalities in the Greater Golden Horseshoe dated November 12, 2019, Steve Clark, Minister of Municipal Affairs and Housing, stated as follows:

> *…there is no limit to how often a municipality can undertake the settlement boundary expansions of up to 40-hectares that take place outside of the municipal comprehensive review. The up to 40-hectare expansion, which can either be municipally or privately initiated, supports our government's growth management objectives of allowing communities to develop in ways that expand housing and economic opportunities while maintaining protections for our environmentally sensitive areas, including the Greenbelt, cultural heritage assets, and key employment and agricultural lands. [emphasis added]*

In that same letter, Minister Clark confirmed that Policies 2.2.8.5 / 2.2.8.6, and others in the *Growth Plan*, were designed to support the Province's "increased housing supply objectives" and ensure that municipalities do not have to wait until the next municipal comprehensive review to implement planning changes, as the government "aims to get shovels in the ground quicker and to have development happen sooner". A copy of Minister Clark's letter is attached for ease of reference.

Accordingly, we also request that the reference to "a one-time amendment" be deleted from proposed Policy 2.C.3.4 of the Draft ROPA and be replaced simply with reference to "an amendment".

We thank the Committee for its consideration of this submission and we look forward to reviewing a further version of the Draft ROPA with the requested amendments incorporated.

Kindly ensure that we receive notice of any decision made by the Committee and/or Regional Council regarding this matter.

Yours truly,
DAVIES HOWE LLP

Mark R. Flowers
Professional Corporation

encl.

copy: Client
Don Given and Matthew Cory, Malone Given Parsons Ltd.

**Ministry of
Municipal Affairs
and Housing**

Office of the Minister

777 Bay Street, 17th Floor
Toronto ON M5G 2E5
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**Ministère des
Affaires municipales
et du Logement**

Bureau du ministre

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Ontario

November 12, 2019

Dear Head of Council:

Earlier this year, our government introduced *A Place to Grow: Growth Plan for the Greater Golden Horseshoe* as part of the **More Homes, More Choice: Ontario's Housing Supply Action Plan** to increase housing supply, create more jobs, attract business investments and better align our infrastructure. Today, I am writing to provide further clarity on two specific provisions in *A Place to Grow* as your municipality undertakes its work to meet conformity with the growth plan by July 1, 2022. This clarity is with respect to the government's position on the municipal comprehensive review process and the policy permitting settlement area boundary expansions of up to 40-hectares outside of the municipal comprehensive review.

As you will recall, *A Place to Grow* provides municipalities with greater flexibility in local planning decision-making. Notably, *A Place to Grow* helps ensure intensification and density targets better reflect growth rates, local realities and market conditions; allows municipalities to make changes to their settlement area boundaries more quickly and easily, while continuing to provide protection for employment and agricultural lands as well as natural areas; and provides policies that direct intensification around transit to increase the supply of housing and jobs near transit hubs.

To ensure that we continue to meet our commitment to build more homes faster, our government has taken the position that municipalities may choose to take a phased approach to their municipal comprehensive review through *multiple* official plan amendments. We recognize that one size does not fit all and that the current and potential changes in provincial and regional planning frameworks can make it challenging to do planning in a timely, efficient, and effective manner. As such, providing municipalities with the choice of phasing their municipal comprehensive review or achieving conformity as part of one single new official plan or plan amendment is responsive to the needs of local communities.

In addition to the flexibility provided in the approach to the municipal comprehensive review, our government has also taken the position that, so long as they meet applicable policies in *A Place to Grow*, there is no limit to how often a municipality can undertake the settlement boundary expansions of up to 40-hectares that take place outside of the municipal comprehensive review. The up to 40-hectare expansion, which

can either be municipally or privately initiated, supports our government's growth management objectives of allowing communities to develop in ways that expand housing and economic opportunities while maintaining protections for our environmentally sensitive areas, including the Greenbelt, cultural heritage assets, and key employment and agricultural lands.

While there are several other requirements in *A Place to Grow* that support our increased housing supply objectives, I wanted to bring clarity to these two specific planning provisions given their immediate impact on getting supply online faster. These policies, along with policies that allow for employment area conversions that facilitate the introduction of residential uses, provide opportunities for local decision makers to put forward plans that address housing supply goals in a timely manner. By ensuring that municipalities do not have to wait until the next municipal comprehensive review to implement planning changes, our government aims to get shovels in the ground quicker and to have development happen sooner.

It is anticipated that additional information on the implementation of *A Place to Grow* will be forthcoming. In the interim, if you have any questions and/or concerns, please feel free to contact Cordelia Clarke Julien, Assistant Deputy Minister, Ontario Growth Secretariat at cordelia.clarkejulien@ontario.ca. Thank you for your time.

Sincerely,

Steve Clark
Minister of Municipal Affairs and Housing

c: Stephen Hamilton
Senior Policy Advisor
Office of the Honourable Steve Clark
Ministry of Municipal Affairs and Housing

Cordelia Clarke Julien
Assistant Deputy Minister, Ontario Growth Secretariat
Ministry of Municipal Affairs and Housing

Marcia Wallace
Assistant Deputy Minister, Municipal Services Division
Ministry of Municipal Affairs and Housing

Matthew Cory
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August 11, 2022

MGP File: 22-3105

Council of the Region of Waterloo
The Regional Municipality of Waterloo

Attention: Ms. Julie Hale, Council/Committee Support Specialist
via email: regionalclerk@regionofwaterloo.ca

RE: Schlegel Urban Developments Corp. (Kitchener)
Engage Region of Waterloo – Updating the Regional Official Plan 2051
Feedback on the Draft Land Needs Assessment and Growth Options

To: Council of the Region of Waterloo

Malone Given Parsons Ltd. ("MGP") and IBI Group are the planning and land economic consultants for Schlegel Urban Developments Corp. ("Schlegel"), who own multiple properties in Southwest Kitchener. The Bayer Lands are located at northeast of New Dundee Road and Fischer-Hallman Road. The BSF2 Lands are municipally known as 236 Gehl Place and are located east of Trussler Road and north of Huron Road. Collectively, the Bayer and BSF2 Lands are herein referred to as the "Schlegel Lands".

This submission continues upon our prior submissions to the Region including a letter dated May 27, 2022, providing comments on the Region's April 2022 Land Needs Assessment ("LNA") Report, as contained in document 3979259 and report PDL-CPL-22-11, as well as participation and comments in the Regional open houses and public meetings relating to the Municipal Comprehensive Review ("MCR") regarding the Growth Management and the LNA. A full package of previous correspondence has been provided in Appendix 1.

This letter provides additional comments regarding the Region's draft Official Plan Amendment (August 2022) and provides a detailed response to the Region's Urban Expansion Area Evaluation Criteria, which comprehensively reviews the Schlegel Lands against the Region's and Province's criteria for settlement area boundary expansions. As anticipated in our prior submissions, based on this assessment there is a significant requirement for new Community Area to accommodate growth forecasted in the Region to 2051. We have determined that at the minimum target of 50% intensification, the Region would require at least another 944 hectares of Community Area to meet the growth forecast to 2051. With the proposed population assignment to the City of Kitchener, a significant proportion of this land (approximately 366 ha) is required in Kitchener. The Region must correct significant errors in its Land Needs Assessment prior to final adoption by Regional Council and final approval by the Minister of Municipal Affairs and Housing.

With regards to the Region's consideration of growth options, it is our opinion that the inclusion of the two areas in Southwest Kitchener, that include the Schlegel Lands, are appropriate locations for a settlement expansion as they can achieve the Region's criteria for settlement area boundary expansion and are consistent with the *Provincial Policy Statement, 2020* ("PPS") and conform to *A Place to Grow: Growth Plan for the Greater Golden Horseshoe* (the "Growth Plan"). The requested expansion areas are labelled as Area 1 and Area 2 on Appendix 2.

1.0 Summary of MGP Balanced Growth Scenario for Waterloo Region

As part of the MCR, the Region is required to assess the need for additional land to accommodate growth to the 2051 planning horizon of the Growth Plan. The *Provincial Land Needs Assessment Methodology for the Greater Golden Horseshoe (2020)* ("LNA Methodology") is to be used in conducting this assessment.

Attached as Appendix 3 to this letter is a summary of MGP's LNA undertaken for Waterloo Region on behalf of Schlegel. Based on this assessment, there is a significant requirement for new Community Area within the Region to accommodate growth forecasted in the Region to 2051. We have determined that at the minimum target of 50% intensification, the Region would require at least another 944 hectares of Community Area to meet the growth forecast to 2051.

It is our opinion that the Region should undertake an additional housing mix scenario to accommodate growth. The scenario currently being considered by Regional staff fails to provide an option with medium density housing as one of the prominent forms of housing in the growth mix to 2051.

In consultation with the Region during the EngageWR process (at the April 25, 2022 draft LNA overview session) we requested that additional scenarios be provided which emphasize medium density forms of housing (part of the "missing middle") as a primary housing form in the future. We provided our scenario to the Region on May 27, 2022 and met with the Region to present our detailed greenfield analysis and land needs assessment on June 3 and 10, 2022. Following which we made representation at the June 29, 2022 Planning and Works committee meeting and then at the July 27, 2022 statutory public meeting on the proposed Regional Official Plan Amendment and Land Needs Assessment. We have also provided this information to the City of Kitchener and delegated at Kitchener council meetings to consider this item.

In addition, as detailed in the previous submission (see Appendix 1), there are key policy considerations that we believe must be addressed in the Region's work prior to finalizing the Region's LNA.

A balanced growth scenario that is medium density focussed should be considered by staff and Council as part of the work for the Region's LNA. This scenario would, in our opinion:

- Meet or exceed the targets and fully conform to the Growth Plan, including the minimum greenfield and intensification targets;
- Primarily plan to house new residents in medium density forms of housing, which aids in meeting the market desire for grade-related, family-oriented housing, while

also realizing a significant move away from the historically high proportion of low density units and maintaining a shift to more apartments in the Region;
- Encourage growth in the Region for new families and retirees in more affordable housing they will prefer;
- Support high density growth and intensification by directing the vast majority of population growth into existing settlement areas and Strategic Growth Areas along higher-order transit routes, optimizing these areas for transit use and leveraging the significant investment in transit infrastructure;
- Maintain more than 74% of the Region for agriculture, rural and natural uses, and will achieve a balance of priorities including the protection of agricultural and rural lands while providing sufficient housing supply and supporting economic growth in the Region;
- Accommodate a 50% population increase with only a 3% increase in settlement areas through smart growth neighbourhoods with higher densities and a greater mix of residential housing types and other uses that meet market demand. The total area used for urban uses will increase by only 1% (from 25 to 26%) in the Region.

Medium density housing can achieve both intensification in Strategic Growth Areas and a variety of housing in new communities. Based on the current market information, it is this type of housing that provides opportunities for improved housing affordability, increased density, complete communities, and desirable housing mix and forms for residents. This is especially true for young families and retirees who want 2-3 bedrooms in their current neighbourhoods without moving into an apartment.

More affordable housing that is attractive to residents and provides primarily grade-related units is essential to the quality of life in the Region and its continued ability to attract new employers and businesses who wish to house their employees. The primary means of ensuring long-term affordable housing in the Region is to provide an abundant, or at least sufficient, supply of all housing types to meet market-based demand.

As noted in the Region's LNA prepared by Dillon/Watson, the demand analysis was not done on a unit-type basis, and instead blends the densities of multiple unit types. This does not comply with the Provincial LNA Methodology, which requires the need for each housing structure type to be assessed separately. In addition, our review of the greenfield supply analysis prepared by the Region has identified significant errors that result in the Region assuming there are 584ha of vacant Community Area land that does not exist as of 2021. This overestimation of supply will lead to a significant shortage of land in the Region unless corrected by ensuring a similar amount of land is added to the settlement area to meet growth needs to 2051.

In such a medium density focused scenario, the overall housing mix is more realistic from a market-based forecast. We have determined that using the 50% intensification scenario, the Region would require a minimum of 944 hectares of additional Community Area land to accommodate growth. In this scenario, very few apartments are required in new settlement expansion areas.

If the Region were to allocate land to the City of Kitchener based on the population projections, approximately 366 hectares of additional land in the City of Kitchener is

required to ensure the City and Region can meet the 2051 growth forecast. This would require consideration for the inclusion of all remaining lands outside of the Protected Countryside Area in the City of Kitchener, which include two areas in Southwest Kitchener that total approximately 240 hectares.

2.0 Response to Settlement Area Boundary Expansion Evaluation Criteria and Comment on the Draft Official Plan Amendment

As conveyed in our prior submissions to the Region, the Schlegel Lands and surrounding areas in Southwest Kitchener represent excellent opportunities in the Region to accommodate growth through the creation of innovative and complete communities, and to do so in a manner that can be serviced in a fiscally sustainable manner. In this regard, our team has reviewed the principles contained in the Regional staff report on the MCR. With respect to the settlement area boundary expansion requests, please find attached the following supporting materials:

- The proposed amendments to the Region of Waterloo Official Plan Mapping, which shows the revised land use designations for the requested expansion areas as "Urban Area" (Map 1) and "Designated Greenfield Area" (Map 2) (Appendix 2); and,
- Summary table of responses to each of the Region's Urban Area Boundary Expansion Evaluation Criteria. This table also incorporates the applicable policies derived from the PPS, the Growth Plan, and the Region of Waterloo Official Plan regarding settlement area boundary expansions (Appendix 4).

The assessment of the evaluation criteria shows that the requested expansions are appropriate and consistent with/conforms to the applicable policies for the following reasons:

- It is our opinion that 944 hectares of additional Community Area lands are needed to accommodate future residential development in Waterloo Region, which can be partly provided by the proposed expansion areas in the southwest portion of the City of Kitchener, which total approximately 240ha;
- The two areas for settlement expansion that include the Schlegel Lands represent logical areas for urban expansion as they have the following characteristics:
    - Due to the size, these two areas in Southwest Kitchener can be planned as complete communities to accommodate the forecasted growth. These areas will provide additional and diverse housing supply abutting existing settlement areas. Moreover, they can be comprehensively developed to provide for opportunities to address climate change goals, including promoting compact and energy-saving designs, denser developments, and transit-supportive and walkable communities to lower GHG emissions from buildings and transportation.
    - The lands are located adjacent to the Primary Settlement Area of Kitchener, and are strategically located to provide for the required Community Area land needs. Servicing infrastructure either exists or can be extended to the lands in a timely and efficient manner. With regard to the northern most expansion request (the BSF2 Lands), the lands represent the missing area in

nearby neighbourhoods and are required to extend servicing and a new collector road to connect to ongoing development.
- The proposed expansion lands, as well as any required infrastructure and services, will be planned in a financially and environmentally sustainable manner over their full life cycle through robust technical studies in accordance with Provincial, Regional, and local planning policies. The two areas in Southwest Kitchener benefit from the location or expansion of existing infrastructure.
- There are no specialty crop areas in the proposed expansion areas.
- The proposed expansions are located outside of the Protected Countryside Area.

In comparing the proposed expansion areas in Southwest Kitchener to the Region's proposed expansion locations, as evaluated through the Settlement Area Boundary Expansion Technical Brief, dated July 2022 (and Addendum dated August 2022), the proposed expansion areas in Southwest Kitchener have similar characteristics and, as such, also represent an optimal location for a boundary expansion. It should be noted that the Region only reviewed the Growth Plan criteria and did not review the PPS, Region of Waterloo OP or the Region's own urban area expansion criteria.

The two settlement areas which include the Schlegel Lands represent an opportunity to create complete communities and provide for an appropriate mix of housing and jobs. We believe these areas are a logical and optimal location to accommodate a portion of the required settlement area expansion needed to achieve the growth forecasted in the Region to 2051.

Expanding the settlement area to include the Schlegel Lands is essential to realizing a contiguous settlement structure that are bounded by arterial roads or the Protected Countryside areas in Kitchener.

Additional work has already been undertaken by the Schlegel consultant team to identify the existing conditions and demonstrate the feasibility of the inclusion of Schlegel Lands into the settlement area boundary, including:

- Preliminary Servicing Overview; and,
- Water Resource Management Plan

These preliminary studies, which are provided in Appendix 5, have informed the responses to the evaluation criteria contained in Appendix 4 attached. Further studies will be completed through a future development review process. Moreover, inclusion of these lands can conform to the policies of the Growth Plan and Waterloo Regional Official Plan, and the Region should update its supporting studies to the MCR to include and address these lands.

We trust that this background work and these responses to the settlement area expansion criteria are helpful to the Region in its preparation and consideration of growth scenarios and demonstrates both the feasibility and priority for inclusion of the two areas for settlement expansion in Southwest Kitchener into the Urban Area boundary.

3.0 Conclusion

For the reasons noted in this letter, it is our opinion that the Region of Waterloo should include an LNA scenario similar to that provided in Appendix 3, providing medium density housing as the primary housing form for growth from 2022-2051.

Moreover, the Region should update its study work to address all requirements of the Growth Plan and Regional Official Plan with regard to the two settlement expansion areas in Southwest Kitchener that are outside of the Protected Countryside area. These lands should be included to provide the City and Region with land required to meet the 2051 land needs. These lands stand out in the Region as among the best opportunities to provide new community growth in a compact and complete community that compliments and logically and efficiently extends the settlement pattern in the Region.

We appreciate the opportunity to meet with the Region and discuss this submission once you have had the chance to review this letter and the attached material. Furthermore, should the Region proceed with adoption of its Official Plan not having addressed the submissions we have made through the process, we request confirmation that we can continue to work with the Region through the Ministry of Municipal Affairs and Housing's consideration of approval of the proposed Amendment.

In this regard, Schlegel continues to study and plan for the development of its lands in cooperation with the City of Kitchener. Schlegel looks forward to close and frequent communication with Regional staff throughout the remainder of this process.

If you have any questions or wish to discuss this letter, please do not hesitate to contact the undersigned at any time.

Yours very truly,
Malone Given Parsons Ltd.

Matthew Cory, MCIP, RPP, PLE, PMP
Principal, Planner, Land Economist, Project Manager

cc. Schlegel Urban Developments Corp.
Brenna MacKinnon, Manager of Planning, Region of Waterloo
Rosa Bustamante, Director of Planning, City of Kitchener
Tim Donegani, Senior Planner, City of Kitchener

Attachments:

Appendix 1 *Previous Correspondence*
Appendix 2 *Proposed Mapping Amendments to the ROPA*
Appendix 3 *MGP's Balanced Growth Scenario LNA for the Region*
Appendix 4 *Summary of Responses to Settlement Boundary Expansion Criteria*

Matthew Cory
905 513 0170 x116
mcory@mgp.ca

May 27, 2022

MGP File: 22-3105

Brenna MacKinnon
Manager, Development Planning,
The Regional Municipality of Waterloo
Community Planning Division

via email: BMackinnon@regionofwaterloo.ca

RE: Schlegel Urban Developments Corp. (Kitchener)
Engage Region of Waterloo – Updating the Regional Official Plan 2051
Feedback on the Draft Land Needs Assessment and Growth Options

Dear Ms. MacKinnon,

Malone Given Parsons Ltd. ("MGP") and IBI Group are the planning and land economic consultants for Schlegel Urban Development Corp. ("Schlegel"), who own multiple properties in southwest Kitchener. The purpose of this letter is to provide comments on the Region's April 2022 Land Needs Assessment Report, as contained in document 3979259 and report PDL-CPL-22-11.

As further explained in this letter, we believe that the Region of Waterloo's Land Needs Assessment ("Region's LNA") will demonstrate the need for additional land to meet the growth forecast when completed in conformity with the Province's *A Place to Grow: Growth Plan for the Greater Golden Horseshoe* ("Growth Plan"). As input into the Region's Municipal Comprehensive Review exercise ("MCR"), we are providing our analysis and background technical work:

- Appendix A summarizes MGP's Land Needs Assessment ("MGP's LNA"), which was undertaken on behalf of Schlegel to estimate land needs throughout the Region.
- Appendix B provides the Designated Greenfield Area supply analysis prepared by MGP, which provides a total supply analysis and potential for the entirety of the Region.

Lastly, while we have reviewed the Region's other background reports and documents, including the Intensification Forecast, we are concerned with some of the specific conclusions and details in these reports as they interrelate with the Region's LNA. Depending on the Region's preferred growth concept, we reserve the right to comment on these and other policies later and will provide more specific comments on the proposed policies of the Draft Official Plan when they can be read and considered as a whole.

1.0 The Need for Predominantly Medium Density Housing in Waterloo's Housing Growth Mix.

As part of the MCR, the Region is required to assess the need for additional land to accommodate growth to the 2051 planning horizon of the Growth Plan. The Provincial Land Needs Assessment Methodology for the Greater Golden Horseshoe (2020) ("LNA Methodology") is to be used in conducting this assessment.

Attached as Appendix A to this letter is a summary of MGP's LNA undertaken for Waterloo Region on behalf of Schlegel. Based on this assessment, there is a significant requirement for new Community Area within the Region to accommodate growth forecasted in the Region to 2051. We estimate that at the minimum target of 50% intensification, the Region would require at least another 944 hectares of Community Area to meet the growth forecast to 2051.

It is our opinion that the Region should undertake additional housing mix scenarios to accommodate growth. The three scenarios currently being considered by Regional staff all fail to provide an option with medium density housing as one of the prominent forms of housing in the growth mix to 2051.

In consultation with the Region during the EngageWR (at the April 25, 2022 draft LNA overview session) we requested that additional scenarios be provided which emphasize medium density forms of housing (part of the missing middle) as a primary housing form in the future.

Medium density focussed scenarios should be considered by staff and Council as part of the work for the Region's LNA. These scenarios would, in our opinion:

- Meet or exceed the targets and fully conform to the Growth Plan, including the minimum greenfield and intensification targets;
- Primarily plan to house residents in medium density forms of housing, which aids in meeting the market desire for grade-related, family-oriented housing, while also realizing a significant move away from the historically high proportion of low-density units and maintaining a shift to more apartments in the Region;
- Encourage growth in the Region for new families and retirees in more affordable housing they will prefer;
- Support high density growth and intensification by directing the vast majority of population growth into existing settlement areas and Strategic Growth Areas along higher-order transit routes, optimizing these areas for transit use and leveraging the significant investment in transit infrastructure;
- Maintain more than 74% of the Region for agriculture, rural and natural uses, and will achieve a balance of priorities including the protection of agricultural and rural lands while providing sufficient housing supply and supporting economic growth in the Region.
- Accommodate a 50% population increase with only a 3% increase in settlement areas through smart growth neighbourhoods with higher densities and a greater mix of residential housing types and other uses that meet market demand. The total area used for urban uses will increase by only 1% (from 25 to 26%) in the Region.

Medium density housing can achieve both intensification in Strategic Growth Areas and a variety of housing in new communities. Based on the current market information, it is this type of housing that provides opportunities for improved housing affordability, increased density, complete communities, and desirable housing mix and forms for residents. This is especially true for young families and retirees who want 2-3 bedrooms in their current neighbourhoods without moving into an apartment.

More affordable housing that is attractive to residents and provides primarily grade-related units is essential to the quality of life in the Region and its continued ability to attract new employers and businesses who wish to house their employees. The primary means of ensuring long-term affordable housing in the Region is to provide an abundant, or at least sufficient, supply of all housing types to meet market-based demand.

As a note on the Region's LNA prepared by Dillon/Watson, the demand analysis was not done on a unit-type basis, and instead blends the densities of multiple unit types and does not comply with the Provincial LNA Methodology, which requires the need for each housing structure type to be assessed.

In such a scenario, the overall housing mix is more realistic from a market-based forecast. We estimate that using the 50% intensification scenario, the Region would require a minimum of 944 hectares of Community Area to accommodate growth. In this scenario, very few apartments are required in new settlement expansions areas. Should the Region prefer to have a greater proportion of apartments in settlement expansion areas, it would be appropriate to plan for a 45% intensification rate to ensure a balance of housing in all policy areas.

Should the Region continue to allocate growth to the City of Kitchener to accommodate 2051 growth in a similar share assumed in 2006-2031 it would result in 45% of the Regional population growth in the Region being allocated to Kitchener from 2021-2051. On this basis, approximately 425 ha of additional land in the City of Kitchener lands not designated Protected Countryside is required to ensure the City and Region can meet the 2051 growth forecast.

2.0 Policy and Methodological Requirements

This section of the letter provides key considerations from policy that we believe must be addressed in the Region's work prior to finalizing the Region's LNA.

2.1.1 Growth Plan Policy 2.2.1.5 states that "The Minister will establish a methodology for assessing land needs to implement this Plan, including relevant assumptions and other direction as required. This methodology will be used by upper-and single-tier municipalities to assess the quantity of land required to accommodate forecasted growth to the horizon of this Plan."

The LNA Methodology is integral to the proper implementation of the Growth Plan and is not merely a guide. Upper- and Single-tier municipalities must use the LNA Methodology to determine land needs to 2051. The LNA Methodology includes assumptions and other directions for accommodating forecasted growth that upper- and single-tier municipalities should follow. Accordingly, municipalities that deviate from the LNA Methodology do not

conform to the Growth Plan. Under this framework, we have provided our assessment of land needs in accordance with the LNA Methodology as input into the Region's MCR. See Appendix A

2.1.2 Municipalities are required to determine the potential supply of units within the designated greenfield areas.

The LNA Methodology prescribes a method for estimating this supply, as follows:

"Upper- and single-tier municipalities must also determine housing unit potential by type within the designated greenfield area. Inventories should identify lands that are:

- *subject to development applications or approvals;*
- *vacant, designated and available to receive development applications; and,*
- *vacant, not designated and available to receive development applications.*

For lands subject to development approvals, this requires the inventory of proposed units by type based on municipal development approvals tracking resources. For vacant, designated and available lands, this requires estimating the units by type premised on the density permissions of the official plan. For vacant, not designated and available lands, it is appropriate to assume a density similar to comparable areas as long as this results in an estimate of dwellings by type."

The Region must complete such an analysis prior to finalizing the Region's LNA work. MGP's supply analysis is included in Appendix B of this letter for the Region's consideration and use in completing this work.

2.1.3 The Community Land Needs portion of the LNA must be determined based on dwelling unit type estimates from the demand forecast, not by assuming a Greenfield Density.

Housing by type must be used to determine the need for new Community Area land to ensure a sufficient land supply for all dwelling types. The former LNA Methodology (2016) used a blended greenfield density approach (e.g., assuming a general density such as 60 residents and jobs over the entire land area) to estimate land needs. The current LNA Methodology removed this approach as it obscured the certainty in providing for the housing required to meet the projected needs of current and future residents. The greenfield density is a target of the Growth Plan, and it functions as a minimum outcome related to the planned urban structure. It should not be used to determine an appropriate housing mix nor the amount of land needed to accommodate growth. Assessments that do not include the calculation of land by dwelling unit type do not conform with the Growth Plan.

MGP's LNA (attached as Appendix A) estimates the amount of new land required through Settlement Area Boundary Expansion to accommodate growth to 2051 by applying a gross density to each dwelling unit type category. The gross density assumption by dwelling type includes an allowance for population-related and major office employment. This gross density must account for all uses in the Community Area (including roads, public service facilities, and other uses). The dwelling types listed in the current LNA Methodology are as follows:

- Single/Semi-detached houses;

- Row Houses – including all forms of townhomes except for back-to-back townhouses;
- Apartments, which may be subdivided into:
  - Low-rise apartments - dwelling unit attached to other dwelling units including back-to-back townhouses, commercial units, or other non-residential space in a building that has less than five storeys;
  - High-rise apartments - dwelling unit in a building which has five or more storeys; and,
- Other dwellings - All others. (LNA Methodology, pg.10)

2.1.4 The Provincial Policy Statement (2020), Growth Plan (2020) and the associated LNA Methodology require municipalities to provide a market-based supply of housing to the extent possible.

Market-based demand is generally determined by considering regional-level historical trends of housing preference while estimating the needs and wants of existing and future residents. In contrast, policy-driven demand seeks to restrict the way residents are housed by aspiring to achieve higher densities (resulting in a higher proportion of rows and apartments) than would occur if left to market forces. The market-based demand for the Greater Golden Horseshoe unmodified by the Growth Plan targets is contained in the Hemson Background Technical Forecasts (August 2020) for the Growth Plan. It is important to note that conformity with the Growth Plan minimum intensification and greenfield density targets represents a significant policy-driven shift away from the housing mix the market would deliver.

In this regard, the LNA Methodology requires that settlement area expansion calculations be based on a market-based forecast. The market forecast is to be adjusted only to the extent necessary to meet the intensification and density targets in the Growth Plan (i.e., 50% and 50 residents and jobs per hectare). Municipalities should not seek to arbitrarily go beyond these targets when estimating land needs in order to provide a sufficient housing supply. The resulting land area and mix of housing would be more of a departure from the market forecast than is necessary. Planning for densities beyond the Growth Plan targets that do not increase the market-based supply of housing does not conform with the Growth Plan, the LNA Methodology, or the Provincial Policy Statement requirements for a market-based supply of housing.

The latest changes in Provincial policy occurred in 2020 with a revised Provincial Policy Statement (May 2020), Growth Plan (August 2020), and LNA Methodology (August 2020). One of the changes consistent throughout these documents is to require a market-based approach to housing that is projection-based and requires an adequate supply of housing to accommodate current and future needs. This change stands in contrast to preceding policy-led approaches that intentionally limited housing choices (irrespective of market demand for housing) to restrict the potential for new grade-related housing in favour of intensification in

existing areas around transit infrastructure. The market-based approach to housing provides a balanced approach that continues to encourage intensification (particularly transit-supportive development) and compact built form while ensuring people will have the homes they want and need.

In particular, the Provincial Policy Statement (PPS) policies 1.1.1 b), 1.1.3.8 a), 1.4.1, and 1.4.3 require planning authorities to provide for an appropriate range of market-based housing to meet current and projected needs. Moreover, the Region must undertake conformity work with the Growth Plan using the current LNA Methodology. The LNA Methodology requires that the Region accommodate sufficient land to the Growth Plan horizon (2051). It further provides direction when determining the need for additional land:

"Conformity with the intensification and designated greenfield area density targets is confirmed or adjustments are made to ensure conformity with the Plan. This may require adjusting the mix of housing types while ensuring the provision of a market-based supply of housing to the extent possible. For the purposes of alternative intensification and designated greenfield area density targets, the ability to provide a market-based supply of housing is an important consideration in determining whether a target can be achieved." (LNA Methodology, pg. 9.)

It is clear in a review of the current Provincial policy that the Region should seek to provide a market-based supply of housing to the extent possible. This approach must ensure that all housing types are provided to achieve a market-based demand forecast while meeting the minimum targets of the Growth Plan. Using a market-based supply of housing is good planning, provides realistic absorption rates, and is in the public interest, particularly as it reduces the potential of erroneously planning for housing that does not meet the needs or wants of residents and is therefore unrealistic. A market-based supply of housing reduces the risk that the municipality may have unrealized housing growth along with the associated financial shortfalls resulting from committing to development-related growth costs without the reciprocal growth-related revenue.

Accordingly, MGP's LNA was undertaken to achieve a market-based supply of housing, to the extent possible, by maintaining the potential for grade-related housing (particularly medium density housing) generally in keeping with the proportions forecasted in Hemson's background work to the Growth Plan.

2.1.5 The Region's LNA should adjust its supply assumptions to ensure that lands will develop within the forecast period to logical boundaries.

Sufficient land must be provided to achieve the forecasted growth; municipalities should adjust the land needs to ensure this occurs as anticipated by the LNA. Assessments that do not provide a sufficient supply of land for a market-based supply of housing that can be achieved within the Plan horizon do not conform to the Growth Plan. The LNA Methodology notes that minor upward adjustments to the land area required for settlement area boundary expansion should be made to ensure logical boundaries when final settlement area boundaries are determined. When undertaking the Region's LNA and proposing potential settlement area boundaries, the Region should make necessary adjustments to

provide a sufficient supply of achievable land using logical boundaries. As per the LNA Methodology, the Region can and should consider adjusting its assumptions on supply to account for the following:

"Final adjustments to land need may be made in order to account for:

- *Extremes of need because of unusually low or high vacancies at the time of analysis such as a vacancy adjustment related to maintaining a healthy rental vacancy rate over the planning horizon;*
- *Constrained land within the settlement area that requires additional infrastructure (e.g., servicing, transit, highways);*
- *Lands that may not develop within the horizon of the Plan due to other factors such as landowner choice to not develop for the purposes they are designated for;*
- *The length of the planning process to make lands ready for development; and,*
- *Other economic (e.g., provision for major businesses) and demographic (e.g., increases in immigration and emigration) considerations not anticipated in growth scenarios used in the initial municipal analysis." (LNA Methodology, pg. 13-14)*

While the MGP analysis, identifies the need for 944 hectares of expansion land to theoretically accommodate growth to 2051, additional land should be included as necessary, to take into account any necessary final adjustments as noted above.

3.0 Conclusion

For the reasons noted in this letter, we believe the Region of Waterloo should include an LNA scenario similar to that provided in Appendix A, providing medium density housing as the primary housing form for growth from 2022-2051.

We appreciate the opportunity to meet with you and discuss this submission once you have had the chance to review this letter and the attached material.

In conclusion, we thank you for the opportunity to provide input into the Region's MCR process. Schlegel continues to study and plan for the development of its lands in cooperation with the City of Kitchener. They anticipate providing additional input to the MCR (including technical analyses currently underway) and look forward to close and frequent communication with Regional staff throughout the remainder of this process.

If you have any questions or wish to discuss this letter, please do not hesitate to contact the undersigned at any time.

Yours very truly,
Malone Given Parsons Ltd.

Matthew Cory, MCIP, RPP, PLE, PMP

Principal, Planner, Land Economist, Project Manager

cc. Schlegel Urban Development

Rosa Bustamante, Director of Planning, City of Kitchener
Tim Donegani, Senior Planner, City of Kitchener

Attachments:

- Appendix A: MGP LNA
- Appendix B: MGP Greenfield Analysis

Appendix A

Date:	May 27, 2022
Project:	Schlegel – Waterloo Region Supply Analysis
MGP File:	22-3105
Subject:	**Waterloo Region Community Area Land Needs Assessment Methodology**

Appendix A outlines the Land Needs Assessment Methodology ("LNAM") used to determine the amount of Community Area land required within Waterloo Region to accommodate the forecasted growth to 2051, as specified in *A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2020* ("Growth Plan"). This analysis was performed by Malone Given Parsons Ltd. ("MGP"), in consultation with IBI Group, on behalf of Schlegel Urban Developments Corp.

There are six (6) main components involved in the process.

1) Population Forecast: Establish the total population growth based on the 2021 Census and 2051 population forecast in the Growth Plan.
2) Housing Need: Forecast total housing need by dwelling type to achieve the population forecast.
3) Housing Needs Allocation: Allocate the projected housing need by dwelling type among lower-tier municipalities, if applicable.
4) Housing Supply Potential by Policy Area: Allocate residential units by dwelling type to the three policy areas: Built-Up Area, Designated Greenfield Area ("DGA") and Rural Area.
5) Community Area Jobs: Determine the number of jobs estimated to be accommodated in the Community Areas to the 2051 horizon.
6) Need for Additional Land:
    - Calculate existing DGA unit supply.
    - Determine the amount of growth needed to be accommodated in the new DGA and calculate the Community Area land need requirement based on the unit mix.
    - Verify the density to ensure compliance with the density targets established by the Growth Plan.

1.0 Population Forecasts (Component 1)

Component 1 of the Land Needs Assessment Methodology for calculating Community Area requires a population forecast to 2051. Municipalities may use the forecasted numbers in Schedule 3 of the Growth Plan or an alternate growth scenario. In this analysis, the Schedule 3 2051 population forecast for Waterloo Region of 923,000 is used, with the 2021 Census population used as the base year. It is assumed that the net undercount from the 2016 Census is applied to 2021 and beyond since the 2021 net undercount is not yet available. The non-household population rates from the 2021 Census are also applied to 2021 and beyond. The forecasted total population growth from 2021 to 2051 is 322,012 and is used to estimate a unit forecast in Component 2.

Table 1: Waterloo Region Population Forecasts

	2021 Census[1]	2051 Forecast	Growth 2021-2051
Population	587,165	901,771	314,606
Household Population	579,830	890,506	310,676
Non-Household Population[2]	7,335	11,265	3,930
Net Undercount Rate[3]	2.30%	2.30%	
Total Population	**600,988**	**923,000**[4]	**322,012**

Sources:

[1]*Statistics Canada, 2021 Census Profile.*

[2]*Statistics Canada, 2021 Census Profile. Assumed a rate of 1.25% for non-household population.*

[3]*Statistics Canada, 2016 Census net undercount rate for the Kitchener-Cambridge-Waterloo CMA. Carried forward to 2051.*

[4]*A Place to Grow, 2020, Schedule 3, Distribution of Population and Employment for the Greater Golden Horseshoe to 2051.*

2.0 Housing Need (Component 2)

The population forecast is converted into a unit forecast by dwelling type as part of Component 2. Based on Hemson's technical report *Greater Golden Horseshoe: Growth Forecasts to 2051* dated August 2020, the 2051 unit forecast is 369,000 units with a growth of 146,575 units from 2021 to 2051. This is assumed to be a modified market-based demand forecast that is a basis for estimating unit need prior to accounting for changes to the household forecast required to achieve conformity with the Growth Plan. Table 2 summarizes the housing need by dwelling type. Dwelling types include the following categories: single/semi-detached houses, row houses and apartments.

Table 2: Hemson Forecasted Housing Need for Waterloo Region

	Singles/Semis	Rows	Apartments	Total
2021 Census[1]	132,430	25,630	64,365	222,425
2051 Forecast[2]	199,000	53,000	117,000	369,000
Unit Growth	66,570	27,370	52,635	146,575
Growth Mix (%)	45%	19%	36%	100%

Sources:

[1]*Statistics Canada, 2021 Census Profile.*

[2]*Hemson Technical Report, Greater Golden Horseshoe: Growth Forecasts to 2051, August 2020.*

The Growth Plan requires its minimum density and intensification targets to be achieved while providing for market-based housing demand and to accommodate the forecast population. To achieve these objectives, a revised unit mix is required that provides market-based demand for each housing type to the extent possible, while ensuring the minimum targets can be achieved. The revised housing mix is reflective of market demand while still achieving the Growth Plan objectives of a more compact built-form and reflects the constraints of directing growth within the Built-Up Area where there are limited opportunities for new family-oriented housing. Given this, the unit growth should be distributed to allocate higher density housing forms to the Built-Up Area while providing for lower density family-oriented housing to the DGA.

Table 3 translates the forecasted housing unit growth into a total projected population. Similar to Table 1 above, the net undercount and non-household population rates are carried forward to calculate the total population. This step generates the total forecasted population growth based on the Growth Plan (923,000 people) with the forecasted population growth resulting from the revised unit growth mix (322,012).

To continue to provide as much grade-related and more affordable family-oriented housing as possible, the component of growth related to row housing is increased. Providing most new housing through rows accommodates a similar housing preference to singles (grade-related housing) that can accommodate families. Rows also have the potential for achieving gentle intensification in both the Built-Up Area and higher densities in the DGA with a housing unit type that is relatively more affordable on a per square basis to families than single/semi-detached dwellings and apartments.

Table 3: Housing Need Adjusted to Achieve Population Target

	Singles/Semis	Rows	Apartments	Total
Revised 2051 Unit Forecast	164,000	83,500	107,000	354,500
Revised 2051 Unit Mix (%)	46%	24%	30%	100%
Revised Unit Growth	31,570	57,870	42,635	132,075
Revised Unit Growth Mix (%)	24%	44%	32%	100%
PPU[1]	3.17	2.37	1.73	
Household Population Growth	100,077	137,094	73,588	310,759
Non-Household Population Rate[2]	1.25%	1.25%	1.25%	1.25%
Non-Household Population	1,250	1,713	919	3,882
2021 Census Population	101,327	138,807	74,507	314,641
Net Undercount Rate[3]	2.30%	2.30%	2.30%	2.30%
Forecasted Population Growth	**103,712**	**142,074**	**76,261**	**322,048**

Sources:

[1]Region of Waterloo Development Charges Background Study, Watson & Associates, April 2019.

[2]Statistics Canada, 2021 Census Profile.

[3]Statistics Canada, 2016 Census net undercount rate for the Kitchener-Cambridge-Waterloo CMA. Carried forward to 2051.

3.0 Housing Need Allocation (Component 3)

Component 3 of the Community Area Land Needs Assessment Methodology involves allocating the projected housing need among the lower-tier municipalities (if applicable). Waterloo Region will consult with the lower-tier municipalities and the public when making such allocations.

4.0 Housing Supply Potential by Policy Areas (Component 4)

Component 4 determines the potential housing supply by policy areas. The policy areas include the Built-Up Area, Designated Greenfield Area, and Rural Area.

Tables 4 forecasts household growth by dwelling type. For reference, the following is the planning period used in this analysis:

- 2022 – 2051: this is the period from the last Census in 2021 to the completion of the Municipal

Comprehensive Review ("MCR") to 2051. During this period, the minimum intensification target for new development is 50% as required under the 2020 Growth Plan.

It is also assumed that a small portion (0.5%) of the growth will be accommodated in the Rural Area to reflect the limited growth potential in Rural Areas.

With the established intensification targets, along with an estimated number of units by dwelling type likely to be created within the Built-Up Area, the DGA units and Rural Area units are calculated. Table 4 distributes the revised unit growth, established as part of Component 2, among the policy areas. It generates a unit demand for the Built-Up Area, DGA and Rural Area. It is the DGA unit demand that is used in Component 6 to help calculate the new DGA Community Area land requirement.

Table 4: Distribution of Units by Policy Area

2022-2051	Singles/Semis	Rows	Apartments	Total
Built-Up Area Units (50%)	3,302	26,415	36,321	66,038
% Units	*5%*	*40%*	*55%*	*100%*
DGA Units (49.5%)	27,608	31,455	6,314	65,377
% Units	*42%*	*48%*	*10%*	*100%*
Rural Area Units (0.5%)	660	0	0	660
% Units	*100%*	*0%*	*0%*	*100%*
Total Distribution	**31,570**	**57,870**	**42,635**	**132,075**
Built-Up Area Unit Demand	**3,302**	**26,415**	**36,321**	**66,038**
DGA Unit Demand	**27,608**	**31,455**	**6,314**	**65,377**
DGA Unit Mix (%)	**42%**	**48%**	**10%**	**100%**

5.0 Community Area Jobs (Component 5)

While the purpose of Component 5 is to estimate the number of jobs estimated to be accommodated in the Community Areas, it does not have any impact on the land requirement. Community Area jobs are calculated as part of Component 6 when ensuring the density targets set out in the Growth Plan are met.

6.0 Need for Additional Community Area Land (Component 6)

Component 6 converts the housing need requirements, from Component 4, into the amount of additional Community Area land required to accommodate the 2051 population targets in the Growth Plan. This component includes the following steps:

- Calculate existing supply;
- Determine Community Area land requirement; and,
- Verify Growth Plan density.

6.1 Calculate Existing Supply

It is first necessary to calculate the existing supply of units within the existing DGA Community Area. This analysis was undertaken as part of MGP's Waterloo Region Designated Greenfield Area Density Analysis, which generates a breakdown of planned and vacant units. Full details of this analysis can be

found in Appendix B.

Planned units include all units estimated to be built beyond Spring 2021, those under construction, or included within development applications submitted to the municipalities that are either registered, draft approved or in progress. Table 5 is a summary of all planned units by lower-tier municipality.

Table 5: Waterloo Region Planned Designated Greenfield Area Unit Supply by Municipality

Municipality	Singles/Semis	Towns	Apartments	Total
Cambridge	2,007	2,745	2,134	6,885
Kitchener	3,938	6,172	2,666	12,775
North Dumfries	1,222	704	0	1,926
Waterloo	1,006	1,208	689	2,902
Wellesley	16	0	0	16
Wilmot	786	234	28	1,048
Woolwich	2,468	1,835	627	4,929
Total Waterloo Region	**11,442**	**12,896**	**6,142**	**30,480**

Vacant units are the potential units for all vacant residential land, as designated in the lower-tier Official Plan/Secondary Plans. The units are calculated based on the vacant land area available and the corresponding Official Plan policy permissions related to density and permitted residential dwelling types. A summary of vacant units is found in Table 6.

Table 6: Waterloo Region Vacant Designated Greenfield Area Unit Supply by Municipality

Municipality	Singles/Semis	Towns	Apartments	Total
Cambridge	1,655	1,919	0	3,574
Kitchener	2,689	4,996	0	7,685
North Dumfries	85	58	0	143
Waterloo	646	1,653	0	2,299
Wellesley	134	0	0	134
Wilmot	259	87	0	346
Woolwich	470	731	0	1,201
Total Waterloo Region	**5,938**	**9,444**	**0**	**15,381**

The totals for the planned and vacant units incorporate details related to any recommended Employment Area Conversions as per Waterloo Region's report *Regional Official Plan Review – Employment* dated April 2021. The units are either based on the units specified within the conversion request or they are estimated in the same manner as determining the units on vacant residential land, as mentioned above.

6.2 Determine Community Area Land Requirement

The planned and vacant units (including employment area conversion units) are combined for a total existing DGA supply. This existing supply is deducted from the forecasted housing need to generate the

new DGA unit requirement as shown in Table 7.

Table 7: New Designated Greenfield Area Unit Requirement

	Singles/Semis	Rows	Apartments	Total
Planned Units	11,442	12,896	6,142	30,480
Vacant Units	5,938	9,444	0	15,381
Total Existing DGA Supply	**17,379**	**22,340**	**6,142**	**45,861**
DGA Unit Demand	**27,608**	**31,455**	**6,314**	**65,377**
New DGA Unit Requirement	**10,228**	**9,115**	**172**	**19,516**
New DGA Unit Mix	**52%**	**47%**	**1%**	**100%**

Having established the new DGA unit requirement, the new Community Area land requirement is generated by applying a standard gross density (units/ha) to each dwelling type as shown in Table 8.

Table 8: Additional Land Requirement to 2051

	Singles/Semis	Rows	Apartments	Total
New DGA Unit Requirement	10,228	9,115	172	19,516
Gross Density (units/ha)	15	35	100	
Land Requirement (ha)	**682**	**260**	**2**	**944**

As a result, a minimum of 944 hectares of additional land in Waterloo Region is necessary to be designated as new Community Area through expansion of the settlement area boundary to meet the population forecast set forth in the Growth Plan.

While Waterloo Region has yet to determine the local allocation of growth, it is appropriate to examine historic growth allocations from the *Regional Official Plan 2031* dated June 2015. According to the Regional Official Plan, 84% of population growth and 87% of employment growth in the Region between 2006-2031 was allocated to the Tri-City municipalities of Kitchener, Cambridge, and Waterloo with potential to accommodate additional land in the following distributions:

- The City of Kitchener was allocated 45% of the Region's population growth and 34% of the Region's employment growth between 2006-2031.
- The City of Cambridge was allocated 22% of the Region's population growth and 28% of the Region's employment growth between 2006-2031.
- The City of Waterloo was allocated 17% of the Region's population growth and 26% of the Region's employment growth between 2011-2031.

6.3 Verify Growth Plan Density

Once the Community Area land need requirement is calculated, it is important to ensure that the DGA achieves the minimum density target of 50 residents and jobs per hectare set out in the Growth Plan. This is calculated by estimating the full population and employment of the DGA and dividing it by its gross developable area. To calculate the total residents and jobs, a population-related jobs rate of one

(1) job per six (6) people is applied along with the same PPUs and net undercount rate as used in Table 3 above.

Table 10: Density Analysis

	Land Area (ha)	People & Jobs	Density
Built DGA (as of 2021 Census)	1,638	76,998	47.0
Planned & Vacant DGA	2,170	137,805	63.5
Existing DGA Subtotal	3,808	214,803	56.4
New DGA Requirement	944	63,344	67.1
Total DGA	**4,752**	**278,147**	**58.5**

As demonstrated here, both the Region's existing DGA and new DGA requirement are planned to exceed the Growth Plan minimum density target of 50 residents and jobs per hectare.

Appendix B

Date:	May 27, 2022
Project:	Schlegel – Waterloo Region Supply Analysis
MGP File:	22-3105
Subject:	**Waterloo Region Designated Greenfield Area Density Analysis Methodology**

Appendix B outlines the methodology involved in the analysis performed by Malone Given Parsons Ltd., on behalf of Schlegel Urban Developments Corp., to calculate the density of the Community Area within Waterloo Region's Designated Greenfield Area ("DGA"). Through the Region's Municipal Comprehensive Review ("MCR") process, it is understood that a similar analysis has been completed by the Region with the goal of forming inputs to the Land Needs Assessment ("LNA") to project land requirements to meet the population targets outlined in *A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2020* ("Growth Plan").

There are four (4) main steps in the LNA process:

1. Calculate Community Area Developable Area.
2. Determine the Status of Community Area Land.
3. Determine the Unit Supply.
4. Calculate DGA Density.

Each step is outlined below.

1.0 Calculate Community Area Developable Area

Waterloo Region's lower-tier Official Plan/Secondary Plan land use schedules are digitized into ArcGIS to establish a base for the developable area calculations for the DGA. All areas within the Settlement Area Boundary and outside of the Built-Up Area are classified as DGA. Each designation is classified as either Community Area, Employment Area, or Non-Developable Area.

The developable Community Area includes all lands available for development for both public and private uses, including, residential, commercial, and institutional uses, parks, and infrastructure (i.e., local, and regional roads and stormwater management ponds). Non-developable area land includes all environmental features and natural heritage systems, major infrastructure, and infrastructure rights-of-way (i.e., existing 400-series highways, utility lines, and rail lines), and various existing uses (i.e., cemeteries and estate subdivisions). Employment Area land includes all land available for employment uses which are traditionally designated in Official Plans for business and economic activities.

This analysis focuses on the Community Area as it is this area that has potential to yield residents and population-related jobs. The developable Community Area excludes all Employment Area and all Non-Developable Area within the DGA as delineated on the relevant lower-tier Official Plan/Secondary Plan schedules.

2.0 Determine the Status of Community Area Land

To estimate the residential unit yield and potential population, it is first necessary to classify the Community Area land into the following categories:

1. **Built**: This includes all land that appears built as of Spring 2021 to align these units with the 2021 Census. The land is classified through an analysis of Google Earth and/or Regional/Municipal interactive satellite/aerial imagery and Google Street View images dated Spring of 2021, if available, and a review of Geowarehouse's property sales history, where appropriate.
2. **Planned**: This includes all land that was either built beyond the Spring of 2021 or has a development application submitted, draft approved, registered or under construction.
3. **Vacant**: This refers to all land remaining within the Community Area Land that is unbuilt and without any current development application submissions.

3.0 Determine the Unit Supply

Once the developable Community Area is calculated, the total unit supply by dwelling type for each lower-tier municipality is determined. A unit count is generated for the same three categories related to the land area; Built, Planned, and Vacant. Dwelling types include single-detached, semi-detached, townhouses, and apartments.

3.1 Built Units

To achieve an accurate picture of unit growth potential from 2022 to 2051, it is necessary to account for all existing units within the DGA built as of the 2021 Census. Built units as of Spring 2021 are estimated using a variety of sources. Available sources include, but are not limited to, satellite and aerial imagery from Google Earth and/or Regional/Municipal interactive mapping, parcel data, development subdivision status mapping (current and historical, if available), Staff reports, draft plans, and data available in Geowarehouse. All built units are inventoried with their source referenced. A unique map identifier by municipality matches the records in Attachment 2 to the lower-tier municipality maps in Attachment 4.

3.2 Planned Units

Planned units include all units built beyond Spring 2021, those under construction, and those included within development application submissions to the lower-tier municipalities that are either registered, draft approved, or submitted. The Planned unit supply is calculated using the same sources used to calculate the Built unit supply. Though in this case, the most current development application status mapping available from the lower-tier municipalities is used, if available, or the current development applications listed on the municipality's website are reviewed to determine if any of the applications are within the DGA. All development applications are compiled into a summary table in Attachment 2. As with the built units, a unique map identifier is given to each application to correlate it with the maps found in Attachment 4.

The following assumptions have been used in determining the unit supply for the Planned units within Waterloo Region.

1. Where draft plans provide a range of total units by type, rather than an exact number, the

average is calculated and added to the unit supply.
2. Where draft plans refer to “Multiple Residential” units, they are assumed to be townhouses.
3. Where draft plans refer to “Multiple Residential/Mixed Used” units, they are assumed to be apartments.

3.3 Vacant Units

It is necessary to generate a unit potential for all vacant residential lands, as designated in the lower-tier Official Plans/Secondary Plans. The land area of each residential designation is compiled along with the corresponding Official Plan policy permissions relating to density and permitted residential uses. Assumptions are made using our discretion and knowledge of the policies to split the residential land area between the policies permitted dwelling types. This land area is multiplied by the gross units per hectare for that specific dwelling type to generate an overall unit count.

The conversion from net density to gross density for residentially designated land assumes that non-residential uses would amount to 50% of the gross area. The non-residential uses include roads, SWMs, parks, institutional areas, and commercial areas. For Secondary Plans that have some of these uses already delineated, the calculation between net to gross density may vary. Table 1 demonstrates the percentage of land generally associated with each of the non-residential uses.

Table 1: Non-Residential Uses Assumptions

Non-Residential Uses	% of Non-Residential Land
Roads	28%
SWMs	7%
Commercial	3%
Schools	5%
Other Institutional	2%
Parks	5%
Total	**50%**

Table 2 converts the assumed net density into the gross density to be applied when calculating the vacant units.

Table 2: Net and Gross Residential Densities by Dwelling Type

Dwelling Type	Assumed Net Density	Calculated Gross Density
Single-Detached Dwellings	25	12.5
Semi-Detached Dwellings	30	15
Street Townhouses (Including On-Street and Laneway Townhouses)	40	20
Stacked / Back-to-Back Townhouses	90	45
Stacked Back-to-Back Townhouses	120	60
Low-Rise Apartments	100	50
Mid-Rise Apartments	200	100
High-Rise Apartments	300	150

Once the Vacant units are estimated by dwelling type, the net density is calculated to ensure it is within the Official Plan permissions range. Details are found in Attachment 3.

The final unit supply by dwelling type is tallied by the upper- and lower-tier municipality for each of the three categories; Built, Planned and Vacant. A summary of the results is found in Attachment 1. It is the Planned and Vacant unit supply that is used an input to the LNA.

4.0 Calculate Density of Designated Greenfield Areas

To calculate the DGA Community Area's density, estimates for population and population-related jobs are required.

4.1 Population

The population within the existing DGA as of 2021 is calculated based on a persons per unit ("PPU") assumption by dwelling type. The PPU assumptions, shown in Table 3, are in accordance with Waterloo Region's 2019 Development Charges Background Study. A 2.35% net undercount rate is applied to the population totals, based on the 2016 Census estimated net undercount rate for the Cambridge-Kitchener-Waterloo Census Metropolitan Area. The 2021 Census net undercount rate is not yet available.

Table 3: Persons per Unit Assumptions

	Singles/ Semis	Towns/ Multiples	Apartments
PPU	3.170	2.369	1.726

Source: Waterloo Development Charges Background Study, Watson & Associates, April 2019.

4.2 Population-Related Jobs

Population-related jobs within the exiting DGA as of 2021 are assumed to be 14% of the estimated population; a rate carried forward from the 2016 Census since the 2021 data has not yet been released.

Population-related jobs include the following jobs:

- Retail Trade (NAICS Code 44-45),
- Educational Services (NAICS Code 61),
- Arts, Entertainment and Recreation (NAICS Code 71), and,
- Worked at Home jobs.

4.3 Calculate DGA Density

To calculate the DGA density, the combined total of population and population-related jobs is divided by the total developable Community Area. Density is calculated by each lower-tier municipality and for Waterloo Region. Conducting the calculation in this way illustrates the potential for lower-tier municipalities to vary in density while still contributing overall to achieve an appropriate region-wide density.

Results of the density analysis are found in Attachment 1.

Attachments:

- Attachment 1: Waterloo Region's Designated Greenfield Area Density Analysis Summary Tables
- Attachment 2: Estimated Built and Planned Unit Supply
- Attachment 3: Estimated Vacant Land Unit Supply
- Attachment 4: Waterloo Region's Designated Greenfield Area Mapping

Waterloo Region Designated Greenfield Area Density Analysis

Built, Planned and Vacant Designated Greenfield Area Densities

Attachment 1

Density of Built Designated Greenfield Areas - as of 2021 Census

Municipality	Built DGA Developable Area	Community Area										Population-Related Employment	Total People & Jobs	Density (People & Jobs/ hectare)
		Unit Counts by Dwelling Type				Total Units	Population by Dwelling Type				Total Population			
	Hectares	Singles	Semis	Towns	Apartments		Singles	Semis	Towns	Apartments				
Cambridge	267.3	2,657	44	1,281	490	4,472	8,616	143	3,104	865	12,729	1,727	14,455	54.1
Kitchener	717.1	6,783	322	2,948	1,215	11,268	21,997	1,044	7,144	2,145	32,331	4,386	36,716	51.2
North Dumfries	28.7	287	38	92	-	417	931	123	223	-	1,277	173	1,450	50.6
Waterloo	279.1	2,255	110	558	286	3,209	7,313	357	1,352	505	9,527	1,292	10,819	38.8
Wellesley	37.1	335	72	-	-	407	1,086	233	-	-	1,320	179	1,499	40.4
Wilmot	124.8	1,195	52	67	-	1,314	3,875	169	162	-	4,206	571	4,777	38.3
Woolwich	184.3	1,651	72	340	-	2,063	5,354	233	824	-	6,412	870	7,281	39.5
TOTAL	**1638.4**	**15,163**	**710**	**5,286**	**1,991**	**23,150**	**49,172**	**2,302**	**12,811**	**3,516**	**67,801**	**9,197**	**76,998**	**47.0**

Density of Planned Designated Greenfield Areas

Municipality	Planned DGA Developable Area	Community Area										Population-Related Employment	Total People & Jobs	Density (People & Jobs/ hectare)
		Unit Counts by Dwelling Type				Total Units	Population by Dwelling Type				Total Population			
	Hectares	Singles	Semis	Towns	Apartments		Singles	Semis	Towns	Apartments				
Cambridge	239.6	1,987	20	2,745	2,134	6,885	6,444	65	6,651	3,767	16,927	2,296	19,223	80.2
Kitchener	565.6	3,872	66	6,172	2,666	12,775	12,555	214	14,957	4,706	32,432	4,399	36,831	65.1
North Dumfries	106.2	1,222	-	704	-	1,926	3,963	-	1,705	-	5,668	769	6,437	60.6
Waterloo	112.0	972	34	1,208	689	2,902	3,151	110	2,926	1,216	7,403	1,004	8,407	75.1
Wellesley	0.8	-	16	-	-	16	-	52	-	-	52	7	59	71.4
Wilmot	55.8	786	-	234	28	1,048	2,549	-	567	49	3,165	429	3,595	64.5
Woolwich	217.8	2,382	86	1,835	627	4,929	7,723	279	4,447	1,106	13,555	1,839	15,394	70.7
TOTAL	**1297.8**	**11,220**	**222**	**12,896**	**6,142**	**30,480**	**36,384**	**720**	**31,253**	**10,845**	**79,202**	**10,744**	**89,946**	**69.3**

Density of Vacant Designated Greenfield Areas

Municipality	Vacant DGA Developable Area	Community Area										Population-Related Employment	Total People & Jobs	Density (People & Jobs/ hectare)
		Unit Counts by Dwelling Type				Total Units	Population by Dwelling Type				Total Population			
	Hectares	Singles	Semis	Towns	Apartments		Singles	Semis	Towns	Apartments				
Cambridge	214.4	1,655	-	1,847	243	3,744	5,365	-	4,475	428	10,269	1,393	11,662	54.4
Kitchener	402.3	2,689	-	4,251	3,036	9,976	8,722	-	10,302	5,360	24,384	3,308	27,692	68.8
North Dumfries	9.7	85	-	58	-	143	275	-	141	-	415	56	472	48.7
Waterloo	121.5	646	-	1,490	395	2,531	2,094	-	3,612	697	6,403	869	7,272	59.8
Wellesley	10.7	134	-	-	-	134	434	-	-	-	434	59	493	46.0
Wilmot	25.0	259	-	87	-	346	840	-	210	-	1,050	142	1,192	47.6
Woolwich	88.3	470	-	708	38	1,216	1,525	-	1,717	66	3,309	449	3,757	42.6
TOTAL	**872.0**	**5,938**	**-**	**8,441**	**3,711**	**18,090**	**19,255**	**-**	**20,458**	**6,552**	**46,265**	**6,276**	**52,541**	**60.3**

Density of Planned and Vacant Greenfields

Municipality	Planned & Vacant DGA Developable Area	Community Area										Population-Related Employment	Total People & Jobs	Density (People & Jobs/ hectare)
		Unit Counts by Dwelling Type				Total Units	Population by Dwelling Type				Total Population			
	Hectares	Singles	Semis	Towns	Apartments		Singles	Semis	Towns	Apartments				
Cambridge	454.0	3,642	20	4,591	2,376	10,629	11,809	65	11,127	4,195	27,196	3,689	30,885	68.0
Kitchener	967.9	6,561	66	10,423	5,701	22,751	21,277	214	25,259	10,067	56,816	7,707	64,524	66.7
North Dumfries	115.9	1,307	-	762	-	2,068	4,238	-	1,846	-	6,083	825	6,908	59.6
Waterloo	233.5	1,617	34	2,698	1,083	5,433	5,245	110	6,538	1,913	13,807	1,873	15,680	67.2
Wellesley	11.5	134	16	-	-	150	434	52	-	-	486	66	552	47.9
Wilmot	80.8	1,045	-	321	28	1,394	3,389	-	777	49	4,215	572	4,787	59.2
Woolwich	306.1	2,852	86	2,543	664	6,145	9,248	279	6,164	1,173	16,864	2,288	19,151	62.6
TOTAL	**2169.7**	**17,157**	**222**	**21,337**	**9,853**	**48,569**	**55,640**	**720**	**51,711**	**17,397**	**125,467**	**17,020**	**142,487**	**65.7**

Total Designated Greenfield Area Density

Municipality	Total DGA Developable Area	Community Area										Population-Related Employment	Total People & Jobs	Density (People & Jobs/ hectare)
		Unit Counts by Dwelling Type				Total Units	Population by Dwelling Type				Total Population			
	Hectares	Singles	Semis	Towns	Apartments		Singles	Semis	Towns	Apartments				
Cambridge	721.3	6,299	64	5,872	2,866	15,101	20,425	208	14,231	5,061	39,925	5,416	45,341	62.9
Kitchener	1685.0	13,344	388	13,371	6,916	34,019	43,273	1,258	32,403	12,212	89,147	12,093	101,240	60.1
North Dumfries	144.6	1,594	38	854	-	2,485	5,168	123	2,069	-	7,360	998	8,359	57.8
Waterloo	512.6	3,872	144	3,256	1,369	8,642	12,558	467	7,891	2,418	23,333	3,165	26,499	51.7
Wellesley	48.7	469	88	-	-	557	1,521	285	-	-	1,806	245	2,051	42.1
Wilmot	205.6	2,240	52	388	28	2,708	7,264	169	939	49	8,421	1,142	9,564	46.5
Woolwich	490.4	4,503	158	2,883	664	8,208	14,602	512	6,988	1,173	23,275	3,157	26,433	53.9
TOTAL	**3808.2**	**32,320**	**932**	**26,623**	**11,844**	**71,719**	**104,812**	**3,022**	**64,521**	**20,912**	**193,268**	**26,217**	**219,485**	**57.6**

Notes

1. PPU based on Region of Waterloo Development Charges Background Study, Watson & Associates, April 2019
2. A 2.3% percent undercount was applied to the total population - based on 2016 Census Kitchener-Cambridge-Waterloo CMA
3. Population-related jobs (including worked at home) were calculated based on 2016 Census Data for Waterloo Region

For Discussion Purposes Only

Date: May 24, 2022

Prepared by:

MGP Malone Given Parsons.

Waterloo Region Designated Greenfield Area Density Analysis

Built and Planned Unit Supply

Attachment 2

Municipality	Map ID	Application #	Status as of May 2021	Singles	Semis	Towns	Apts	Total Units	Notes	Location	Source
Cambridge	1		Built			13		**13**			Google Earth, Parcels, Geowarehouse
Cambridge	2		Built	630		78		**708**			Google Earth, Parcels
Cambridge	3	455 Guelph Ave	Built			22		**22**			Cambridge Subdivision Activity Report, Dec 2018, Google Street View
Cambridge	4		Built			63		**63**			Google Earth, Parcels
Cambridge	5		Built	72				**72**			Google Earth, Parcels
Cambridge	6		Built			99	39	**138**			Google Earth, Parcels, Geowarehouse
Cambridge	7	350 Fisher Mills Rd	Planned			64	86	**150**	Coho Village Phase 2 & 3		Cambridge Subdivision Activity Report, Dec 2018
Cambridge	7	350 Fisher Mills Rd	Built			40		**40**	Coho Village Phase 1		Cambridge Subdivision Activity Report, Dec 2018. Coho Village Townhouse, Condos.ca
Cambridge	8	30T-16101	Planned			373	373	**745**	Unit count is a placeholder for Towns and Apts. Will range between 627 and 863 for towns/apts. Split 50-50.		Cambridge Subdivision Activity Report, Dec 2018
Cambridge	9a	58M-604	Planned	16		77		**93**	30T-12103		Waterloo Region Report: PDL-CPL-18-08
Cambridge	9b		Built	169				**169**			Google Earth, Geowarehouse
Cambridge	10	30T-12103	Planned	597		140	81	**818**	9 & 12 as part of 30T-12103. estimated 1662 units total		Cambridge Subdivision Activity Report, Dec 2018
Cambridge	11		Built	12				**12**			Google Earth, Parcels
Cambridge	12a	58M-617	Built	253		232	41	**526**	30T-12103		Cambridge Subdivision Activity Report, Dec 2018
Cambridge	12b		Planned			50		**50**			Google Earth, Geowarehouse
Cambridge	13	30T-12104	Planned	250		250	271	**771**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	14	58M-582	Built	304		270	190	**764**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	15	RP 1425 Block 131	Planned			23		**23**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	16		Built	35				**35**			Google Earth, Parcels
Cambridge	17		Built	151	44	123		**318**			Google Earth, Parcels
Cambridge	18		Built	13				**13**			Google Earth, Parcels
Cambridge	19	30T-16105	Planned	96				**96**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	20		Built	20				**20**			Google Earth, Parcels
Cambridge	21	30T-16103	Planned	239		239		**478**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	22	30T-16104	Planned	216		300	340	**856**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	23a	58M-603	Built	78				**78**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	23b	58M-609	Built			108		**108**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	23c	30T-13102	Planned	89				**89**			Geowarehouse
Cambridge	24		Built	199		4		**203**			Google Earth, Parcels
Cambridge	25		Built	26				**26**			Google Earth, Geowarehouse
Cambridge	26		Built					**-**	Non-residential		
Cambridge	27		Built	95		6		**101**			Google Earth, Parcels, Geowarehouse
Cambridge	28		Built	24				**24**			Google Earth, Geowarehouse
Cambridge	29		Built				136	**136**	Confirmed 68 Units for 180 Greenbrier Rd. Assumed same units count for 150 Greenbrier	150 and 180 Greenbrier Rd	Cambridge Rpeort # 17-039, April 2017
Cambridge	30	Formerly 30T-88039	Planned			85		**85**	165 Greenbrier Rd		Cambridge Subdivision Activity Report, Dec 2018
Cambridge	31							**-**	Vacant Site		
Cambridge	32		Built			8	48	**56**	16 units per building	10, 20 and 40 Cheese Factory Rd	Google Earth, Parcels, condos.ca

Cambridge	33		Built	55				**55**			Google Earth, Parcels
Cambridge	34		Built	73		57		**130**			Google Earth, Parcels
Cambridge	35		Built	86				**86**			Google Earth, Parcels
Cambridge	36		Built			47		**47**			Geowarehouse
Cambridge	37		Planned				367	**367**		0 Main St	Planning Justification Report, July 202
Cambridge	38	30T-20104	Planned			71	132	**203**			Draft Plan, August 2020
Cambridge	39		Built	65				**65**	approx 15 built post-2016		Google Earth, Parcels
Cambridge	40		Built			37		**37**			Geowarehouse
Cambridge	41		Built	234		74	36	**344**	Apts - 280 Wesley Blvd.		Google Earth, Parcels, Geowarehouse, Apt units as per Property Manager
Cambridge	42		Planned	32				**32**			Geowarehouse
Cambridge	43	30T-13101	Planned	123		80		**203**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	44	30T-13103	Planned	52		93	107	**252**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	45							**-**	vacant multiple residential site. Units calculated in "Vacant Land Units"		Cambridge Subdivision Activity Report, Dec 2018
Cambridge	46		Built	53				**53**			Google Earth, Parcel data
Cambridge	47	30T-07102	Planned	165		165		**330**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	48		Built	10				**10**			Google Earth, Parcel data
Cambridge	49	30T-14102	Planned	112	20	134	140	**406**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	50		Planned			9		**9**	only portion within DGA	825-875 Main St & 0 Sparrov Ave	Concept Site Plan, June 2017
Cambridge	51	Taylor Lands	Planned			592	237	**829**		Recommended Employment Conversion	Draft Plan Oct 2021
Subtotal Cambridge			**Built**	**2,657**	**44**	**1,281**	**490**	**4,472**			
			Planned	**1,987**	**20**	**2,745**	**2,134**	**6,885**			
Waterloo	1		Built	9				**9**			Google Earth, Parcel data
Waterloo	2		Built	26				**26**			Google Earth, Parcel data, Geowarehouse
Waterloo	3	30T-90039	Planned	11				**11**	draft plan & unit count unavailable. Estimated singles on 0.85 ha of land. (12 .5 units/gross ha)		N/A
Waterloo	4	30CDM-17410	Planned	24				**24**		675 Conservation Dr	Draft Plan, May 2020
Waterloo	5	30T-17402	Planned	9				**9**	7 to 11 units.	675 Conservation Dr	Draft Plan, May 2020
Waterloo	6	30CDM-17409	Planned	49				**49**			Draft Plan, Juley 2020
Waterloo	7	30T-17401	Planned	189		321	226	**735**	Singles 153- 224, multi res: 279 to 363, multi res/mixed use 131 to 320	Beaver Creek & Conservation Dr	Draft Plan, July 2020
Waterloo	8	30T-16402	Planned	236		294		**530**	192-279 Singles, 76 Street Towns, 163-273 multiple residential. Assumed multi res as towns	556-576 Conservation Dr	Draft Plan, June 2019
Waterloo	9	30T-17403	Planned	71		110	84	**265**	54-88 singles, 54 street towns,35 -76 multi-res, 48-120 multi res/mixed use (assumed as apts)	Roy Schmidt Rd and Conservation Dr	Draft Plan, June 2020
Waterloo	10		Built	146		10		**156**			Google Earth, Parcel data
Waterloo	11		Built	106				**106**			Google Earth, Parcel data
Waterloo	12							**-**	Green Acre RV Park - no units - assume redevelopment - calculated in Vacant tab		https://www.greenacrepark.com/
Waterloo	13		Built	42				**42**			Google Earth, Parcel data, Geowarehouse
Waterloo	14		Built	186	4	36		**226**			Google Earth, Parcel data
Waterloo	15		Built	21				**21**			Google Earth, Parcel data
Waterloo	16a		Built	13		13	89	**115**	Reflections at Laurelwood - apts	776 Laurelwood Dr	Google Earth, Parcel data, Geowarehouse, https://www.waterloocondominiums.ca/776-778-laurelwood-drive-reflections.php
Waterloo	16b		Built				89	**89**	Reflections at Laurelwood - apts	778 Laurelwood Dr	https://www.waterloocondominiums.ca/776-778-laurelwood-drive-reflections.php
Waterloo	17		Built		4			**4**			Google Earth, Parcel data

Waterloo	18		Built	25				**25**			Google Earth, Parcel data
Waterloo	19	58M-318	Planned			98		**98**	draft plan & Unit count unavailable. Estimated units on 2.8 ha of land. (Medium High Density). Assumed stacked towns @ 35 units/gross ha		N/A
Waterloo	20a		Built	68				**68**			Google Earth, Parcel data
Waterloo	20b		Built	708	46	76		**830**			Google Earth, Geowarehouse, Concept Plan for Multi-Res Blocks, April 2021
Waterloo	20c		Planned			64		**64**			Concept Plan for Multi-Res Blocks, April 2021
Waterloo	21	30T-97024	Planned	98				**98**	confirm units		Waterloo Region Planning & Works Committee Agenda, Report P-13-001, Jan 2013
Waterloo	22	30T-97024	Planned	90				**90**	450 Wilmot		Waterloo Region Planning & Works Committee Agenda, Report P-13-001, Jan 2013
Waterloo	23	30T-05403	Planned	58	34	16		**108**			Waterloo Region Planning & Works Committee Agenda, Report P-13-001, Jan 2013
Waterloo	24	30T-05402/30T-05403	Planned	85				**85**			Geowarehouse
Waterloo	25		Planned	34		104		**138**			Concept Plan for Multi-Res Blocks, April 2021
Waterloo	26		Built	154				**154**			Google Earth, Parcel data
Waterloo	27a		Built	82	32	69		**183**			Google Earth, Parcel data, Geowarehouse
Waterloo	27b		Built		20			**20**			Google Earth, Parcel data, Geowarehouse
Waterloo	28							**-**	non-res - no units		
Waterloo	29							**-**	non-res - no units		
Waterloo	30a		Built				100	**100**		7 Westhill Dr.	Waterloo Region Report: PDL-CPL-15-47
Waterloo	30b		Built					**-**	The Westhill Retirement Residence. Units not included		
Waterloo	31	30T-87004	Planned			52	283	**335**	12 West Hill Dr and 635 Erb St		Final Planning Justification Report, Oct 2018
Waterloo	32		Built	215				**215**			Google Earth, Parcel data
Waterloo	33							**-**			
Waterloo	34a	30T-05401	Built	138			8	**146**			Draft Plan, May 2010
Waterloo	34b		Built	2				**2**			Google Earth, Parcel data
Waterloo	34c		Planned			47		**47**			Google Street View
Waterloo	35a		Built	67		15		**82**			Google Earth, Parcel data, Geowarehouse
Waterloo	35b		Planned			15		**15**	estimated portion of towns		Google Earth, Geowarehouse
Waterloo	36		Built			39		**39**			Google Earth, Parcel data, Geowarehouse
Waterloo	37		Built			75		**75**			Geowarehouse
Waterloo	38a		Built	80		48		**128**			Google Earth, Parcel data, Geowarehouse
Waterloo	38b		Built	167	4	177		**348**			Google Earth, Parcel data, Geowarehouse
Waterloo	38c		Planned				96	**96**			https://www.talkcondo.com/waterloo/trailside-at-grey-silo-gate-condos/
Waterloo	39	30T-20401	Planned	19		87		**106**		28 Westhill Dr	City of Waterloo Staff Report, IPPW2021-034
Subtotal City of Waterloo			**Built**	**2,255**	**110**	**558**	**286**	**3,209**			
			Planned	**972**	**34**	**1,208**	**689**	**2,902**			
Kitchener	1		Built	79		9		**88**			Google Earth, Parcel data
Kitchener	2a		Built	26				**26**			Google Earth, Parcel data, Geowarehouse
Kitchener	2b		Planned	48				**48**			
Kitchener	3a		Built	72		15		**87**			Google Earth, Parcel data
Kitchener	3b		Built	103		14		**117**			Google Earth, Parcel data
Kitchener	4							**-**	non- res - no units		
Kitchener	5	30T-02206	Planned			514		**514**	Kolb Creek Subdivision. 514 multi-res Units.		Kitchener Growth Management Plan, Fall 2019-Fall 2021, Oct 2019
Kitchener	6	30T-91005	Planned	181	20	125		**326**			Staff Report CSD-16-013
Kitchener	7		Planned	5				**5**	part lots included in #6		Geowarehouse
Kitchener	8		Planned					**-**	Green space. Assumed no units		

Kitchener	9		Built				76	**76**		1505 Ottawa St N	StatsCan, Pcensus
Kitchener	10		Built	742	6	251		**999**			Google Earth, Parcel data, Geowarehouse
Kitchener	11a	58M-368?	Built	45				**45**			Google Earth, Parcel data, Geowarehouse
Kitchener	11b		Planned	14				**14**			Google Earth, Parcel data, Geowarehouse
Kitchener	12a		Built	225				**225**			Google Earth, Parcel data
Kitchener	12b		Built	79				**79**			Google Earth, Parcel data
Kitchener	13	30T-10202	Planned	92		75		**167**			Planning Justification Report, March 2020
Kitchener	14	58M-560 Ph1	Built	17				**17**			Google Earth, Planning Justification Report, March 2020
Kitchener		58M-560 Ph1	Built	3				**3**			Google Earth, Planning Justification Report, March 2020
Kitchener		58M-575 Ph2	Built			28		**28**			Google Earth, Planning Justification Report, March 2020
Kitchener		58M-575 Ph2	Built	75		132		**207**			Google Earth, Planning Justification Report, March 2020, Geowarehouse
Kitchener		58M-597 Ph3	Built	104		80		**184**			Planning Justification Report, March 2020, Geowarehouse
Kitchener		58M-597 Ph3	Planned	33				**33**			Planning Justification Report, March 2020, Geowarehouse
Kitchener		58M-597 Ph3	Planned			36	316	**352**	Block 14 Draft Approved for 162 multiple res units. Proposed development for 352 units (316 apts and 36 towns)		
Kitchener		58M-605 Ph4	Planned	91				**91**			Planning Justification Report, March 2020, Geowarehouse
Kitchener		58M-605 Ph4	Built	27				**27**			Planning Justification Report, March 2020, Geowarehouse
Kitchener	15		Built	3	42	64		**109**			Google Earth, Parcel data
Kitchener	16	30CDM-19204						**-**	School block built and future development plans. Classified as vacant to generate unit count		Staff Report DFD-19-188, Aug 2019
Kitchener	17		Built	511	50	70		**631**			Google Earth, Parcel data, Geowarehouse
Kitchener	18		Built	23				**23**			Geowarehouse
Kitchener	19/20	30T-88045	Planned	14				**14**	Pearl Valley Dev. Corp		Draft Plan, 1990
Kitchener	21		Built	50	6			**56**			Google Earth, Parcel data, Geowarehouse
Kitchener	22a		Built	150				**150**			Google Earth, Parcel data
Kitchener	22b		Planned	18				**18**			Geowarehouse
Kitchener	22c		Built	38				**38**			Geowarehouse
Kitchener	23							**-**	non-res no units		
Kitchener	24		Built	243	14	66		**323**			Google Earth, Parcel data
Kitchener	25		Built	21				**21**			Google Earth, Parcel data
Kitchener	26		Built	81		72		**153**			Google Earth, Parcel data
Kitchener	27							**-**	non-res no units		
Kitchener	28		Built	74		116		**190**			Google Earth, Parcel data, Geowarehouse
Kitchener	29a		Built				101	**101**		1460 Highland Rd	Kitchener Staff report, DSD-2021-157, Aug 2021
Kitchener	29b	30T-10218	Built				172	**172**	344 Luxury apartment rentals. Assumed equal units per building	Highland Square	Kitchener Staff report, DSD-2021-157, Aug 2021
Kitchener	29c		Planned				172	**172**		Highland Square	Kitchener Staff report, DSD-2021-157, Aug 2021
Kitchener	30	30T-08204	Planned	421		419		**840**	321 -521 singles, 405-432 multiple res units assumed as towns		Waterloo Region Committee of the Whole Addendum Agenda, April 2020
Kitchener	31	30T-07201	Planned	125				**125**			Waterloo Region Interim Residential Plan of Subdivision Inventory, 2008
Kitchener	32		Built			64		**64**			Geowarehouse
Kitchener	33		Built				203	**203**			Geowarehouse
Kitchener	34		Built	15				**15**			Google Earth, Parcel data
Kitchener	35a		Built	342	22	35		**399**	79 total Condo Towns		Google Earth, Parcel data, Geowarehouse
Kitchener	35b		Built			44		**44**			Google Earth, Parcel data, Geowarehouse
Kitchener	36	30T-18201	Planned	779		903	370	**2,051**	597 to 960 singles, 675 to 1130 towns/MD, 239 to 500 Mixed Use blocks. (MD assumed as towns, Mixed Use units assumed as apts)		Planning Justification Addendum Report, Dec 2019
Kitchener	37	30T-18202	Planned	190				**190**	145 to 235 singles.		Planning Justification Addendum Report, Dec 2019

Kitchener	38	30T-14201	Planned	210		348	197	**756**	105-165 singles/semis, 89-212 singles/semis/towns (split 50-50 singles/towns), 74 street towns, 106-292 multiples, 68-326 mixed use. (Multiples assumed as towns. Mixed use assumed as apts)	OMB File No: PL171484 OBM Case No: PL171483	LPAT Case No. PL 171483
Kitchener	39	30T-96005	Planned			131		**131**	unknown protion of units in DGA. 2.9 ha MD.		Estimated units based on OP permissions. Assumed Stacked Towns @ 70 units/net ha
Kitchener	40a	30CDM-15206	Built				46	**46**		175 Commonwealth St	Assumed same units as 155 Commonwealth St
Kitchener	40b		Planned				46	**46**		195 Commonwealth st	Assumed same units as 155 Commonwealth St
Kitchener	41	58M-307	Planned					**-**	Zoned C-2. Neighbourhood Commerical. No res units		
Kitchener	42		Built				46	**46**		155 Commonwealth St	Condos.ca
Kitchener	43		Built			24		**24**		231 Becker ST	Condos.ca
Kitchener	44		Built	56	56	8		**120**			Google Earth, Parcel data
Kitchener	45		Built	220	4			**224**			Google Earth, Parcel data
Kitchener	46	30T-08206	Planned	255	46	132		**433**			Staff Report CSD-14-051, June 2014
Kitchener	47	30T-09201	Planned	247		1,046		**1,293**			Staff Report CSD-14-05, June 2014
Kitchener	48	30T-89020						**-**	Future Staging. Assumed as vacant		Subdivision Development Map, January 2022
Kitchener	49a		Built	19				**19**			Google Earth, Parcel data
Kitchener	49b	Mattamy (Westmount) Ltd	Built	320		91		**411**			Google Earth, Parcel data
Kitchener	50a		Built	291		119		**410**			Google Earth, Parcel data, Geowarehouse
Kitchener	50b		Built	8		23	305	**336**			Google Earth, Parcel data, Geowarehouse
Kitchener	51a		Planned	9				**9**			Google Earth, Parcel data, Geowarehouse
Kitchener	51b		Built	49				**49**			Google Earth, Parcel data, Geowarehouse
Kitchener	52		Built	199		82		**281**			Google Earth, Parcel data
Kitchener	53a	30T-01201/58M-	Planned	39		170		**209**			Google Earth, Parcel data, Geowarehouse, Kitchener Interactive Map
Kitchener	53b		Built	12				**12**			Google Earth, Parcel data, Geowarehouse, Kitchener Interactive Map
Kitchener	54		Built	504	108	337	266	**1,215**			Google Earth, Parcel data, Geowarehouse
Kitchener	55	30T-07205	Planned	256		744		**1,000**	Singles/Semis/Towns 485-538 (Split 50-50 singles/towns), 476 to 500 towns and multiple res units	under construction	Kitchener Staff Report, DSD-18-021, May 2018
Kitchener	56	30T-16201	Planned	124		114	228	**466**			Planning Justification Report, Sept 2016
Kitchener	57a	30T-98201?	Planned	55		195		**250**			Google Earth, Geowarehouse
Kitchener	57b		Built	94		30		**124**			
Kitchener	58		Built	105		79		**184**			Google Earth, Parcel data
Kitchener	59		Built	162		97		**259**			Google Earth, Parcel data
Kitchener	60		Built			41		**41**			Geowarehouse
Kitchener	61		Built			56		**56**			Geowarehouse
Kitchener	62a		Built			36		**36**			Geowarehouse
Kitchener	62b		Built	50		93		**143**			Google Earth, Parcel data, Geowarehouse
Kitchener	63	58M-462	Planned					**-**	Proposed Commercial site - no units		Kitchener Report, DTS-09-007, Jan 2009. Design Brief within report
Kitchener	64		Built	17		24		**41**			Google Earth, Parcel data
Kitchener	65	30T-88006	Planned				200	**200**	east side vacant - Plan WITHDRAWN. 200 Apt units on west side as per MHBC.		Waterloo Region Interim Residential Plan of Subdivision Inventory, 2008
Kitchener	66	30T-87033						**-**	Plan WITHDRAWN - VACANT		Waterloo Region Interim Residential Plan of Subdivision Inventory, 2008
Kitchener	67	58M-571	Planned	12				**12**			Kitchener Report DTA-10-002, Feb 2010, Geowarehouse
Kitchener	68a	30T-18208	Planned	149		37		**186**			Google Earth, Parcel data, Geowarehouse
Kitchener	68b		Built	86		37		**123**			Google Earth, Parcel data, Geowarehouse

Kitchener	69		Built	98				**98**	30T-04204		Google Earth, Parcel data
Kitchener	70a	58M-630	Planned	16		43		**59**	plus 19-66 multiple res assumed as towns + 4-6 Res Units. (44-105 units total)	30T-12203	Kitchener Staff Report, CSD-16-040, May 2016, Geowarehouse
Kitchener	70b		Built	13				**13**			
Kitchener	71a	58M-627	Built			57		**57**		30T-12202	Geowarehouse
Kitchener	71b		Planned	5		24		**29**	includes part lot singles overlapping with #72		Geowarehouse
Kitchener	72		Built	138				**138**	30T-04204		Google Earth, Parcel data
Kitchener	73	30T-04204 Ph4 Block 1	Planned			42		**42**	30T-04204		Kitchener Report DTS-07-097, June 2007
Kitchener	74		Built	80		36		**116**	30T-04204		Google Earth, Parcel data
Kitchener	75		Built	135		190		**325**			Google Earth, Parcel data, Geowarehouse
Kitchener	76a	30T-08203	Planned			147		**147**	Stage 3 60-80 multi-res units.		Draft Plan, Aug 2017, Google Earth, Geowarehouse
Kitchener	75b	30T-08203	Built	120		42		**162**			Draft Plan, Aug 2017, Google Earth, Geowarehouse
Kitchener	77	30T-08203 Stage 4 to 10	Planned	340		822		**1,162**	289-391 residential. 822 multi-res	58M-672, 671, 670	Waterloo Region DSB Notice and Agenda, Feb 2020, Draft Plan, Aug 2017
Kitchener	78a		Built	62				**62**			Google Earth, Parcel data
Kitchener	78b		Built	84	12	40		**136**			Google Earth, Parcel data, Geowarehouse
Kitchener	78c		Planned	54		21		**75**			Geowarehouse
Kitchener	79		Built	98	2			**100**			Google Earth, Parcel data, Geowarehouse
Kitchener	80		Built			72		**72**			Google Earth, Parcel data
Kitchener	81		Built			6		**6**			Google Earth, Parcel data
Kitchener	82		Planned					**-**	Place of Worship - no units		Geowarehouse
Kitchener	83		Built			3		**3**			Google Earth, Parcel data
Kitchener	84a		Built	255				**255**			Google Earth, Parcel data
Kitchener	84b		Built	165				**165**			Google Earth, Parcel data, Geowarehouse
Kitchener	85		Built	38		83		**121**			Google Earth, Parcel data, Geowarehouse
Kitchener	86a		Built	49				**49**			Google Earth, Parcel data, Geowarehouse
Kitchener	87	30T-07202	Planned			46		**46**	33-58 multi-res units.		Draft Plan, Sept 2014
Kitchener	88	30T-87036	Under Construction					**-**	Highview Residences - Dementia Care. Units not included		
Kitchener	89	30T-13203 (Part Stage 1, Stage 3)	Planned	90		40		**130**			Staff Report CSD-15-050, May 2015, Geowarehouse
Kitchener	89		Built	93		40		**133**			Staff Report CSD-15-050, May 2015, Geowarehouse
Kitchener	90		Built			142		**142**		160 Rochefort St	Geowarehouse, Street View April 2021
Kitchener	91		Planned					**-**	commercial development - no units		
Kitchener	92		Planned				261	**261**		1673 Huron Rd	Planning Justification Report
Kitchener	93		Built	15				**15**	Large lots, no plans for redevelopment		Google Earth
Kitchener	94	Lackner Ridge Condos	Planned				358	**358**			https://www.gta-homes.com/kitchener-condos/lackner-ridge/
Kitchener	95		Planned				518	**518**	3 10-storey apt. buildings with 418 units. One 6-10 storey MU Building (office/retail and residential). Estimated 100 units.		Staff Report - Dec 2020
Subtotal Kitchener			**Built**	**6,783**	**322**	**2,948**	**1,215**	**11,268**			
			Planned	**3,872**	**66**	**6,172**	**2,666**	**12,775**			
Woolwich	1a	30T-07703	Planned	541		185		**726**	Northview Plan - Singles/semis combined	Elmira	Waterloo Region Interim Residential Plan of Subdivision Inventory, 2008
Woolwich	1b		Built	61		16		**77**	doesn't include assisted liviing units - 75 McGuire Lane		Geowarehouse
Woolwich	2a	30T-07702	Planned	265		86		**351**	Riverbend Plan - Singles/semis combined	Elmira	Waterloo Region Interim Residential Plan of Subdivision Inventory, 2008
Woolwich	2b		Built	185		64		**249**			Geowarehouse

Woolwich	3	30T-21702 - Activa Holdings	Planned	374		359		**733**	337 to 410 singles/325 to 393 towns.	Elmira	Draft Plan, March 2021
Woolwich	4		Built	165		23		**188**		Elmira	Google Earth, Parcel data
Woolwich	5		Built	60				**60**		Elmira	Google Earth, Parcel data
Woolwich	6		Built	2		8		**10**		Elmira	Google Earth, Parcel data
Woolwich	7a	30T-17701 - Birdland Developments	Planned	185	50	81	163	**479**	176-194 singles, 50 semis, 68-94 towns, 150-175 apts.	Elmira	Waterloo Region Report: PDL-CPL-18-08
Woolwich	7b		Built	84	24	33		**141**			Geowarehouse
Woolwich	8							**-**	non-residential. No units	Elmira	
Woolwich	9		Built	6	16			**22**		St. Jacob's	Google Earth, Parcel data
Woolwich	10	30T-12701	Planned	88	36	25		**149**	Old Scout Place	St. Jacob's	Waterloo Region Report: PDL-CPL-16-03
Woolwich	11a	30T-11701	Planned	310		122	464	**896**	383-484 singles, 124-164 towns/MD, 424-504 HD/Mixed Use. (excludes built units)	Breslau	Draft Plan, April 2016
Woolwich	11b		Built	124		22		**146**			
Woolwich	12		Built	433	32	37		**502**		Breslau	Google Earth, Parcel data, Geowarehouse
Woolwich	13	30T-89006	Planned	420		781		**1,201**	Singles 408 units plus 9 to 14, Street towns 117-175, multiple residential 370-900	Breslau	Draft Plan, Sept 2021
Woolwich	14		Built	228		29		**257**		Breslau	Google Earth, Parcel data
Woolwich	15		Built	186		65		**251**		Breslau	Google Earth, Parcel data
Woolwich	16a	30T-13701	Planned	200		41		**241**	Phase 2, 3 and 4 (excluding Block 53) 168-232 Singles, 31-51 Towns	Breslau	Draft Plan, Jan 2022
Woolwich	16b	30T-13701	Built	117		43		**160**	Phase 1 Built (107-148 Singles, 26-43 Towns)	Breslau	Google Earth, Draft Plan, Jan 2022
Woolwich	16c	30T-13701	Planned			155		**155**	Phase 3 - Block 53	Breslau	Draft Plan, Jan 2022
Subtotal Woolwich			**Built**	**1,651**	**72**	**340**	**-**	**2,063**			
			Planned	**2,382**	**86**	**1,835**	**627**	**4,929**			
Wellesley	1		Built	3				**3**		Wellesley	Google Earth, Parcel data
Wellesley	2		Built		44			**44**		Wellesley	Google Earth, Parcel data
Wellesley	3		Built	1				**1**		Wellesley	Google Earth, Parcel data
Wellesley	4		Built	156				**156**		Wellesley	Google Earth, Parcel data
Wellesley	5		Built	34				**34**		Wellesley	Google Earth, Geowarehouse, Google Street View
Wellesley	6		Planned		16			**16**		Wellesley	Google Earth, Geowarehouse
Wellesley	6		Built		2			**2**		Wellesley	Google Earth, Geowarehouse
Wellesley	7		Built	100	8			**108**		Wellesley	Google Earth, Parcel data, Geowarehouse
Wellesley	8		Built	41	18			**59**		Wellesley	Google Earth, Parcel data, Geowarehouse
Subtotal Wellesley			**Built**	**335**	**72**	**-**	**-**	**407**			
			Planned	**-**	**16**	**-**	**-**	**16**			
Wilmot	1		Built	423				**423**		Baden	Google Earth, Parcel data
Wilmot	2		Built	109		33		**142**		New Hamburg	Google Earth, Parcel data, Geowarehouse
Wilmot	3		Built	114				**114**		New Hamburg	Google Earth, Parcel data
Wilmot	4		Built	66	52			**118**		New Hamburg	Google Earth, Parcel data
Wilmot	5	Astor Crescent & Forrest Ave East	Planned				12	**12**		New Hamburg	https://developmentapplications.wilmot.ca/Home/Detail?Id=61c8ae80-bb13-4475-9b3c-298cead7f156
Wilmot	6		Built	74				**74**		New Hamburg	Google Earth, Parcel data
Wilmot	7		Built	63		34		**97**		New Hamburg	Google Earth, Geowarehouse
Wilmot	8	Stoencroft	Built	56				**56**		New Hamburg	Google Earth, Geowarehouse
Wilmot	9	Stoencroft	Built	231				**231**		New Hamburg	Google Earth, Parcel data

Wilmot	10	Stoencroft	Built	56				**56**		New Hamburg	Google Earth, Geowarehouse
Wilmot	11		Planned	363				**363**	326-399 total.	Baden	Draft Plan, March 2021
Wilmot	12		Planned			22		**22**		Baden	Planning Justification Report, Dec 2020
Wilmot	13		Planned				16	**16**	32 unit apt. Partially within DGA and BUA. Assume 50-50 split	Baden	Planning Justification Report, April 2021
Wilmot	14a		Built	1				**1**		New Hamburg	Google Earth, Parcel data
Wilmot	14b		Built	2				**2**		New Hamburg	Google Earth, Parcel data
Wilmot	15		Planned	424		212		**636**	316 to 531 residential/120-304 multiple residential	New Hamburg	Draft Plan, January 2022
Subtotal Wilmot			**Built**	**1,195**	**52**	**67**	**-**	**1,314**			
			Planned	**786**	**-**	**234**	**28**	**1,048**			
North Dumfries	1	SP-01/18	Planned			61		**61**		Ayr	Summary of Residential Development in Ayr, April 2021 https://www.northdumfries.ca/en/doing-business/resources/Documents/Residential-Dev-Tracking---April2021with-spreadsheet.pdf
North Dumfries	2	30T-06301	Planned	177		59		**236**		Ayr	
North Dumfries	3	30T-20301	Planned	109		65		**174**		Ayr	
North Dumfries	4	30T-05301	Built	224	38	52		**314**		Ayr	Google Earth, Parcel data, Geowarehouse
North Dumfries	4	30T-05301	Built	4		35		**39**		Ayr	Google Earth, Geowarehouse
North Dumfries	5	30T-11301	Built	59		5		**64**		Ayr	Summary of Residential Development in Ayr, April 2021 https://www.northdumfries.ca/en/doing-business/resources/Documents/Residential-Dev-Tracking---April2021with-spreadsheet.pdf
North Dumfries	6	30T-14301	Planned	87				**87**	0 units Built-Out as of April 21 report	Ayr	
North Dumfries	7	30T-14301	Planned	210		143		**353**		Ayr	
North Dumfries	8	30T-18301	Planned	294		183		**477**		Ayr	
North Dumfries	9a	30T-21301	Planned	124		6		**130**	114 to 134 Singles, 0 to 12 mutiple residential	West of Cambridge	Planning Opinion Report, April 2021
North Dumfries	9b	30T-21302	Planned	221		187		**408**	200 to 242 singles, 52 to 77 towns, 59 t o 185 towns/apts	West of Cambridge	Planning Opinion Report, April 2021
Subtotal North Dumfries			**Built**	**287**	**38**	**92**	**-**	**417**			
			Planned	**1,222**	**-**	**704**	**-**	**1,926**			
Total - Built 2021				**15,163**	**710**	**5,286**	**1,991**	**23,150**			
Total - Planned				**11,220**	**222**	**12,896**	**6,142**	**30,480**			

Assumptions:

1. Where there was a range in unit types on the draft plan, assumed the average units.
2. Used a combination of Google Earth Imagery, Google Streetview and Geowarehouse Sales History to estimate built (occupied) units as of May 2021.
3. Where unit counts were unavailable, estimated units based on assumptions for Vacant land.
4. Other Site specific assumptions recorded within "Notes"

For Discussion Purposes Only

Date: May 24, 2022

Prepared by:

MGP Malone Given Parsons.

Waterloo Region Designated Greenfield Area Density Analysis

Estimated Vacant Land Unit Supply

Attachment 3

Municipality	Official Plan/ Secondary Plan	Land Use Designation	Hectares	Unit Estimate						Net Density	Dwelling Type Assumptions	Policy Permissions		
				Singles	Semis	Towns	Stacked / B2B	Apts	Total Units			Permitted Residential Uses	Minimum Density	Maximum Density
Cambridge		Low/Medium Density Residential	**152.6**	1,240		824	549		**2,613**	**17**	singles, street towns, Stacked/B2B	Singles, Towns and/or walk-up apartments		40 units/gross ha
Cambridge		High Density Residential	**2.4**			29	44		**73**	**60**	mid-rise	apts and mixed use development	0.5 FSI	2.0 FSI
Cambridge		Future Urban Reserve (Portion assumed as Community Area)	**1.4**			27			**27**	**40**	street towns	only existing uses or those uses permitted in all desginations.		
Cambridge		Rural Residential	**8.5**	12					**12**	**3**	Estimated singles based on # of units on other side or road.	Singles		dependent on size of lot suitable to accommodate potable water and wasterwater treatment
Cambridge		ROPA 2 - Prime Agriculture	**49.6**	403		268	178	-	**849**	**34**	singles, street towns, Stacked/B2B (Same as Prime Ag/Rural Area in Kitchener)	ROPA 2 - Uses to be Determined		
Subtotal Cambridge			**214.4**	**1,655**	**0**	**1,148**	**771**	**0**	**3,574**					
Kitchener	Kitchener OP	Low Rise Residential	**115.2**	936		622	415		**1,974**	**34**	singles, street towns, Stacked/B2B	singles, semis, street towns cluster towns, low-rise multiple dwellings		30 units/net res ha
Kitchener		Mixed Use	**9.7**			35	359		**394**	**81**	Street towns, Stacked/B2B	MD and HD res uses (high density multiple dwellings)	MD: 30 units/net res ha HD: 100 units/net res ha	MD: 200 units/net res ha HD:
Kitchener		Prime Ag and Rural Area (DGA as per Waterloo Region OP)	**199.5**	1,621		1,077	718	-	**3,416**	**34**	singles, street towns, Stacked/B2B			
Kitchener	Rosenberg Community Secondary Plan Land Use Plan	High Density Residential	**0.2**			5			**5**	**40**	street towns	HD multiple dwelling units	100 units/net ha. Min 4 Storeys	400 units/net ha
Kitchener		Low Density Residential One	**3.6**	45					**45**	**25**	Singles - Max density 25 units/net ha	singles, duplexes, semis and street towns	10 units/net ha	25 units/net ha
Kitchener		Low Density Residential Two	**6.2**	68			104	-	**172**	**55**	singles, Stacked/B2B	singles, duplexes, semis, townhouse dwellings, low-rise multiple dwellings. 3 to 8 storeys	26 units/net ha	60 units/net ha
Kitchener		Medium Density Residential One	**8.1**			113	200		**313**	**77**	Street towns, Stacked/B2B	range of MD housing types including towns and multiple dwellings. 3 to 8 storeys	26 units/net ha	100 units/net ha
Kitchener		Medium Density Residential Two	**3.9**			41	128		**169**	**86**	Street towns, Stacked/B2B	range of MD housing types including towns and multiple dwellings. 3 to 8 storeys	60 units/net ha	200 units/net ha
Kitchener		Mixed Use One	**1.3**				70		**70**	**112**	Stacked/B2B	mulitple dwelling units, not including cluster towns)	26 units/net res ha	200 units/net res ha
Kitchener		Mixed Use Two	**13.0**			193	289		**482**	**74**	Street towns, Stacked/B2B	mulitple dwelling units, not including cluster towns)	100 units/net res ha	400 units/net res ha
Kitchener	Hidden Valley Master	High Rise Residential	**1.2**			20	30		**49**	**80**	Street towns, Stacked/B2B	multiple dwellings (apts)	2.0 FSI Building Height: 11m	4.0 FSI Building Height: n/a
Kitchener		Low Rise Residential - Estate	**5.7**	11					**11**	**4**	Assumed min lot size and 25% roads	singles on estate size lots	min width: 30m. Min lot area: 0.4 ha	
Kitchener		Low Rise Residential - Large Lot	**2.0**	9					**9**	**9**	Assumed 0.17 ha lot size (average of other lots in area) and 25% roads	singles on large sized lots	min width: 24m. Min lot area 929 sq.m	

Kitchener	Plan	Medium Rise Residential	**6.9**			93	208	-	**301**	**87**	Street towns, Stacked/B2B	multiple dwellings (apts), cluster townhouses.	0.6 FSI Building Height: 7.5m	2.0 FSI Building Height 25m (8 Storeys)
Kitchener		Mixed Use	**5.1**			25	252		**276**	**109**	Street towns, Stacked/B2B	multiple dwellings (apts)	0.6 FSI Building Height: 11m	2.0 FSI Building Height 25m (8 Storeys) or 50% greater if MU
Subtotal Kitchener			**381.8**	**2,689**	**0**	**2,223**	**2,772**	**0**	**7,685**					
North Dumfries		Agricultural Area (within Settlement Area)	**9.7**	85		58			**143**	**30**	singles - assumed to be redesignated to residential			
Subtotal North Dumfries			**9.7**	**85**	**0**	**58**	**0**	**0**	**143**					
Waterloo		Low Density Residential	**55.7**	453		301	201		**954**	**34**	singles, street towns, Stacked/B2B	Singles, semis, duplexes, tripexes, towns		150 bedrooms per ha.
Waterloo		Mixed-Use Medium Density Residential	**0.7**	-			31		**31**	**90**	stacked/B2B	multiple unit residential buildings		450 bedrooms per ha. (20 Storeys)
Waterloo		Employment Land Conversion - Millenium Blvd - Proposed Medium to High Density	**16.8**	-		188	332		**520**	**62**	Street towns, Stacked/B2B			
Waterloo		Employment Land Conversion - Proposed Mixed Use	**3.3**			33	75		**108**		Street towns, Stacked/B2B			
Waterloo	Beaver Creek Meadows District Plan	Low Density Residential 1	**25.7**	193		206			**399**	**31**	singles/street towns	singles, duplexes, semis, street towns	25 units/ha	35 units/ha
Waterloo		Low Density Residential 2	**12.4**	-		219	67		**286**	**46**	Street towns, Stacked/B2B	duplex, triplex, block towns, street towns, terrace dwelling, low-rise apts	35 units/ha	60 units/ha
Subtotal Waterloo			**114.7**	**646**	**0**	**947**	**706**	**0**	**2,299**					
Wellesley		Urban Residential	**10.7**	134					**134**	**25**	singles	singles	min lot area: 2500sqm	n/a
Subtotal Wellesley			**10.7**	**134**	**0**	**0**	**0**	**0**	**134**					
Wilmot		Urban Residential (Z1)	**15.0**	169		30			**199**	**27**	singles, low proportion of street towns	Zoned Agricultural. Assumed low density res.		
Wilmot		Urban Residential (Z2)	**0.1**	2					**2**	**25**	singles	Singles	min lot area: 600 to 2000 sqm.depending on servicing	n/a
Wilmot		Urban Residential (Z2b)	**0.5**	6					**6**	**25**	singles	SIngles	min lot area: 464 sqm	n/a
Wilmot		Urban Residential (Urban Growth Centre Overlay)	**9.4**	82		57	-		**139**	**30**	singles, street towns	Zoned Agriculture. Higher Density MU Development as per OP		
Subtotal Wilmot			**25.0**	**259**	**0**	**87**	**0**	**0**	**346**					
Woolwich	Elmira/ St. Jacobs	Residential and Ancillary (A)	**23.3**	204		140			**344**	**30**	singles, street towns	Zoned Agricultural. Assumed low density res.		
Woolwich	Elmira	Urban Land Use Area (R-1)	**0.9**	11		-			**11**	**25**	singles	Singles	min lot area: 1390 sqm	
Woolwich	Elmira	Policy 7.20.3	**12.4**	109		75			**183**	**30**	singles, street towns	Zoned Agricultural, Assumed future residential		
Woolwich	Breslau	Urban Area - Future Application (#16 Planned)	**11.8**	103		71			**174**	**30**	singles, street towns	Assumed Low/Medium Density		
Woolwich	Breslau	Low/Medium Density Residential	**5.0**	44		30			**74**	**30**	singles, street towns	LD: Singles, semis MD: all forms of dwellings containing 3 or mor units, such as tri-plex, four-plex, live/work, street and block towns	LD: 12 units/gross MD: 20 units/gross ha	LD: 20 units/gross ha MD: 50 units/gross ha

Woolwich	Breslau	Medium/High Density Residential	**15.0**			234	149		**383**	**51**	Street towns, Stacked/B2B	MD: all forms of dwellings containing 3 or mor units, such as tri-plex, four-plex, live/work, street and block towns HD: all forms of multiple dwelling units: various towns, mixed use res, low-rise apts (up to 40% of units)	MD: 20 units/gross ha HD: 50 units/gross ha	MD: 50 units/gross ha HD: 120 units/gross ha
Woolwich	Breslau	Village Main Street	**1.6**	-		33			**33**		street towns	LD: Singles, semis MD: all forms of dwellings containing 3 or mor units, such as tri-plex, four-plex, live/work, street and block towns	LD: 12 units/gross MD: 20 units/gross ha	LD: 20 units/gross ha MD: 50 units/gross ha
Subtotal Woolwich			**70.0**	**470**	**0**	**582**	**149**	**0**	**1,201**					
Total Waterloo Region			**826.4**	**5,938**	**0**	**5,045**	**4,398**	**0**	**15,381**					

Assumptions:

1. Assumed 100% of Kitchener's Deferral area as Community Area. Classified as DGA as per Waterloo Region
2. If Zoned as Agricultural, assumed to be residential if within the Settlement Area Boundary. (Zoning By-law regulates type and density of residential for Woolwich, Wilmot, Wellesley and Wilmot)
3. Portions of Cambridge "Future Urban Reserve" assumed to be Employment Area.

For Discussion Purposes Only

Date: May 26, 2022

Prepared by:

MGP Malone Given Parsons.

Waterloo Region Recommended Growth Scenario based on Land Needs Assessment Process

Planning and Works Public Input

Date: June 29, 2022

Presented By:

Matthew Cory

PLE

On behalf of the Schlegel Urban Developments Corp. (Kitchener)

Malone Given Parsons.

Significant Concerns with Regional Staff Recommended Growth Scenario

- The proposed housing mix represents a significant deviation from the market demand
- Ignoring the market demand to pursue unrealistic levels of intensification and high-density housing growth does not meet the needs nor wants of residents and undermines the achievement of the Growth Plan.
- The ‘Missing’ Middle (townhouses and multiplexes) is still missing from the Regional Staff Recommended Growth Scenario
- The shift in housing propensities is not based on sound evidence and will result in a housing mix that only provides options for singles, couples and seniors and does not provide options for families
- The Regional Staff Recommended Growth Scenario has conformity issues with the Growth Plan and may not be approved by the Province

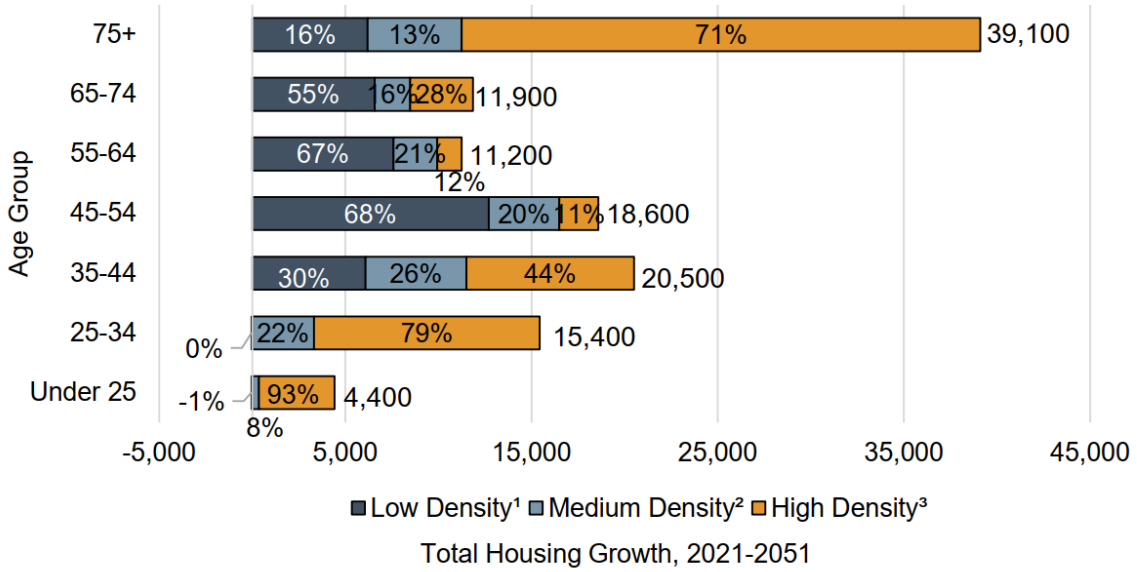
Growth in Housing Mix Comparison

- Regional Staff Recommended Growth Scenario housing mix goes beyond the Growth Plan targets and would result in an undersupply of low/medium density units in the Region.

- A MGP Balanced Growth Scenario can meet or achieve the targets and deliver a balance of housing that is market based to the extent possible.

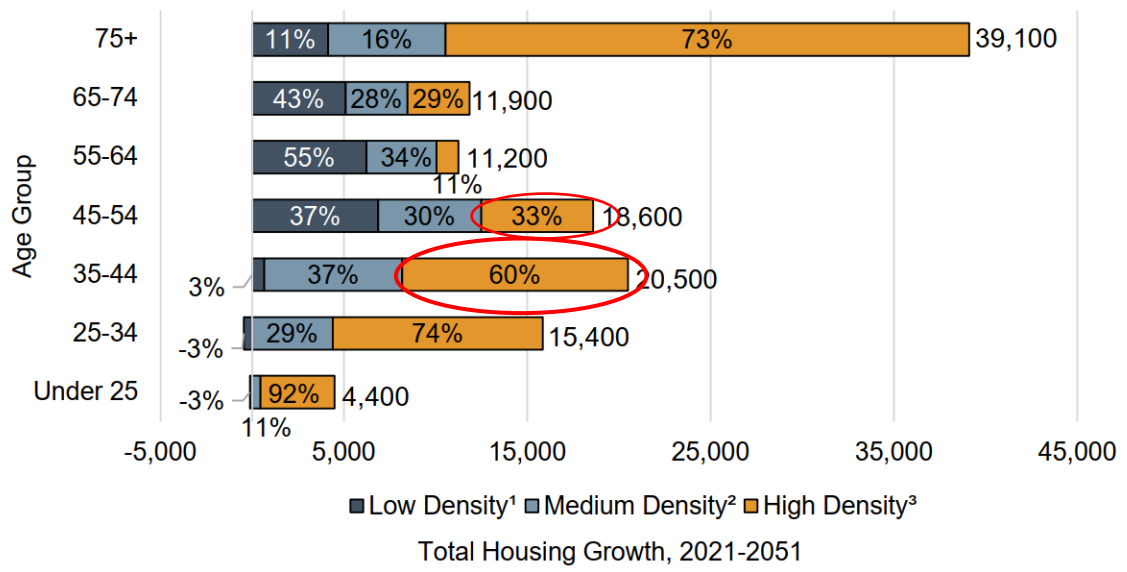
Housing Propensities (Options 1 and 2)

Figure B-3: Region of Waterloo, Option 1, Housing Forecast by Structure Type by Age Group, 2021 to 2051



[1] Low density represents singles and semi-detached.
[2] Medium density includes townhouses and apartments in duplexes.
[3] High density includes all apartments and stacked townhouses.
Secondary units are embedded within the categories above.
Source: Watson & Associates Economists Ltd

Figure B-4: Region of Waterloo, Option 2, Housing Forecast by Structure Type by Age Group, 2021 to 2051



[1] Low density represents singles and semi-detached.
[2] Medium density includes townhouses and apartments in duplexes.
[3] High density includes all apartments.
Secondary units are embedded within the categories above.
Source: Watson & Associates Economists Ltd.

- The shift in housing propensities supporting Options 2 and 3, and the preferred scenario are dependent on unprecedented and unrealistic choices for families to choose apartments as their preferred housing.

Intensification Rates

	AVERAGE ANNUAL HOUSING SUMMARY			INTENSIFICATION RATE
	BUA	DGA	TOTAL	
HISTORICAL GROWTH (2006-2021)[1]	1,536	1,509	3,045	50%
FORECAST GROWTH (2006 - 2029)[2]	1,643	2,270	3,913	42%
SURPLUS/DEFICIT	**-108**	**-760**	**-868**	

Source

1 - Figures A-6, A-7 and A-11, Land Needs Assessment Addendum (June 2022), prepared by Dillon/Watson

2 - Region of Waterloo Land Budget, April 2009

- The intensification rate in the consultant report does not recognize the skewing of the number that results from a failure to deliver the DGA portion of the housing growth forecast.
- This means that there is already a shortfall in the forecasted units required by the Region for low and medium density to meet projected needs – it is not appropriate to use the achieved skewed intensification rate to forecast housing need for the next 30 years.
- When the missing greenfield growth is factored in, the pro-rated intensification in a balanced housing growth scenario that was achieved is closer to 42%, not 50, nor 60%.

Built-Up Area Supply

Area Municipality	BUA Housing Capacity Estimate (Housing Supply)			
	Low Density[1]	Medium Density[2]	High Density[3]	Total
City of Cambridge	30	4,613	35,198	39,841
City of Kitchener	60	8,621	86,795	95,476
City of Waterloo	30	4,023	39,975	44,029
Township of North Dumfries	8	113	349	469
Township of Wellesley	8	113	313	434
Township of Wilmot	8	160	616	784
Township of Woolwich	8	116	398	521
City Total	**121**	**17,257**	**161,969**	**179,346**
City Housing Mix (%)	***<1%***	***10%***	***90%***	***100%***
Township Total	**30**	**501**	**1,677**	**2,208**
Township Housing Mix (%)	***1%***	***23%***	***76%***	***100%***
Region of Waterloo	151	17,758	163,645	181,555
Region of Waterloo Housing Mix (%)	*<1%*	*10%*	*90%*	*100%*

Figure A-13

- The vast majority of growth potential in the BUA for intensification is for apartments, higher intensification rates, with little to no ground-related growth will mean that most of all new units in the Region will be Apartments.

MGP Balanced Growth Scenario

REVISED UNIT FORECAST TO ACHIEVE POPULATION TARGET				
	Singles/Semis	Rows	Apartments	Total
Revised 2051 Unit Forecast	164,000	83,500	107,000	354,500
Revised 2051 Unit Mix (%)	46%	24%	30%	100%
Revised Unit Growth	31,570	57,870	42,635	132,075
Revised Unit Growth Mix (%)	24%	44%	32%	100%

GREENFIELD LAND REQUIREMENT TO 2051				
	Singles/Semis	Rows	Apartments	Total
New DGA Unit Requirement	10,228	9,115	172	19,516
Gross Density (units/ha)	15	35	100	
Land Requirement (ha)	**682**	**260**	**2**	**944**

- A medium density scenario was not prepared nor presented to the public for consideration.
- Providing medium density housing as the primary housing from 2021-2051 provides for higher densities while housing families in the most affordable forms of housing.

Recommended Settlement Boundary Area Expansion (Kitchener)

- Request that a medium density scenario based on 50% intensification and a forecasted 2051 unit growth mix of 24%/44%/32% low/medium/high density units be considered as the preferred growth scenario for Waterloo Region.
- MGP estimates that at the minimum target of 50% intensification, the Region would require at least another 944 hectares of Community Area to meet the growth forecast to 2051, some of this in the City of Kitchener.
- Schlegel Lands are part of a logical and optimal location to accommodate a portion of the required Settlement Area Boundary Expansion in Kitchener needed to achieve the growth forecasted in the Region to 2051.

QUESTIONS?

Waterloo Region Draft Regional Official Plan Amendment

Planning and Works

Date: July 27, 2022

Presented By:

Matthew Cory

PLE

On behalf of the Schlegel Urban Developments Corp. (Kitchener)

Malone Given Parsons.

Significant Concerns with Regional Staff Recommended Growth Scenario

- The proposed housing mix represents a significant deviation from the market demand
- Ignoring the market demand to pursue unrealistic levels of intensification and high-density housing growth does not meet the needs nor wants of residents and undermines the achievement of the Growth Plan.
- The shift in housing propensities is not based on sound evidence and will result in a housing mix that only provides options for singles, couples and seniors and does not provide options for families
- The Regional Staff Recommended Growth Scenario does not conform with the Growth Plan and is based on a Land Needs Assessment that does not comply with the Province's Methodology

Intensification Rates

	AVERAGE ANNUAL HOUSING SUMMARY			INTENSIFICATION RATE
	BUA	DGA	TOTAL	
HISTORICAL GROWTH (2006-2021)[1]	1,536	1,509	3,045	50%
FORECAST GROWTH (2006 - 2029)[2]	1,643	2,270	3,913	42%
SURPLUS/DEFICIT	**-108**	**-760**	**-868**	

Source

1 - Figures A-6, A-7 and A-11, Land Needs Assessment Addendum (June 2022), prepared by Dillon/Watson

2 - Region of Waterloo Land Budget, April 2009

- The intensification rate in the consultant report does not recognize the skewing of the number that results from a failure to deliver the DGA portion of the housing growth forecast.
- This means that there is already a shortfall in the forecasted units required by the Region for low and medium density to meet projected needs – it is not appropriate to use the achieved skewed intensification rate to forecast housing need for the next 30 years.
- When the missing greenfield growth is factored in, the pro-rated intensification in a balanced housing growth scenario that was achieved is closer to 42%, not 50, nor 60%.

Region of Waterloo Supply of Vacant Community Area Land

Municipality	Waterloo Region[1]	MGP[2]	Difference
Cambridge	664	454	- 210
Kitchener	1,150	968	- 182
Waterloo	332	233	- 99
North Dumfries	127	116	- 11
Wellesley	17	12	- 5
Wilmot	85	81	- 4
Woolwich	379	306	- 73
Total	**2,754**	**2,170**	**- 584**

Source:

[1] *Region of Waterloo Regional Official Plan Review - Land Needs Assessment - Addendum - June 21, 2022 (Table 2-2 Recommended Approach to Growth, Urban Community Land Needs, 2019 to 2051)*

[1] *MGP estimate of vacant land is as of 2021 Census*

MGP Balanced Growth Scenario for Waterloo Region

REVISED UNIT FORECAST TO ACHIEVE POPULATION TARGET				
	Singles/Semis	Rows	Apartments	Total
Revised 2051 Unit Forecast	164,000	83,500	107,000	354,500
Revised 2051 Unit Mix (%)	46%	24%	30%	100%
Revised Unit Growth	31,570	57,870	42,635	132,075
Revised Unit Growth Mix (%)	24%	44%	32%	100%

GREENFIELD LAND REQUIREMENT TO 2051				
	Singles/Semis	Rows	Apartments	Total
New DGA Unit Requirement	10,228	9,115	172	19,516
Gross Density (units/ha)	15	35	100	
Land Requirement (ha)	**682**	**260**	**2**	**944**

- A medium density scenario was not prepared nor presented to the public for consideration.
- Providing medium density housing as the primary housing from 2021-2051 provides for higher densities while housing families in the most affordable forms of housing.

MGP Balanced Growth Scenario for Kitchener

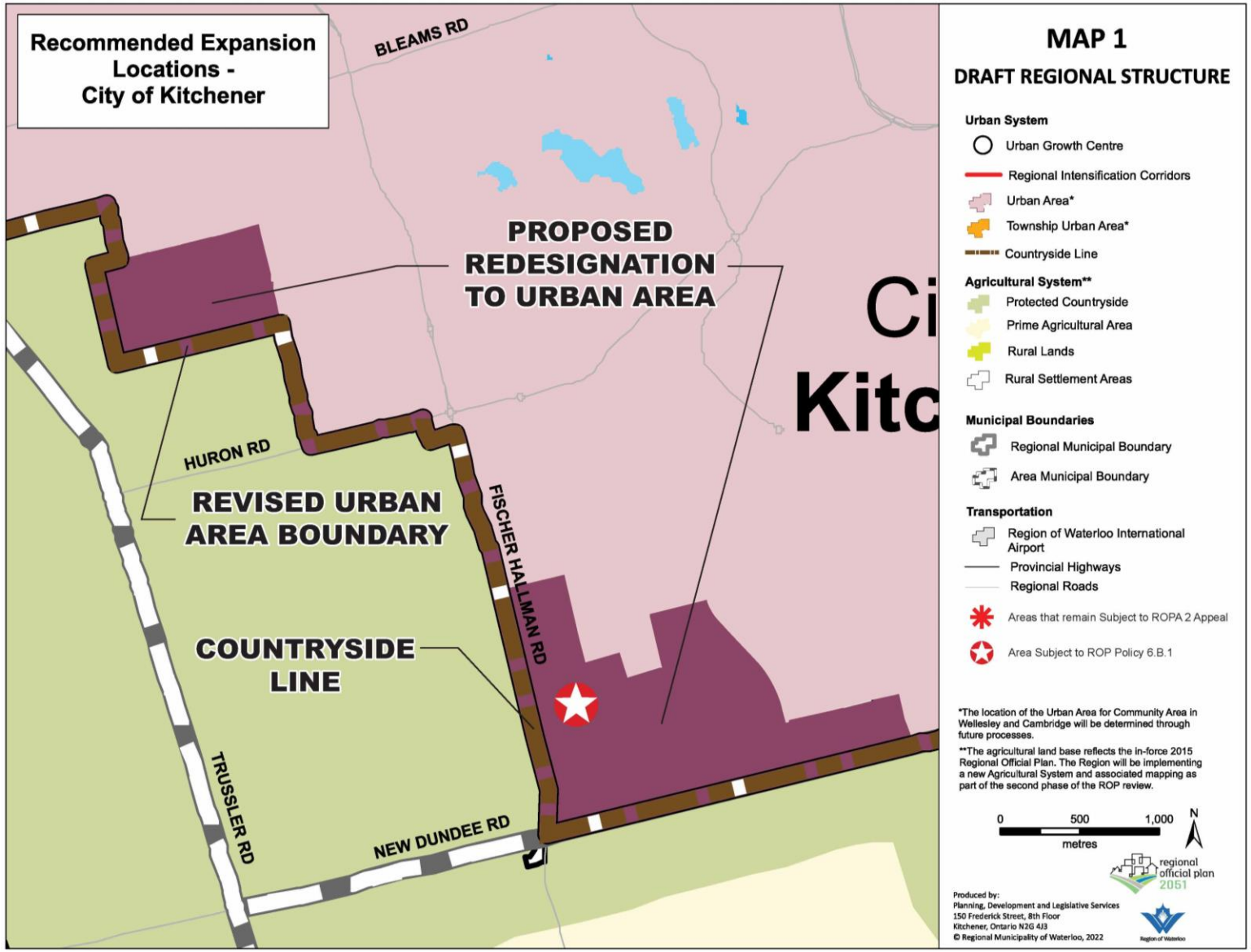
UNIT FORECAST TO ACHIEVE POPULATION TARGET				
	Singles/Semis	Rows	Apartments	Total
2021 Census[1]	52,915	12,900	34,000	99,815
2051 Unit Forecast	66,000	27,250	67,250	160,500
2051 Unit Mix (%)	41%	17%	42%	100%
Unit Growth	13,085	14,350	33,250	60,685
Revised Unit Growth Mix (%)	22%	24%	55%	100%

GREENFIELD LAND REQUIREMENT TO 2051				
	Singles/Semis	Rows	Apartments	Total
New DGA Unit Requirement	5,153	0	2,214	7,368
Gross Density (units/ha)	15	35	100	
Land Requirement (ha)	**344**	**-**	**22**	**366**

Recommended Settlement Boundary Area Expansion (Kitchener)

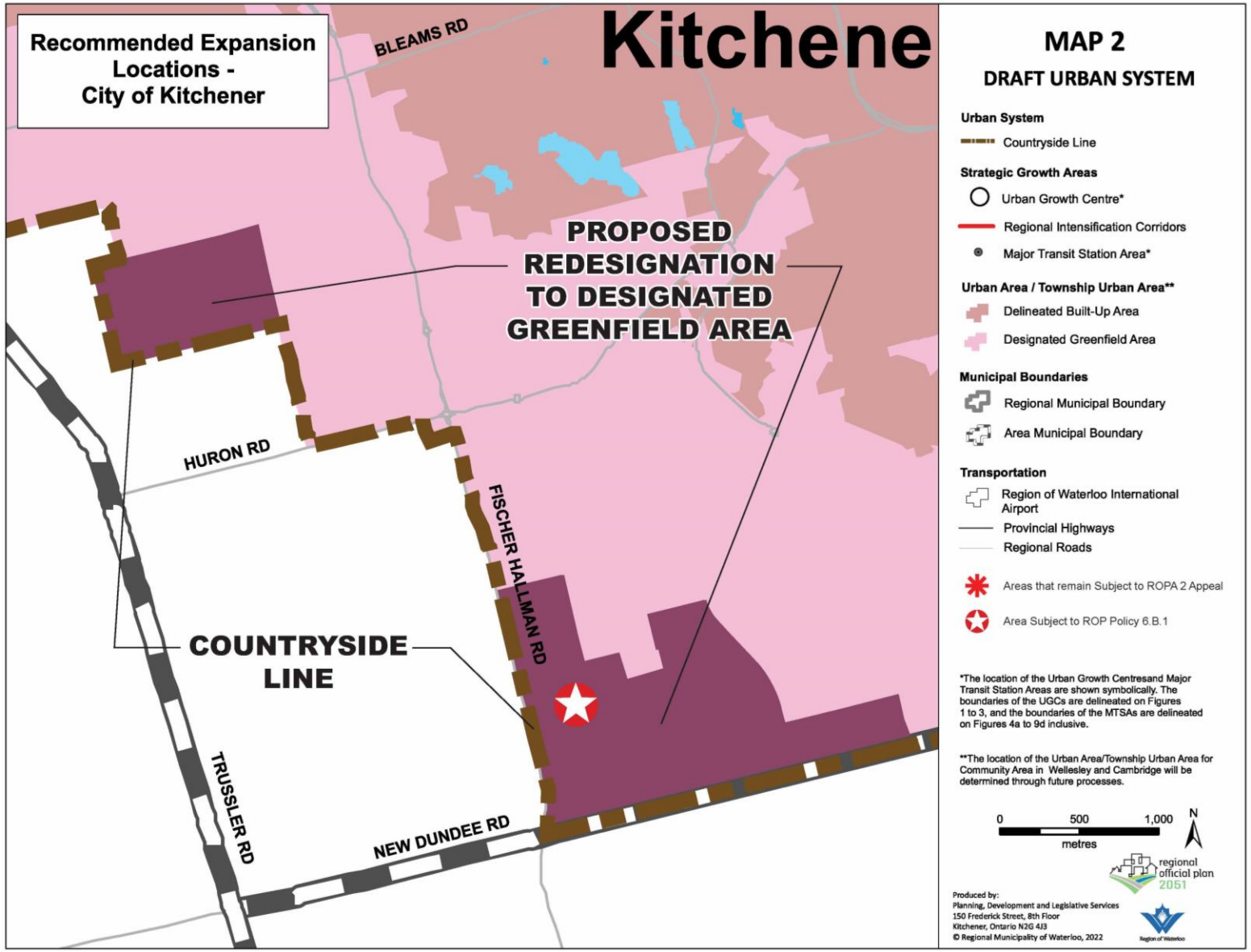
- Request that a medium density scenario based on 50% intensification and a forecasted 2051 unit growth mix of 24%/44%/32% low/medium/high density units be considered as the preferred growth scenario for Waterloo Region.
- MGP estimates that at the minimum target of 50% intensification, the Region would require at least another 944 hectares of Community Area to meet the growth forecast to 2051, some of this in the City of Kitchener.
- Remaining lands that are not identified as Protected Countryside are part of a logical and optimal location to accommodate a portion of the required Settlement Area Boundary Expansion in Kitchener needed to achieve the growth forecasted in the Region to 2051. These non-Protected Countryside lands in the City of Kitchener are ~240ha.

Schlegel Recommended ROPA Mapping Changes (Kitchener)



Malone Given Parsons.

Recommended ROPA Mapping Changes (Kitchener)



Malone Given Parsons.

QUESTIONS?

Waterloo Region Draft Regional Official Plan Amendment

Planning and Works

Date: August 11, 2022

Presented By:

Matthew Cory

PLE

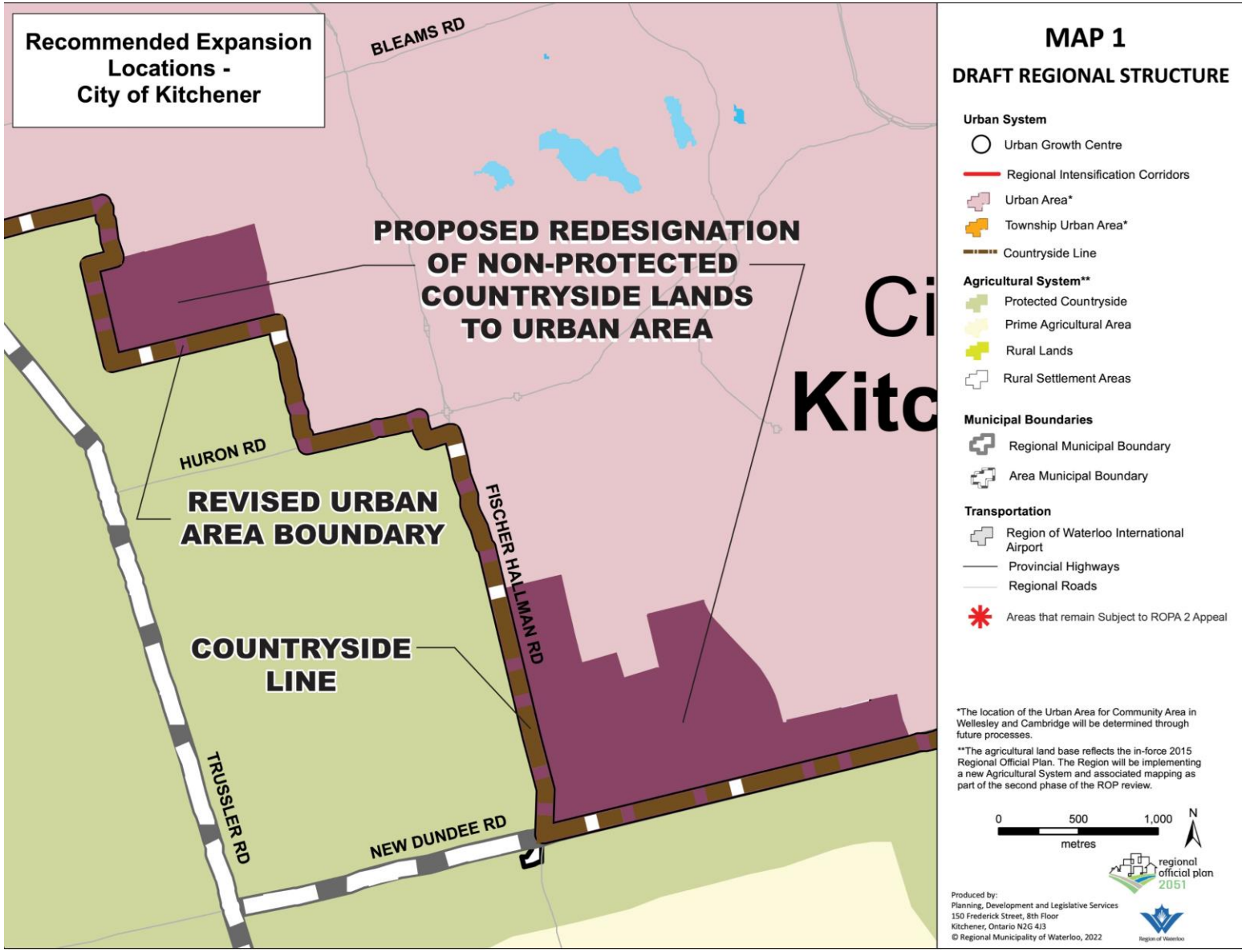
On behalf of the Schlegel Urban Developments Corp. (Kitchener)

Malone Given Parsons.

Recommended Settlement Area Boundary Expansion (Schlegel)

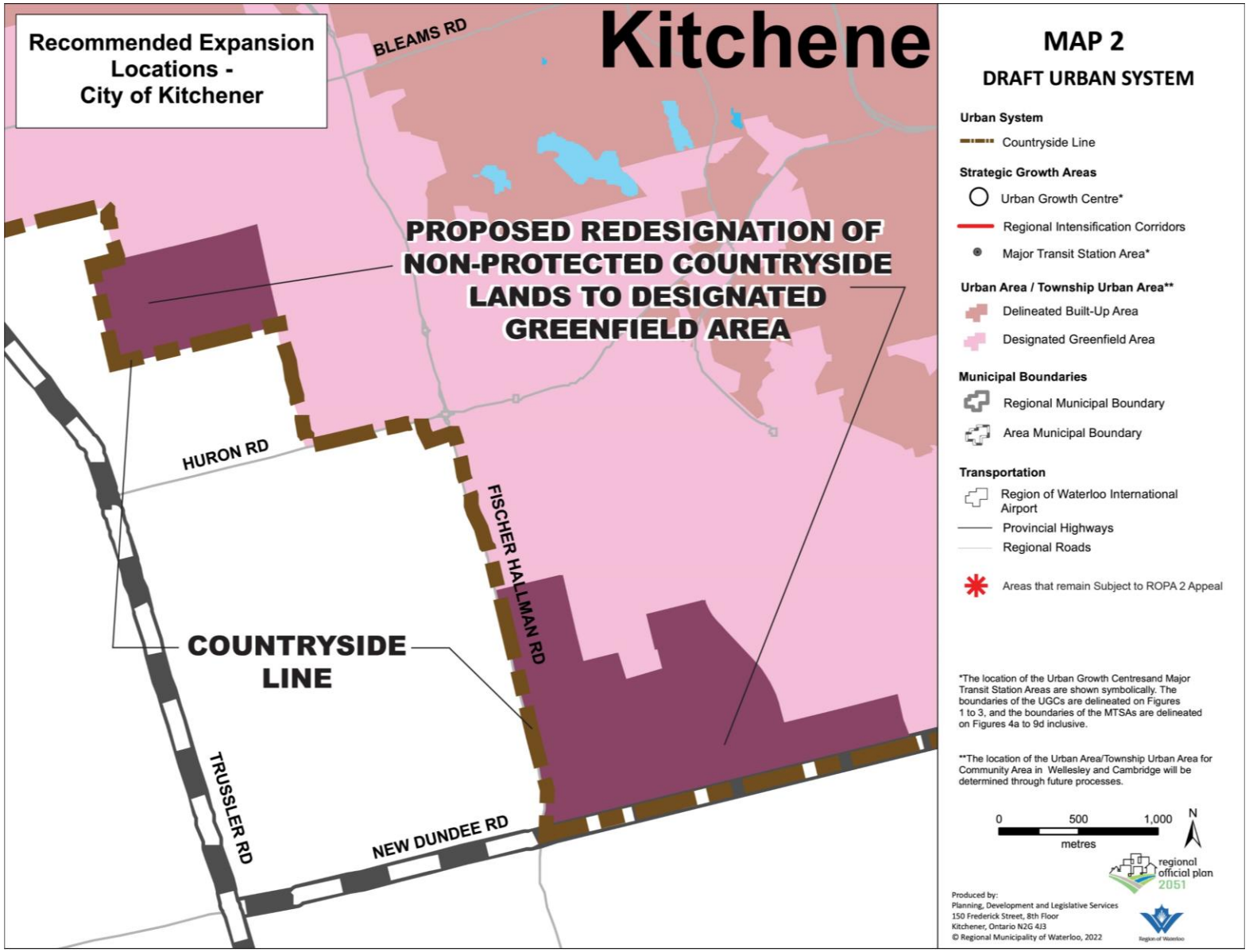
- Due to the size, the Schlegel Lands can be planned as a complete community to accommodate the forecasted growth.
- Comprehensively developed to provide for opportunities to address climate change goals, including promoting compact and energy-saving designs, denser developments, and transit-supportive and walkable communities.
- The lands are located adjacent to the Primary Settlement Area of Kitchener.
- The proposed expansion lands, as well as any required infrastructure and services, will be planned in a financially and environmentally sustainable manner over their full life cycle and benefit from the location or expansion of existing infrastructure.
- There are no specialty crop areas in the Schlegel Lands.
- The proposed expansion is located on lands which <u>are not</u> designated by the Region as Protected Countryside Area.

Schlegel Recommended ROPA Mapping Changes (Kitchener)



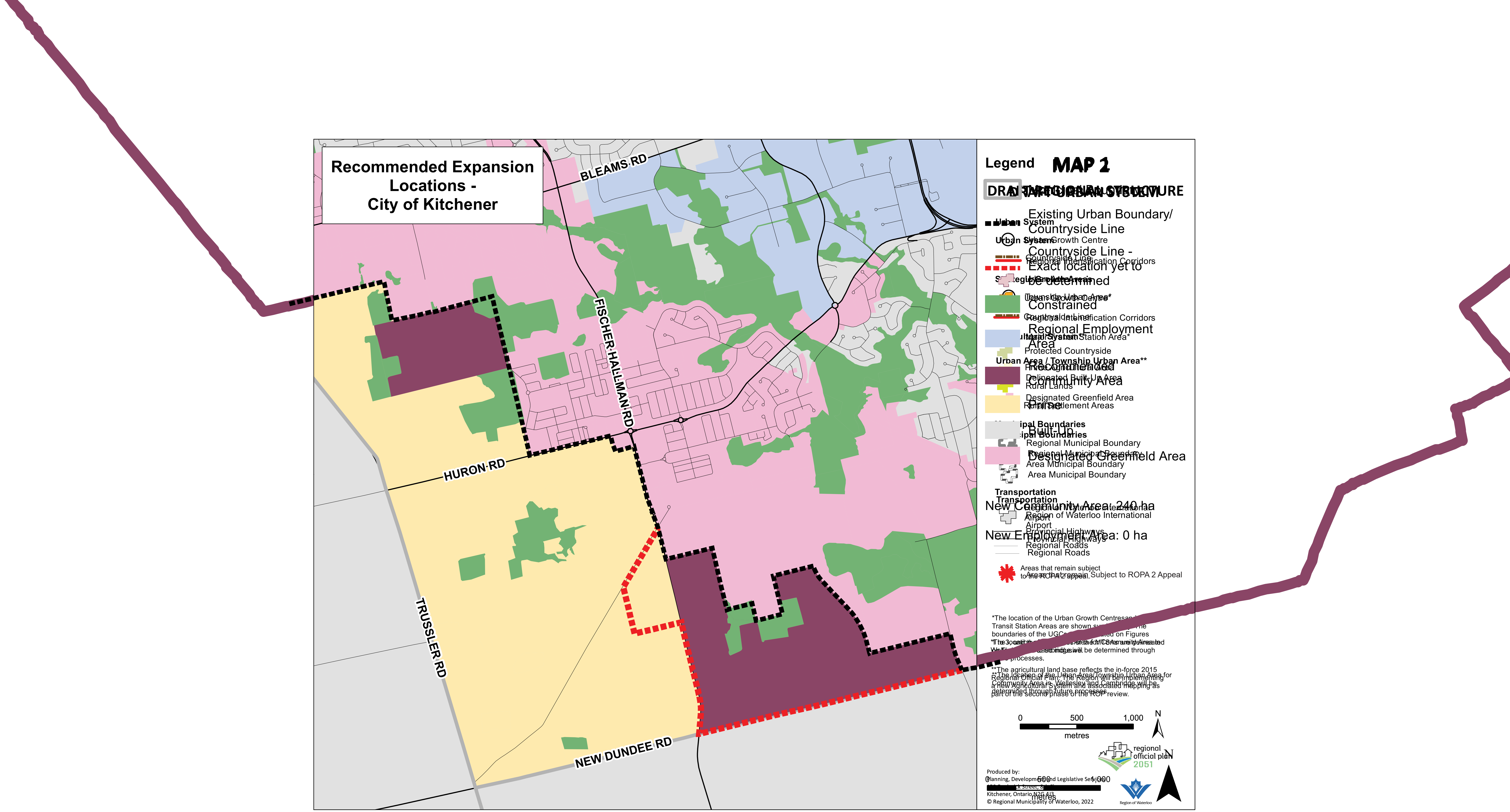
Malone Given Parsons.

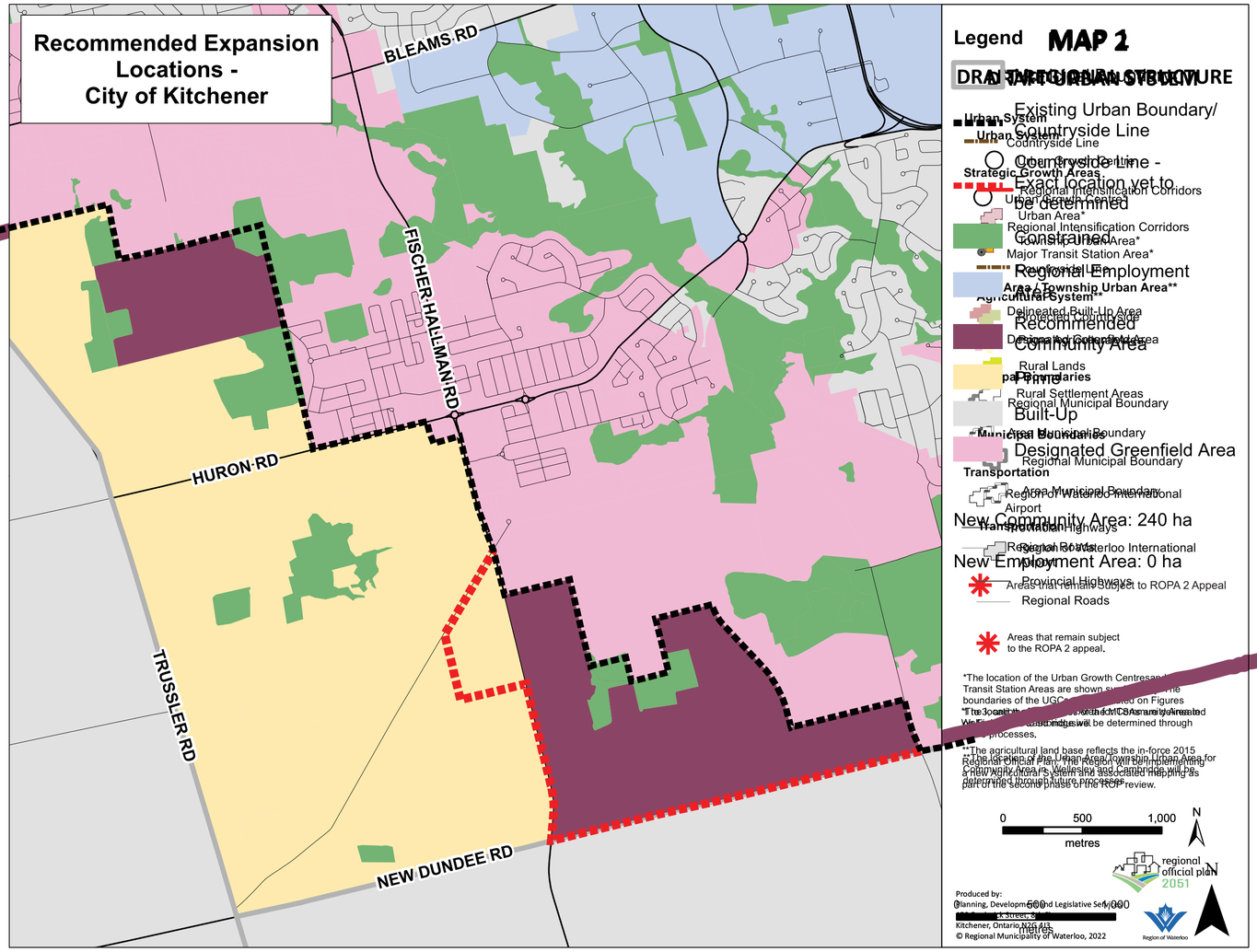
Recommended ROPA Mapping Changes (Kitchener)



Malone Given Parsons.

QUESTIONS?


Recommended Expansion Locations - City of Kitchener
BLEAMS RD
FISCHER-HALLMAN RD
HURON RD
TRUSSLER RD
NEW DUNDEE RD
Legend
MAP 1
Existing Urban Boundary/ Countryside Line
Countryside Line - Exact location yet to be determined
Constrained
Regional Employment Area
Recommended Community Area
Built-Up
Designated Greenfield Area
New Community Area: 240 ha
New Employment Area: 0 ha
0 500 1,000
metres
regional official plan 2051
Region of Waterloo


Recommended Expansion Locations - City of Kitchener
BLEAMS RD
FISCHER-HALLMAN RD
HURON RD
TRUSSLER RD
NEW DUNDEE RD
Legend
MAP 2
DRAFT REGIONAL STRUCTURE
Urban System
Countryside Line
Strategic Growth Areas
Urban Growth Centres
Regional Intensification Corridors
Major Transit Station Area*
Area / Township Urban Area**
Agricultural System**
Rural Lands
Rural Settlement Areas
Municipal Boundaries
Regional Municipal Boundary
Area Municipal Boundary
Transportation
Region of Waterloo International Airport
Provincial Highways
Regional Roads
Existing Urban Boundary/ Countryside Line
Countryside Line - Exact location yet to be determined
Constrained
Regional Employment
Recommended Community Area
Built-Up
Designated Greenfield Area
New Community Area: 240 ha
New Employment Area: 0 ha
Areas that remain subject to the ROPA 2 appeal.
Areas that remain subject to ROPA 2 Appeal
*The location of the Urban Growth Centres and Major Transit Station Areas are shown symbolically. The boundaries of the UGCs and MTSAs are provided on Figures
processes.
**The agricultural land base reflects the in-force 2015 Regional Official Plan. The Area / Township Urban Area Community Area in Wellesley and Cambridge will be determined through future processes.
0
500
1,000
metres
N
regional official plan 2051
Produced by:
Planning, Development and Legislative Services
Kitchener, Ontario, N2G 4J3
Ontario
© Regional Municipality of Waterloo, 2022
Region of Waterloo

Appendix A

Date:	May 27, 2022
Project:	Schlegel – Waterloo Region Supply Analysis
MGP File:	22-3105
Subject:	**Waterloo Region Community Area Land Needs Assessment Methodology**

Appendix A outlines the Land Needs Assessment Methodology ("LNAM") used to determine the amount of Community Area land required within Waterloo Region to accommodate the forecasted growth to 2051, as specified in *A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2020* ("Growth Plan"). This analysis was performed by Malone Given Parsons Ltd. ("MGP"), in consultation with IBI Group, on behalf of Schlegel Urban Developments Corp.

There are six (6) main components involved in the process.

1) Population Forecast: Establish the total population growth based on the 2021 Census and 2051 population forecast in the Growth Plan.
2) Housing Need: Forecast total housing need by dwelling type to achieve the population forecast.
3) Housing Needs Allocation: Allocate the projected housing need by dwelling type among lower-tier municipalities, if applicable.
4) Housing Supply Potential by Policy Area: Allocate residential units by dwelling type to the three policy areas: Built-Up Area, Designated Greenfield Area ("DGA") and Rural Area.
5) Community Area Jobs: Determine the number of jobs estimated to be accommodated in the Community Areas to the 2051 horizon.
6) Need for Additional Land:
    - Calculate existing DGA unit supply.
    - Determine the amount of growth needed to be accommodated in the new DGA and calculate the Community Area land need requirement based on the unit mix.
    - Verify the density to ensure compliance with the density targets established by the Growth Plan.

1.0 Population Forecasts (Component 1)

Component 1 of the Land Needs Assessment Methodology for calculating Community Area requires a population forecast to 2051. Municipalities may use the forecasted numbers in Schedule 3 of the Growth Plan or an alternate growth scenario. In this analysis, the Schedule 3 2051 population forecast for Waterloo Region of 923,000 is used, with the 2021 Census population used as the base year. It is assumed that the net undercount from the 2016 Census is applied to 2021 and beyond since the 2021 net undercount is not yet available. The non-household population rates from the 2021 Census are also applied to 2021 and beyond. The forecasted total population growth from 2021 to 2051 is 322,012 and is used to estimate a unit forecast in Component 2.

Table 1: Waterloo Region Population Forecasts

	2021 Census[1]	2051 Forecast	Growth 2021-2051
Population	587,165	901,771	314,606
Household Population	579,830	890,506	310,676
Non-Household Population[2]	7,335	11,265	3,930
Net Undercount Rate[3]	2.30%	2.30%	
Total Population	**600,988**	**923,000**[4]	**322,012**

Sources:

[1]*Statistics Canada, 2021 Census Profile.*

[2]*Statistics Canada, 2021 Census Profile. Assumed a rate of 1.25% for non-household population.*

[3]*Statistics Canada, 2016 Census net undercount rate for the Kitchener-Cambridge-Waterloo CMA. Carried forward to 2051.*

[4]*A Place to Grow, 2020, Schedule 3, Distribution of Population and Employment for the Greater Golden Horseshoe to 2051.*

2.0 Housing Need (Component 2)

The population forecast is converted into a unit forecast by dwelling type as part of Component 2. Based on Hemson's technical report *Greater Golden Horseshoe: Growth Forecasts to 2051* dated August 2020, the 2051 unit forecast is 369,000 units with a growth of 146,575 units from 2021 to 2051. This is assumed to be a modified market-based demand forecast that is a basis for estimating unit need prior to accounting for changes to the household forecast required to achieve conformity with the Growth Plan. Table 2 summarizes the housing need by dwelling type. Dwelling types include the following categories: single/semi-detached houses, row houses and apartments.

Table 2: Hemson Forecasted Housing Need for Waterloo Region

	Singles/Semis	Rows	Apartments	Total
2021 Census[1]	132,430	25,630	64,365	222,425
2051 Forecast[2]	199,000	53,000	117,000	369,000
Unit Growth	66,570	27,370	52,635	146,575
Growth Mix (%)	45%	19%	36%	100%

Sources:

[1]*Statistics Canada, 2021 Census Profile.*

[2]*Hemson Technical Report, Greater Golden Horseshoe: Growth Forecasts to 2051, August 2020.*

The Growth Plan requires its minimum density and intensification targets to be achieved while providing for market-based housing demand and to accommodate the forecast population. To achieve these objectives, a revised unit mix is required that provides market-based demand for each housing type to the extent possible, while ensuring the minimum targets can be achieved. The revised housing mix is reflective of market demand while still achieving the Growth Plan objectives of a more compact built-form and reflects the constraints of directing growth within the Built-Up Area where there are limited opportunities for new family-oriented housing. Given this, the unit growth should be distributed to allocate higher density housing forms to the Built-Up Area while providing for lower density family-oriented housing to the DGA.

Table 3 translates the forecasted housing unit growth into a total projected population. Similar to Table 1 above, the net undercount and non-household population rates are carried forward to calculate the total population. This step generates the total forecasted population growth based on the Growth Plan (923,000 people) with the forecasted population growth resulting from the revised unit growth mix (322,012).

To continue to provide as much grade-related and more affordable family-oriented housing as possible, the component of growth related to row housing is increased. Providing most new housing through rows accommodates a similar housing preference to singles (grade-related housing) that can accommodate families. Rows also have the potential for achieving gentle intensification in both the Built-Up Area and higher densities in the DGA with a housing unit type that is relatively more affordable on a per square basis to families than single/semi-detached dwellings and apartments.

Table 3: Housing Need Adjusted to Achieve Population Target

	Singles/Semis	Rows	Apartments	Total
Revised 2051 Unit Forecast	164,000	83,500	107,000	354,500
Revised 2051 Unit Mix (%)	46%	24%	30%	100%
Revised Unit Growth	31,570	57,870	42,635	132,075
Revised Unit Growth Mix (%)	24%	44%	32%	100%
PPU[1]	3.17	2.37	1.73	
Household Population Growth	100,077	137,094	73,588	310,759
Non-Household Population Rate[2]	1.25%	1.25%	1.25%	1.25%
Non-Household Population	1,250	1,713	919	3,882
2021 Census Population	101,327	138,807	74,507	314,641
Net Undercount Rate[3]	2.30%	2.30%	2.30%	2.30%
Forecasted Population Growth	**103,712**	**142,074**	**76,261**	**322,048**

Sources:

[1]Region of Waterloo Development Charges Background Study, Watson & Associates, April 2019.

[2]Statistics Canada, 2021 Census Profile.

[3]Statistics Canada, 2016 Census net undercount rate for the Kitchener-Cambridge-Waterloo CMA. Carried forward to 2051.

3.0 Housing Need Allocation (Component 3)

Component 3 of the Community Area Land Needs Assessment Methodology involves allocating the projected housing need among the lower-tier municipalities (if applicable). Waterloo Region will consult with the lower-tier municipalities and the public when making such allocations.

4.0 Housing Supply Potential by Policy Areas (Component 4)

Component 4 determines the potential housing supply by policy areas. The policy areas include the Built-Up Area, Designated Greenfield Area, and Rural Area.

Tables 4 forecasts household growth by dwelling type. For reference, the following is the planning period used in this analysis:

- 2022 – 2051: this is the period from the last Census in 2021 to the completion of the Municipal

Comprehensive Review ("MCR") to 2051. During this period, the minimum intensification target for new development is 50% as required under the 2020 Growth Plan.

It is also assumed that a small portion (0.5%) of the growth will be accommodated in the Rural Area to reflect the limited growth potential in Rural Areas.

With the established intensification targets, along with an estimated number of units by dwelling type likely to be created within the Built-Up Area, the DGA units and Rural Area units are calculated. Table 4 distributes the revised unit growth, established as part of Component 2, among the policy areas. It generates a unit demand for the Built-Up Area, DGA and Rural Area. It is the DGA unit demand that is used in Component 6 to help calculate the new DGA Community Area land requirement.

Table 4: Distribution of Units by Policy Area

2022-2051	Singles/Semis	Rows	Apartments	Total
Built-Up Area Units (50%)	3,302	26,415	36,321	66,038
% Units	*5%*	*40%*	*55%*	*100%*
DGA Units (49.5%)	27,608	31,455	6,314	65,377
% Units	*42%*	*48%*	*10%*	*100%*
Rural Area Units (0.5%)	660	0	0	660
% Units	*100%*	*0%*	*0%*	*100%*
Total Distribution	**31,570**	**57,870**	**42,635**	**132,075**
Built-Up Area Unit Demand	**3,302**	**26,415**	**36,321**	**66,038**
DGA Unit Demand	**27,608**	**31,455**	**6,314**	**65,377**
DGA Unit Mix (%)	**42%**	**48%**	**10%**	**100%**

5.0 Community Area Jobs (Component 5)

While the purpose of Component 5 is to estimate the number of jobs estimated to be accommodated in the Community Areas, it does not have any impact on the land requirement. Community Area jobs are calculated as part of Component 6 when ensuring the density targets set out in the Growth Plan are met.

6.0 Need for Additional Community Area Land (Component 6)

Component 6 converts the housing need requirements, from Component 4, into the amount of additional Community Area land required to accommodate the 2051 population targets in the Growth Plan. This component includes the following steps:

- Calculate existing supply;
- Determine Community Area land requirement; and,
- Verify Growth Plan density.

6.1 Calculate Existing Supply

It is first necessary to calculate the existing supply of units within the existing DGA Community Area. This analysis was undertaken as part of MGP's Waterloo Region Designated Greenfield Area Density Analysis, which generates a breakdown of planned and vacant units. Full details of this analysis can be

found in Appendix B.

Planned units include all units estimated to be built beyond Spring 2021, those under construction, or included within development applications submitted to the municipalities that are either registered, draft approved or in progress. Table 5 is a summary of all planned units by lower-tier municipality.

Table 5: Waterloo Region Planned Designated Greenfield Area Unit Supply by Municipality

Municipality	Singles/Semis	Towns	Apartments	Total
Cambridge	2,007	2,745	2,134	6,885
Kitchener	3,938	6,172	2,666	12,775
North Dumfries	1,222	704	0	1,926
Waterloo	1,006	1,208	689	2,902
Wellesley	16	0	0	16
Wilmot	786	234	28	1,048
Woolwich	2,468	1,835	627	4,929
Total Waterloo Region	**11,442**	**12,896**	**6,142**	**30,480**

Vacant units are the potential units for all vacant residential land, as designated in the lower-tier Official Plan/Secondary Plans. The units are calculated based on the vacant land area available and the corresponding Official Plan policy permissions related to density and permitted residential dwelling types. A summary of vacant units is found in Table 6.

Table 6: Waterloo Region Vacant Designated Greenfield Area Unit Supply by Municipality

Municipality	Singles/Semis	Towns	Apartments	Total
Cambridge	1,655	1,919	0	3,574
Kitchener	2,689	4,996	0	7,685
North Dumfries	85	58	0	143
Waterloo	646	1,653	0	2,299
Wellesley	134	0	0	134
Wilmot	259	87	0	346
Woolwich	470	731	0	1,201
Total Waterloo Region	**5,938**	**9,444**	**0**	**15,381**

The totals for the planned and vacant units incorporate details related to any recommended Employment Area Conversions as per Waterloo Region's report *Regional Official Plan Review – Employment* dated April 2021. The units are either based on the units specified within the conversion request or they are estimated in the same manner as determining the units on vacant residential land, as mentioned above.

6.2 Determine Community Area Land Requirement

The planned and vacant units (including employment area conversion units) are combined for a total existing DGA supply. This existing supply is deducted from the forecasted housing need to generate the

new DGA unit requirement as shown in Table 7.

Table 7: New Designated Greenfield Area Unit Requirement

	Singles/Semis	Rows	Apartments	Total
Planned Units	11,442	12,896	6,142	30,480
Vacant Units	5,938	9,444	0	15,381
Total Existing DGA Supply	**17,379**	**22,340**	**6,142**	**45,861**
DGA Unit Demand	**27,608**	**31,455**	**6,314**	**65,377**
New DGA Unit Requirement	**10,228**	**9,115**	**172**	**19,516**
New DGA Unit Mix	**52%**	**47%**	**1%**	**100%**

Having established the new DGA unit requirement, the new Community Area land requirement is generated by applying a standard gross density (units/ha) to each dwelling type as shown in Table 8.

Table 8: Additional Land Requirement to 2051

	Singles/Semis	Rows	Apartments	Total
New DGA Unit Requirement	10,228	9,115	172	19,516
Gross Density (units/ha)	15	35	100	
Land Requirement (ha)	**682**	**260**	**2**	**944**

As a result, a minimum of 944 hectares of additional land in Waterloo Region is necessary to be designated as new Community Area through expansion of the settlement area boundary to meet the population forecast set forth in the Growth Plan.

While Waterloo Region has yet to determine the local allocation of growth, it is appropriate to examine historic growth allocations from the *Regional Official Plan 2031* dated June 2015. According to the Regional Official Plan, 84% of population growth and 87% of employment growth in the Region between 2006-2031 was allocated to the Tri-City municipalities of Kitchener, Cambridge, and Waterloo with potential to accommodate additional land in the following distributions:

- The City of Kitchener was allocated 45% of the Region's population growth and 34% of the Region's employment growth between 2006-2031.
- The City of Cambridge was allocated 22% of the Region's population growth and 28% of the Region's employment growth between 2006-2031.
- The City of Waterloo was allocated 17% of the Region's population growth and 26% of the Region's employment growth between 2011-2031.

6.3 Verify Growth Plan Density

Once the Community Area land need requirement is calculated, it is important to ensure that the DGA achieves the minimum density target of 50 residents and jobs per hectare set out in the Growth Plan. This is calculated by estimating the full population and employment of the DGA and dividing it by its gross developable area. To calculate the total residents and jobs, a population-related jobs rate of one

(1) job per six (6) people is applied along with the same PPUs and net undercount rate as used in Table 3 above.

Table 10: Density Analysis

	Land Area (ha)	People & Jobs	Density
Built DGA (as of 2021 Census)	1,638	76,998	47.0
Planned & Vacant DGA	2,170	137,805	63.5
Existing DGA Subtotal	3,808	214,803	56.4
New DGA Requirement	944	63,344	67.1
Total DGA	**4,752**	**278,147**	**58.5**

As demonstrated here, both the Region's existing DGA and new DGA requirement are planned to exceed the Growth Plan minimum density target of 50 residents and jobs per hectare.

Appendix B

Date:	May 27, 2022
Project:	Schlegel – Waterloo Region Supply Analysis
MGP File:	22-3105
Subject:	**Waterloo Region Designated Greenfield Area Density Analysis Methodology**

Appendix B outlines the methodology involved in the analysis performed by Malone Given Parsons Ltd., on behalf of Schlegel Urban Developments Corp., to calculate the density of the Community Area within Waterloo Region's Designated Greenfield Area ("DGA"). Through the Region's Municipal Comprehensive Review ("MCR") process, it is understood that a similar analysis has been completed by the Region with the goal of forming inputs to the Land Needs Assessment ("LNA") to project land requirements to meet the population targets outlined in *A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2020* ("Growth Plan").

There are four (4) main steps in the LNA process:

1. Calculate Community Area Developable Area.
2. Determine the Status of Community Area Land.
3. Determine the Unit Supply.
4. Calculate DGA Density.

Each step is outlined below.

1.0 Calculate Community Area Developable Area

Waterloo Region's lower-tier Official Plan/Secondary Plan land use schedules are digitized into ArcGIS to establish a base for the developable area calculations for the DGA. All areas within the Settlement Area Boundary and outside of the Built-Up Area are classified as DGA. Each designation is classified as either Community Area, Employment Area, or Non-Developable Area.

The developable Community Area includes all lands available for development for both public and private uses, including, residential, commercial, and institutional uses, parks, and infrastructure (i.e., local, and regional roads and stormwater management ponds). Non-developable area land includes all environmental features and natural heritage systems, major infrastructure, and infrastructure rights-of-way (i.e., existing 400-series highways, utility lines, and rail lines), and various existing uses (i.e., cemeteries and estate subdivisions). Employment Area land includes all land available for employment uses which are traditionally designated in Official Plans for business and economic activities.

This analysis focuses on the Community Area as it is this area that has potential to yield residents and population-related jobs. The developable Community Area excludes all Employment Area and all Non-Developable Area within the DGA as delineated on the relevant lower-tier Official Plan/Secondary Plan schedules.

2.0 Determine the Status of Community Area Land

To estimate the residential unit yield and potential population, it is first necessary to classify the Community Area land into the following categories:

1. **Built**: This includes all land that appears built as of Spring 2021 to align these units with the 2021 Census. The land is classified through an analysis of Google Earth and/or Regional/Municipal interactive satellite/aerial imagery and Google Street View images dated Spring of 2021, if available, and a review of Geowarehouse's property sales history, where appropriate.
2. **Planned**: This includes all land that was either built beyond the Spring of 2021 or has a development application submitted, draft approved, registered or under construction.
3. **Vacant**: This refers to all land remaining within the Community Area Land that is unbuilt and without any current development application submissions.

3.0 Determine the Unit Supply

Once the developable Community Area is calculated, the total unit supply by dwelling type for each lower-tier municipality is determined. A unit count is generated for the same three categories related to the land area; Built, Planned, and Vacant. Dwelling types include single-detached, semi-detached, townhouses, and apartments.

3.1 Built Units

To achieve an accurate picture of unit growth potential from 2022 to 2051, it is necessary to account for all existing units within the DGA built as of the 2021 Census. Built units as of Spring 2021 are estimated using a variety of sources. Available sources include, but are not limited to, satellite and aerial imagery from Google Earth and/or Regional/Municipal interactive mapping, parcel data, development subdivision status mapping (current and historical, if available), Staff reports, draft plans, and data available in Geowarehouse. All built units are inventoried with their source referenced. A unique map identifier by municipality matches the records in Attachment 2 to the lower-tier municipality maps in Attachment 4.

3.2 Planned Units

Planned units include all units built beyond Spring 2021, those under construction, and those included within development application submissions to the lower-tier municipalities that are either registered, draft approved, or submitted. The Planned unit supply is calculated using the same sources used to calculate the Built unit supply. Though in this case, the most current development application status mapping available from the lower-tier municipalities is used, if available, or the current development applications listed on the municipality's website are reviewed to determine if any of the applications are within the DGA. All development applications are compiled into a summary table in Attachment 2. As with the built units, a unique map identifier is given to each application to correlate it with the maps found in Attachment 4.

The following assumptions have been used in determining the unit supply for the Planned units within Waterloo Region.

1. Where draft plans provide a range of total units by type, rather than an exact number, the

average is calculated and added to the unit supply.
2. Where draft plans refer to “Multiple Residential” units, they are assumed to be townhouses.
3. Where draft plans refer to “Multiple Residential/Mixed Used” units, they are assumed to be apartments.

3.3 Vacant Units

It is necessary to generate a unit potential for all vacant residential lands, as designated in the lower-tier Official Plans/Secondary Plans. The land area of each residential designation is compiled along with the corresponding Official Plan policy permissions relating to density and permitted residential uses. Assumptions are made using our discretion and knowledge of the policies to split the residential land area between the policies permitted dwelling types. This land area is multiplied by the gross units per hectare for that specific dwelling type to generate an overall unit count.

The conversion from net density to gross density for residentially designated land assumes that non-residential uses would amount to 50% of the gross area. The non-residential uses include roads, SWMs, parks, institutional areas, and commercial areas. For Secondary Plans that have some of these uses already delineated, the calculation between net to gross density may vary. Table 1 demonstrates the percentage of land generally associated with each of the non-residential uses.

Table 1: Non-Residential Uses Assumptions

Non-Residential Uses	% of Non-Residential Land
Roads	28%
SWMs	7%
Commercial	3%
Schools	5%
Other Institutional	2%
Parks	5%
Total	**50%**

Table 2 converts the assumed net density into the gross density to be applied when calculating the vacant units.

Table 2: Net and Gross Residential Densities by Dwelling Type

Dwelling Type	Assumed Net Density	Calculated Gross Density
Single-Detached Dwellings	25	12.5
Semi-Detached Dwellings	30	15
Street Townhouses (Including On-Street and Laneway Townhouses)	40	20
Stacked / Back-to-Back Townhouses	90	45
Stacked Back-to-Back Townhouses	120	60
Low-Rise Apartments	100	50
Mid-Rise Apartments	200	100
High-Rise Apartments	300	150

Once the Vacant units are estimated by dwelling type, the net density is calculated to ensure it is within the Official Plan permissions range. Details are found in Attachment 3.

The final unit supply by dwelling type is tallied by the upper- and lower-tier municipality for each of the three categories; Built, Planned and Vacant. A summary of the results is found in Attachment 1. It is the Planned and Vacant unit supply that is used an input to the LNA.

4.0 Calculate Density of Designated Greenfield Areas

To calculate the DGA Community Area's density, estimates for population and population-related jobs are required.

4.1 Population

The population within the existing DGA as of 2021 is calculated based on a persons per unit ("PPU") assumption by dwelling type. The PPU assumptions, shown in Table 3, are in accordance with Waterloo Region's 2019 Development Charges Background Study. A 2.35% net undercount rate is applied to the population totals, based on the 2016 Census estimated net undercount rate for the Cambridge-Kitchener-Waterloo Census Metropolitan Area. The 2021 Census net undercount rate is not yet available.

Table 3: Persons per Unit Assumptions

	Singles/ Semis	Towns/ Multiples	Apartments
PPU	3.170	2.369	1.726

Source: Waterloo Development Charges Background Study, Watson & Associates, April 2019.

4.2 Population-Related Jobs

Population-related jobs within the exiting DGA as of 2021 are assumed to be 14% of the estimated population; a rate carried forward from the 2016 Census since the 2021 data has not yet been released.

Population-related jobs include the following jobs:

- Retail Trade (NAICS Code 44-45),
- Educational Services (NAICS Code 61),
- Arts, Entertainment and Recreation (NAICS Code 71), and,
- Worked at Home jobs.

4.3 Calculate DGA Density

To calculate the DGA density, the combined total of population and population-related jobs is divided by the total developable Community Area. Density is calculated by each lower-tier municipality and for Waterloo Region. Conducting the calculation in this way illustrates the potential for lower-tier municipalities to vary in density while still contributing overall to achieve an appropriate region-wide density.

Results of the density analysis are found in Attachment 1.

Attachments:

- Attachment 1: Waterloo Region's Designated Greenfield Area Density Analysis Summary Tables
- Attachment 2: Estimated Built and Planned Unit Supply
- Attachment 3: Estimated Vacant Land Unit Supply
- Attachment 4: Waterloo Region's Designated Greenfield Area Mapping

Waterloo Region Designated Greenfield Area Density Analysis

Built, Planned and Vacant Designated Greenfield Area Densities

Attachment 1

Density of Built Designated Greenfield Areas - as of 2021 Census

Municipality	Built DGA Developable Area	Community Area										Population-Related Employment	Total People & Jobs	Density (People & Jobs/ hectare)
		Unit Counts by Dwelling Type				Total Units	Population by Dwelling Type				Total Population			
	Hectares	Singles	Semis	Towns	Apartments		Singles	Semis	Towns	Apartments				
Cambridge	267.3	2,657	44	1,281	490	4,472	8,616	143	3,104	865	12,729	1,727	14,455	54.1
Kitchener	717.1	6,783	322	2,948	1,215	11,268	21,997	1,044	7,144	2,145	32,331	4,386	36,716	51.2
North Dumfries	28.7	287	38	92	-	417	931	123	223	-	1,277	173	1,450	50.6
Waterloo	279.1	2,255	110	558	286	3,209	7,313	357	1,352	505	9,527	1,292	10,819	38.8
Wellesley	37.1	335	72	-	-	407	1,086	233	-	-	1,320	179	1,499	40.4
Wilmot	124.8	1,195	52	67	-	1,314	3,875	169	162	-	4,206	571	4,777	38.3
Woolwich	184.3	1,651	72	340	-	2,063	5,354	233	824	-	6,412	870	7,281	39.5
TOTAL	**1638.4**	**15,163**	**710**	**5,286**	**1,991**	**23,150**	**49,172**	**2,302**	**12,811**	**3,516**	**67,801**	**9,197**	**76,998**	**47.0**

Density of Planned Designated Greenfield Areas

Municipality	Planned DGA Developable Area	Community Area										Population-Related Employment	Total People & Jobs	Density (People & Jobs/ hectare)
		Unit Counts by Dwelling Type				Total Units	Population by Dwelling Type				Total Population			
	Hectares	Singles	Semis	Towns	Apartments		Singles	Semis	Towns	Apartments				
Cambridge	239.6	1,987	20	2,745	2,134	6,885	6,444	65	6,651	3,767	16,927	2,296	19,223	80.2
Kitchener	565.6	3,872	66	6,172	2,666	12,775	12,555	214	14,957	4,706	32,432	4,399	36,831	65.1
North Dumfries	106.2	1,222	-	704	-	1,926	3,963	-	1,705	-	5,668	769	6,437	60.6
Waterloo	112.0	972	34	1,208	689	2,902	3,151	110	2,926	1,216	7,403	1,004	8,407	75.1
Wellesley	0.8	-	16	-	-	16	-	52	-	-	52	7	59	71.4
Wilmot	55.8	786	-	234	28	1,048	2,549	-	567	49	3,165	429	3,595	64.5
Woolwich	217.8	2,382	86	1,835	627	4,929	7,723	279	4,447	1,106	13,555	1,839	15,394	70.7
TOTAL	**1297.8**	**11,220**	**222**	**12,896**	**6,142**	**30,480**	**36,384**	**720**	**31,253**	**10,845**	**79,202**	**10,744**	**89,946**	**69.3**

Density of Vacant Designated Greenfield Areas

Municipality	Vacant DGA Developable Area	Community Area										Population-Related Employment	Total People & Jobs	Density (People & Jobs/ hectare)
		Unit Counts by Dwelling Type				Total Units	Population by Dwelling Type				Total Population			
	Hectares	Singles	Semis	Towns	Apartments		Singles	Semis	Towns	Apartments				
Cambridge	214.4	1,655	-	1,847	243	3,744	5,365	-	4,475	428	10,269	1,393	11,662	54.4
Kitchener	402.3	2,689	-	4,251	3,036	9,976	8,722	-	10,302	5,360	24,384	3,308	27,692	68.8
North Dumfries	9.7	85	-	58	-	143	275	-	141	-	415	56	472	48.7
Waterloo	121.5	646	-	1,490	395	2,531	2,094	-	3,612	697	6,403	869	7,272	59.8
Wellesley	10.7	134	-	-	-	134	434	-	-	-	434	59	493	46.0
Wilmot	25.0	259	-	87	-	346	840	-	210	-	1,050	142	1,192	47.6
Woolwich	88.3	470	-	708	38	1,216	1,525	-	1,717	66	3,309	449	3,757	42.6
TOTAL	**872.0**	**5,938**	**-**	**8,441**	**3,711**	**18,090**	**19,255**	**-**	**20,458**	**6,552**	**46,265**	**6,276**	**52,541**	**60.3**

Density of Planned and Vacant Greenfields

Municipality	Planned & Vacant DGA Developable Area	Community Area										Population-Related Employment	Total People & Jobs	Density (People & Jobs/ hectare)
		Unit Counts by Dwelling Type				Total Units	Population by Dwelling Type				Total Population			
	Hectares	Singles	Semis	Towns	Apartments		Singles	Semis	Towns	Apartments				
Cambridge	454.0	3,642	20	4,591	2,376	10,629	11,809	65	11,127	4,195	27,196	3,689	30,885	68.0
Kitchener	967.9	6,561	66	10,423	5,701	22,751	21,277	214	25,259	10,067	56,816	7,707	64,524	66.7
North Dumfries	115.9	1,307	-	762	-	2,068	4,238	-	1,846	-	6,083	825	6,908	59.6
Waterloo	233.5	1,617	34	2,698	1,083	5,433	5,245	110	6,538	1,913	13,807	1,873	15,680	67.2
Wellesley	11.5	134	16	-	-	150	434	52	-	-	486	66	552	47.9
Wilmot	80.8	1,045	-	321	28	1,394	3,389	-	777	49	4,215	572	4,787	59.2
Woolwich	306.1	2,852	86	2,543	664	6,145	9,248	279	6,164	1,173	16,864	2,288	19,151	62.6
TOTAL	**2169.7**	**17,157**	**222**	**21,337**	**9,853**	**48,569**	**55,640**	**720**	**51,711**	**17,397**	**125,467**	**17,020**	**142,487**	**65.7**

Total Designated Greenfield Area Density

Municipality	Total DGA Developable Area	Community Area										Population-Related Employment	Total People & Jobs	Density (People & Jobs/ hectare)
		Unit Counts by Dwelling Type				Total Units	Population by Dwelling Type				Total Population			
	Hectares	Singles	Semis	Towns	Apartments		Singles	Semis	Towns	Apartments				
Cambridge	721.3	6,299	64	5,872	2,866	15,101	20,425	208	14,231	5,061	39,925	5,416	45,341	62.9
Kitchener	1685.0	13,344	388	13,371	6,916	34,019	43,273	1,258	32,403	12,212	89,147	12,093	101,240	60.1
North Dumfries	144.6	1,594	38	854	-	2,485	5,168	123	2,069	-	7,360	998	8,359	57.8
Waterloo	512.6	3,872	144	3,256	1,369	8,642	12,558	467	7,891	2,418	23,333	3,165	26,499	51.7
Wellesley	48.7	469	88	-	-	557	1,521	285	-	-	1,806	245	2,051	42.1
Wilmot	205.6	2,240	52	388	28	2,708	7,264	169	939	49	8,421	1,142	9,564	46.5
Woolwich	490.4	4,503	158	2,883	664	8,208	14,602	512	6,988	1,173	23,275	3,157	26,433	53.9
TOTAL	**3808.2**	**32,320**	**932**	**26,623**	**11,844**	**71,719**	**104,812**	**3,022**	**64,521**	**20,912**	**193,268**	**26,217**	**219,485**	**57.6**

Notes

1. PPU based on Region of Waterloo Development Charges Background Study, Watson & Associates, April 2019
2. A 2.3% percent undercount was applied to the total population - based on 2016 Census Kitchener-Cambridge-Waterloo CMA
3. Population-related jobs (including worked at home) were calculated based on 2016 Census Data for Waterloo Region

For Discussion Purposes Only

Date: May 24, 2022

Prepared by:

MGP Malone Given Parsons.

Waterloo Region Designated Greenfield Area Density Analysis

Built and Planned Unit Supply

Attachment 2

Municipality	Map ID	Application #	Status as of May 2021	Singles	Semis	Towns	Apts	Total Units	Notes	Location	Source
Cambridge	1		Built			13		**13**			Google Earth, Parcels, Geowarehouse
Cambridge	2		Built	630		78		**708**			Google Earth, Parcels
Cambridge	3	455 Guelph Ave	Built			22		**22**			Cambridge Subdivision Activity Report, Dec 2018, Google Street View
Cambridge	4		Built			63		**63**			Google Earth, Parcels
Cambridge	5		Built	72				**72**			Google Earth, Parcels
Cambridge	6		Built			99	39	**138**			Google Earth, Parcels, Geowarehouse
Cambridge	7	350 Fisher Mills Rd	Planned			64	86	**150**	Coho Village Phase 2 & 3		Cambridge Subdivision Activity Report, Dec 2018
Cambridge	7	350 Fisher Mills Rd	Built			40		**40**	Coho Village Phase 1		Cambridge Subdivision Activity Report, Dec 2018. Coho Village Townhouse, Condos.ca
Cambridge	8	30T-16101	Planned			373	373	**745**	Unit count is a placeholder for Towns and Apts. Will range between 627 and 863 for towns/apts. Split 50-50.		Cambridge Subdivision Activity Report, Dec 2018
Cambridge	9a	58M-604	Planned	16		77		**93**	30T-12103		Waterloo Region Report: PDL-CPL-18-08
Cambridge	9b		Built	169				**169**			Google Earth, Geowarehouse
Cambridge	10	30T-12103	Planned	597		140	81	**818**	9 & 12 as part of 30T-12103. estimated 1662 units total		Cambridge Subdivision Activity Report, Dec 2018
Cambridge	11		Built	12				**12**			Google Earth, Parcels
Cambridge	12a	58M-617	Built	253		232	41	**526**	30T-12103		Cambridge Subdivision Activity Report, Dec 2018
Cambridge	12b		Planned			50		**50**			Google Earth, Geowarehouse
Cambridge	13	30T-12104	Planned	250		250	271	**771**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	14	58M-582	Built	304		270	190	**764**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	15	RP 1425 Block 131	Planned			23		**23**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	16		Built	35				**35**			Google Earth, Parcels
Cambridge	17		Built	151	44	123		**318**			Google Earth, Parcels
Cambridge	18		Built	13				**13**			Google Earth, Parcels
Cambridge	19	30T-16105	Planned	96				**96**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	20		Built	20				**20**			Google Earth, Parcels
Cambridge	21	30T-16103	Planned	239		239		**478**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	22	30T-16104	Planned	216		300	340	**856**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	23a	58M-603	Built	78				**78**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	23b	58M-609	Built			108		**108**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	23c	30T-13102	Planned	89				**89**			Geowarehouse
Cambridge	24		Built	199		4		**203**			Google Earth, Parcels
Cambridge	25		Built	26				**26**			Google Earth, Geowarehouse
Cambridge	26		Built					**-**	Non-residential		
Cambridge	27		Built	95		6		**101**			Google Earth, Parcels, Geowarehouse
Cambridge	28		Built	24				**24**			Google Earth, Geowarehouse
Cambridge	29		Built				136	**136**	Confirmed 68 Units for 180 Greenbrier Rd. Assumed same units count for 150 Greenbrier	150 and 180 Greenbrier Rd	Cambridge Rpeort # 17-039, April 2017
Cambridge	30	Formerly 30T-88039	Planned			85		**85**	165 Greenbrier Rd		Cambridge Subdivision Activity Report, Dec 2018
Cambridge	31							**-**	Vacant Site		
Cambridge	32		Built			8	48	**56**	16 units per building	10, 20 and 40 Cheese Factory Rd	Google Earth, Parcels, condos.ca

Cambridge	33		Built	55				**55**			Google Earth, Parcels
Cambridge	34		Built	73		57		**130**			Google Earth, Parcels
Cambridge	35		Built	86				**86**			Google Earth, Parcels
Cambridge	36		Built			47		**47**			Geowarehouse
Cambridge	37		Planned				367	**367**		0 Main St	Planning Justification Report, July 202
Cambridge	38	30T-20104	Planned			71	132	**203**			Draft Plan, August 2020
Cambridge	39		Built	65				**65**	approx 15 built post-2016		Google Earth, Parcels
Cambridge	40		Built			37		**37**			Geowarehouse
Cambridge	41		Built	234		74	36	**344**	Apts - 280 Wesley Blvd.		Google Earth, Parcels, Geowarehouse, Apt units as per Property Manager
Cambridge	42		Planned	32				**32**			Geowarehouse
Cambridge	43	30T-13101	Planned	123		80		**203**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	44	30T-13103	Planned	52		93	107	**252**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	45							**-**	vacant multiple residential site. Units calculated in "Vacant Land Units"		Cambridge Subdivision Activity Report, Dec 2018
Cambridge	46		Built	53				**53**			Google Earth, Parcel data
Cambridge	47	30T-07102	Planned	165		165		**330**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	48		Built	10				**10**			Google Earth, Parcel data
Cambridge	49	30T-14102	Planned	112	20	134	140	**406**			Cambridge Subdivision Activity Report, Dec 2018
Cambridge	50		Planned			9		**9**	only portion within DGA	825-875 Main St & 0 Sparrov Ave	Concept Site Plan, June 2017
Cambridge	51	Taylor Lands	Planned			592	237	**829**		Recommended Employment Conversion	Draft Plan Oct 2021
Subtotal Cambridge			**Built**	**2,657**	**44**	**1,281**	**490**	**4,472**			
			Planned	**1,987**	**20**	**2,745**	**2,134**	**6,885**			
Waterloo	1		Built	9				**9**			Google Earth, Parcel data
Waterloo	2		Built	26				**26**			Google Earth, Parcel data, Geowarehouse
Waterloo	3	30T-90039	Planned	11				**11**	draft plan & unit count unavailable. Estimated singles on 0.85 ha of land. (12 .5 units/gross ha)		N/A
Waterloo	4	30CDM-17410	Planned	24				**24**		675 Conservation Dr	Draft Plan, May 2020
Waterloo	5	30T-17402	Planned	9				**9**	7 to 11 units.	675 Conservation Dr	Draft Plan, May 2020
Waterloo	6	30CDM-17409	Planned	49				**49**			Draft Plan, Juley 2020
Waterloo	7	30T-17401	Planned	189		321	226	**735**	Singles 153- 224, multi res: 279 to 363, multi res/mixed use 131 to 320	Beaver Creek & Conservation Dr	Draft Plan, July 2020
Waterloo	8	30T-16402	Planned	236		294		**530**	192-279 Singles, 76 Street Towns, 163-273 multiple residential. Assumed multi res as towns	556-576 Conservation Dr	Draft Plan, June 2019
Waterloo	9	30T-17403	Planned	71		110	84	**265**	54-88 singles, 54 street towns,35 -76 multi-res, 48-120 multi res/mixed use (assumed as apts)	Roy Schmidt Rd and Conservation Dr	Draft Plan, June 2020
Waterloo	10		Built	146		10		**156**			Google Earth, Parcel data
Waterloo	11		Built	106				**106**			Google Earth, Parcel data
Waterloo	12							**-**	Green Acre RV Park - no units - assume redevelopment - calculated in Vacant tab		https://www.greenacrepark.com/
Waterloo	13		Built	42				**42**			Google Earth, Parcel data, Geowarehouse
Waterloo	14		Built	186	4	36		**226**			Google Earth, Parcel data
Waterloo	15		Built	21				**21**			Google Earth, Parcel data
Waterloo	16a		Built	13		13	89	**115**	Reflections at Laurelwood - apts	776 Laurelwood Dr	Google Earth, Parcel data, Geowarehouse, https://www.waterloocondominiums.ca/776-778-laurelwood-drive-reflections.php
Waterloo	16b		Built				89	**89**	Reflections at Laurelwood - apts	778 Laurelwood Dr	https://www.waterloocondominiums.ca/776-778-laurelwood-drive-reflections.php
Waterloo	17		Built		4			**4**			Google Earth, Parcel data

Waterloo	18		Built	25				**25**			Google Earth, Parcel data
Waterloo	19	58M-318	Planned			98		**98**	draft plan & Unit count unavailable. Estimated units on 2.8 ha of land. (Medium High Density). Assumed stacked towns @ 35 units/gross ha		N/A
Waterloo	20a		Built	68				**68**			Google Earth, Parcel data
Waterloo	20b		Built	708	46	76		**830**			Google Earth, Geowarehouse, Concept Plan for Multi-Res Blocks, April 2021
Waterloo	20c		Planned			64		**64**			Concept Plan for Multi-Res Blocks, April 2021
Waterloo	21	30T-97024	Planned	98				**98**	confirm units		Waterloo Region Planning & Works Committee Agenda, Report P-13-001, Jan 2013
Waterloo	22	30T-97024	Planned	90				**90**	450 Wilmot		Waterloo Region Planning & Works Committee Agenda, Report P-13-001, Jan 2013
Waterloo	23	30T-05403	Planned	58	34	16		**108**			Waterloo Region Planning & Works Committee Agenda, Report P-13-001, Jan 2013
Waterloo	24	30T-05402/30T-05403	Planned	85				**85**			Geowarehouse
Waterloo	25		Planned	34		104		**138**			Concept Plan for Multi-Res Blocks, April 2021
Waterloo	26		Built	154				**154**			Google Earth, Parcel data
Waterloo	27a		Built	82	32	69		**183**			Google Earth, Parcel data, Geowarehouse
Waterloo	27b		Built		20			**20**			Google Earth, Parcel data, Geowarehouse
Waterloo	28							**-**	non-res - no units		
Waterloo	29							**-**	non-res - no units		
Waterloo	30a		Built				100	**100**		7 Westhill Dr.	Waterloo Region Report: PDL-CPL-15-47
Waterloo	30b		Built					**-**	The Westhill Retirement Residence. Units not included		
Waterloo	31	30T-87004	Planned			52	283	**335**	12 West Hill Dr and 635 Erb St		Final Planning Justification Report, Oct 2018
Waterloo	32		Built	215				**215**			Google Earth, Parcel data
Waterloo	33							**-**			
Waterloo	34a	30T-05401	Built	138			8	**146**			Draft Plan, May 2010
Waterloo	34b		Built	2				**2**			Google Earth, Parcel data
Waterloo	34c		Planned			47		**47**			Google Street View
Waterloo	35a		Built	67		15		**82**			Google Earth, Parcel data, Geowarehouse
Waterloo	35b		Planned			15		**15**	estimated portion of towns		Google Earth, Geowarehouse
Waterloo	36		Built			39		**39**			Google Earth, Parcel data, Geowarehouse
Waterloo	37		Built			75		**75**			Geowarehouse
Waterloo	38a		Built	80		48		**128**			Google Earth, Parcel data, Geowarehouse
Waterloo	38b		Built	167	4	177		**348**			Google Earth, Parcel data, Geowarehouse
Waterloo	38c		Planned				96	**96**			https://www.talkcondo.com/waterloo/trailside-at-grey-silo-gate-condos/
Waterloo	39	30T-20401	Planned	19		87		**106**		28 Westhill Dr	City of Waterloo Staff Report, IPPW2021-034
Subtotal City of Waterloo			**Built**	**2,255**	**110**	**558**	**286**	**3,209**			
			Planned	**972**	**34**	**1,208**	**689**	**2,902**			
Kitchener	1		Built	79		9		**88**			Google Earth, Parcel data
Kitchener	2a		Built	26				**26**			Google Earth, Parcel data, Geowarehouse
Kitchener	2b		Planned	48				**48**			
Kitchener	3a		Built	72		15		**87**			Google Earth, Parcel data
Kitchener	3b		Built	103		14		**117**			Google Earth, Parcel data
Kitchener	4							**-**	non- res - no units		
Kitchener	5	30T-02206	Planned			514		**514**	Kolb Creek Subdivision. 514 multi-res Units.		Kitchener Growth Management Plan, Fall 2019-Fall 2021, Oct 2019
Kitchener	6	30T-91005	Planned	181	20	125		**326**			Staff Report CSD-16-013
Kitchener	7		Planned	5				**5**	part lots included in #6		Geowarehouse
Kitchener	8		Planned					**-**	Green space. Assumed no units		

Kitchener	9		Built				76	**76**		1505 Ottawa St N	StatsCan, Pcensus
Kitchener	10		Built	742	6	251		**999**			Google Earth, Parcel data, Geowarehouse
Kitchener	11a	58M-368?	Built	45				**45**			Google Earth, Parcel data, Geowarehouse
Kitchener	11b		Planned	14				**14**			Google Earth, Parcel data, Geowarehouse
Kitchener	12a		Built	225				**225**			Google Earth, Parcel data
Kitchener	12b		Built	79				**79**			Google Earth, Parcel data
Kitchener	13	30T-10202	Planned	92		75		**167**			Planning Justification Report, March 2020
Kitchener	14	58M-560 Ph1	Built	17				**17**			Google Earth, Planning Justification Report, March 2020
Kitchener		58M-560 Ph1	Built	3				**3**			Google Earth, Planning Justification Report, March 2020
Kitchener		58M-575 Ph2	Built			28		**28**			Google Earth, Planning Justification Report, March 2020
Kitchener		58M-575 Ph2	Built	75		132		**207**			Google Earth, Planning Justification Report, March 2020, Geowarehouse
Kitchener		58M-597 Ph3	Built	104		80		**184**			Planning Justification Report, March 2020, Geowarehouse
Kitchener		58M-597 Ph3	Planned	33				**33**			Planning Justification Report, March 2020, Geowarehouse
Kitchener		58M-597 Ph3	Planned			36	316	**352**	Block 14 Draft Approved for 162 multiple res units. Proposed development for 352 units (316 apts and 36 towns)		
Kitchener		58M-605 Ph4	Planned	91				**91**			Planning Justification Report, March 2020, Geowarehouse
Kitchener		58M-605 Ph4	Built	27				**27**			Planning Justification Report, March 2020, Geowarehouse
Kitchener	15		Built	3	42	64		**109**			Google Earth, Parcel data
Kitchener	16	30CDM-19204						**-**	School block built and future development plans. Classified as vacant to generate unit count		Staff Report DFD-19-188, Aug 2019
Kitchener	17		Built	511	50	70		**631**			Google Earth, Parcel data, Geowarehouse
Kitchener	18		Built	23				**23**			Geowarehouse
Kitchener	19/20	30T-88045	Planned	14				**14**	Pearl Valley Dev. Corp		Draft Plan, 1990
Kitchener	21		Built	50	6			**56**			Google Earth, Parcel data, Geowarehouse
Kitchener	22a		Built	150				**150**			Google Earth, Parcel data
Kitchener	22b		Planned	18				**18**			Geowarehouse
Kitchener	22c		Built	38				**38**			Geowarehouse
Kitchener	23							**-**	non-res no units		
Kitchener	24		Built	243	14	66		**323**			Google Earth, Parcel data
Kitchener	25		Built	21				**21**			Google Earth, Parcel data
Kitchener	26		Built	81		72		**153**			Google Earth, Parcel data
Kitchener	27							**-**	non-res no units		
Kitchener	28		Built	74		116		**190**			Google Earth, Parcel data, Geowarehouse
Kitchener	29a		Built				101	**101**		1460 Highland Rd	Kitchener Staff report, DSD-2021-157, Aug 2021
Kitchener	29b	30T-10218	Built				172	**172**	344 Luxury apartment rentals. Assumed equal units per building	Highland Square	Kitchener Staff report, DSD-2021-157, Aug 2021
Kitchener	29c		Planned				172	**172**		Highland Square	Kitchener Staff report, DSD-2021-157, Aug 2021
Kitchener	30	30T-08204	Planned	421		419		**840**	321 -521 singles, 405-432 multiple res units assumed as towns		Waterloo Region Committee of the Whole Addendum Agenda, April 2020
Kitchener	31	30T-07201	Planned	125				**125**			Waterloo Region Interim Residential Plan of Subdivision Inventory, 2008
Kitchener	32		Built			64		**64**			Geowarehouse
Kitchener	33		Built				203	**203**			Geowarehouse
Kitchener	34		Built	15				**15**			Google Earth, Parcel data
Kitchener	35a		Built	342	22	35		**399**	79 total Condo Towns		Google Earth, Parcel data, Geowarehouse
Kitchener	35b		Built			44		**44**			Google Earth, Parcel data, Geowarehouse
Kitchener	36	30T-18201	Planned	779		903	370	**2,051**	597 to 960 singles, 675 to 1130 towns/MD, 239 to 500 Mixed Use blocks. (MD assumed as towns, Mixed Use units assumed as apts)		Planning Justification Addendum Report, Dec 2019
Kitchener	37	30T-18202	Planned	190				**190**	145 to 235 singles.		Planning Justification Addendum Report, Dec 2019

Kitchener	38	30T-14201	Planned	210		348	197	**756**	105-165 singles/semis, 89-212 singles/semis/towns (split 50-50 singles/towns), 74 street towns, 106-292 multiples, 68-326 mixed use. (Multiples assumed as towns. Mixed use assumed as apts)	OMB File No: PL171484 OBM Case No: PL171483	LPAT Case No. PL 171483
Kitchener	39	30T-96005	Planned			131		**131**	unknown protion of units in DGA. 2.9 ha MD.		Estimated units based on OP permissions. Assumed Stacked Towns @ 70 units/net ha
Kitchener	40a	30CDM-15206	Built				46	**46**		175 Commonwealth St	Assumed same units as 155 Commonwealth St
Kitchener	40b		Planned				46	**46**		195 Commonwealth st	Assumed same units as 155 Commonwealth St
Kitchener	41	58M-307	Planned					**-**	Zoned C-2. Neighbourhood Commerical. No res units		
Kitchener	42		Built				46	**46**		155 Commonwealth St	Condos.ca
Kitchener	43		Built			24		**24**		231 Becker ST	Condos.ca
Kitchener	44		Built	56	56	8		**120**			Google Earth, Parcel data
Kitchener	45		Built	220	4			**224**			Google Earth, Parcel data
Kitchener	46	30T-08206	Planned	255	46	132		**433**			Staff Report CSD-14-051, June 2014
Kitchener	47	30T-09201	Planned	247		1,046		**1,293**			Staff Report CSD-14-05, June 2014
Kitchener	48	30T-89020						**-**	Future Staging. Assumed as vacant		Subdivision Development Map, January 2022
Kitchener	49a		Built	19				**19**			Google Earth, Parcel data
Kitchener	49b	Mattamy (Westmount) Ltd	Built	320		91		**411**			Google Earth, Parcel data
Kitchener	50a		Built	291		119		**410**			Google Earth, Parcel data, Geowarehouse
Kitchener	50b		Built	8		23	305	**336**			Google Earth, Parcel data, Geowarehouse
Kitchener	51a		Planned	9				**9**			Google Earth, Parcel data, Geowarehouse
Kitchener	51b		Built	49				**49**			Google Earth, Parcel data, Geowarehouse
Kitchener	52		Built	199		82		**281**			Google Earth, Parcel data
Kitchener	53a	30T-01201/58M-	Planned	39		170		**209**			Google Earth, Parcel data, Geowarehouse, Kitchener Interactive Map
Kitchener	53b		Built	12				**12**			Google Earth, Parcel data, Geowarehouse, Kitchener Interactive Map
Kitchener	54		Built	504	108	337	266	**1,215**			Google Earth, Parcel data, Geowarehouse
Kitchener	55	30T-07205	Planned	256		744		**1,000**	Singles/Semis/Towns 485-538 (Split 50-50 singles/towns), 476 to 500 towns and multiple res units	under construction	Kitchener Staff Report, DSD-18-021, May 2018
Kitchener	56	30T-16201	Planned	124		114	228	**466**			Planning Justification Report, Sept 2016
Kitchener	57a	30T-98201?	Planned	55		195		**250**			Google Earth, Geowarehouse
Kitchener	57b		Built	94		30		**124**			
Kitchener	58		Built	105		79		**184**			Google Earth, Parcel data
Kitchener	59		Built	162		97		**259**			Google Earth, Parcel data
Kitchener	60		Built			41		**41**			Geowarehouse
Kitchener	61		Built			56		**56**			Geowarehouse
Kitchener	62a		Built			36		**36**			Geowarehouse
Kitchener	62b		Built	50		93		**143**			Google Earth, Parcel data, Geowarehouse
Kitchener	63	58M-462	Planned					**-**	Proposed Commercial site - no units		Kitchener Report, DTS-09-007, Jan 2009. Design Brief within report
Kitchener	64		Built	17		24		**41**			Google Earth, Parcel data
Kitchener	65	30T-88006	Planned				200	**200**	east side vacant - Plan WITHDRAWN. 200 Apt units on west side as per MHBC.		Waterloo Region Interim Residential Plan of Subdivision Inventory, 2008
Kitchener	66	30T-87033						**-**	Plan WITHDRAWN - VACANT		Waterloo Region Interim Residential Plan of Subdivision Inventory, 2008
Kitchener	67	58M-571	Planned	12				**12**			Kitchener Report DTA-10-002, Feb 2010, Geowarehouse
Kitchener	68a	30T-18208	Planned	149		37		**186**			Google Earth, Parcel data, Geowarehouse
Kitchener	68b		Built	86		37		**123**			Google Earth, Parcel data, Geowarehouse

Kitchener	69		Built	98				**98**	30T-04204		Google Earth, Parcel data
Kitchener	70a	58M-630	Planned	16		43		**59**	plus 19-66 multiple res assumed as towns + 4-6 Res Units. (44-105 units total)	30T-12203	Kitchener Staff Report, CSD-16-040, May 2016, Geowarehouse
Kitchener	70b		Built	13				**13**			
Kitchener	71a	58M-627	Built			57		**57**		30T-12202	Geowarehouse
Kitchener	71b		Planned	5		24		**29**	includes part lot singles overlapping with #72		Geowarehouse
Kitchener	72		Built	138				**138**	30T-04204		Google Earth, Parcel data
Kitchener	73	30T-04204 Ph4 Block 1	Planned			42		**42**	30T-04204		Kitchener Report DTS-07-097, June 2007
Kitchener	74		Built	80		36		**116**	30T-04204		Google Earth, Parcel data
Kitchener	75		Built	135		190		**325**			Google Earth, Parcel data, Geowarehouse
Kitchener	76a	30T-08203	Planned			147		**147**	Stage 3 60-80 multi-res units.		Draft Plan, Aug 2017, Google Earth, Geowarehouse
Kitchener	75b	30T-08203	Built	120		42		**162**			Draft Plan, Aug 2017, Google Earth, Geowarehouse
Kitchener	77	30T-08203 Stage 4 to 10	Planned	340		822		**1,162**	289-391 residential. 822 multi-res	58M-672, 671, 670	Waterloo Region DSB Notice and Agenda, Feb 2020, Draft Plan, Aug 2017
Kitchener	78a		Built	62				**62**			Google Earth, Parcel data
Kitchener	78b		Built	84	12	40		**136**			Google Earth, Parcel data, Geowarehouse
Kitchener	78c		Planned	54		21		**75**			Geowarehouse
Kitchener	79		Built	98	2			**100**			Google Earth, Parcel data, Geowarehouse
Kitchener	80		Built			72		**72**			Google Earth, Parcel data
Kitchener	81		Built			6		**6**			Google Earth, Parcel data
Kitchener	82		Planned					**-**	Place of Worship - no units		Geowarehouse
Kitchener	83		Built			3		**3**			Google Earth, Parcel data
Kitchener	84a		Built	255				**255**			Google Earth, Parcel data
Kitchener	84b		Built	165				**165**			Google Earth, Parcel data, Geowarehouse
Kitchener	85		Built	38		83		**121**			Google Earth, Parcel data, Geowarehouse
Kitchener	86a		Built	49				**49**			Google Earth, Parcel data, Geowarehouse
Kitchener	87	30T-07202	Planned			46		**46**	33-58 multi-res units.		Draft Plan, Sept 2014
Kitchener	88	30T-87036	Under Construction					**-**	Highview Residences - Dementia Care. Units not included		
Kitchener	89	30T-13203 (Part Stage 1, Stage 3)	Planned	90		40		**130**			Staff Report CSD-15-050, May 2015, Geowarehouse
Kitchener	89		Built	93		40		**133**			Staff Report CSD-15-050, May 2015, Geowarehouse
Kitchener	90		Built			142		**142**		160 Rochefort St	Geowarehouse, Street View April 2021
Kitchener	91		Planned					**-**	commercial development - no units		
Kitchener	92		Planned				261	**261**		1673 Huron Rd	Planning Justification Report
Kitchener	93		Built	15				**15**	Large lots, no plans for redevelopment		Google Earth
Kitchener	94	Lackner Ridge Condos	Planned				358	**358**			https://www.gta-homes.com/kitchener-condos/lackner-ridge/
Kitchener	95		Planned				518	**518**	3 10-storey apt. buildings with 418 units. One 6-10 storey MU Building (office/retail and residential). Estimated 100 units.		Staff Report - Dec 2020
Subtotal Kitchener			**Built**	**6,783**	**322**	**2,948**	**1,215**	**11,268**			
			Planned	**3,872**	**66**	**6,172**	**2,666**	**12,775**			
Woolwich	1a	30T-07703	Planned	541		185		**726**	Northview Plan - Singles/semis combined	Elmira	Waterloo Region Interim Residential Plan of Subdivision Inventory, 2008
Woolwich	1b		Built	61		16		**77**	doesn't include assisted liviing units - 75 McGuire Lane		Geowarehouse
Woolwich	2a	30T-07702	Planned	265		86		**351**	Riverbend Plan - Singles/semis combined	Elmira	Waterloo Region Interim Residential Plan of Subdivision Inventory, 2008
Woolwich	2b		Built	185		64		**249**			Geowarehouse

Woolwich	3	30T-21702 - Activa Holdings	Planned	374		359		**733**	337 to 410 singles/325 to 393 towns.	Elmira	Draft Plan, March 2021
Woolwich	4		Built	165		23		**188**		Elmira	Google Earth, Parcel data
Woolwich	5		Built	60				**60**		Elmira	Google Earth, Parcel data
Woolwich	6		Built	2		8		**10**		Elmira	Google Earth, Parcel data
Woolwich	7a	30T-17701 - Birdland Developments	Planned	185	50	81	163	**479**	176-194 singles, 50 semis, 68-94 towns, 150-175 apts.	Elmira	Waterloo Region Report: PDL-CPL-18-08
Woolwich	7b		Built	84	24	33		**141**			Geowarehouse
Woolwich	8							**-**	non-residential. No units	Elmira	
Woolwich	9		Built	6	16			**22**		St. Jacob's	Google Earth, Parcel data
Woolwich	10	30T-12701	Planned	88	36	25		**149**	Old Scout Place	St. Jacob's	Waterloo Region Report: PDL-CPL-16-03
Woolwich	11a	30T-11701	Planned	310		122	464	**896**	383-484 singles, 124-164 towns/MD, 424-504 HD/Mixed Use. (excludes built units)	Breslau	Draft Plan, April 2016
Woolwich	11b		Built	124		22		**146**			
Woolwich	12		Built	433	32	37		**502**		Breslau	Google Earth, Parcel data, Geowarehouse
Woolwich	13	30T-89006	Planned	420		781		**1,201**	Singles 408 units plus 9 to 14, Street towns 117-175, multiple residential 370-900	Breslau	Draft Plan, Sept 2021
Woolwich	14		Built	228		29		**257**		Breslau	Google Earth, Parcel data
Woolwich	15		Built	186		65		**251**		Breslau	Google Earth, Parcel data
Woolwich	16a	30T-13701	Planned	200		41		**241**	Phase 2, 3 and 4 (excluding Block 53) 168-232 Singles, 31-51 Towns	Breslau	Draft Plan, Jan 2022
Woolwich	16b	30T-13701	Built	117		43		**160**	Phase 1 Built (107-148 Singles, 26-43 Towns)	Breslau	Google Earth, Draft Plan, Jan 2022
Woolwich	16c	30T-13701	Planned			155		**155**	Phase 3 - Block 53	Breslau	Draft Plan, Jan 2022
Subtotal Woolwich			**Built**	**1,651**	**72**	**340**	**-**	**2,063**			
			Planned	**2,382**	**86**	**1,835**	**627**	**4,929**			
Wellesley	1		Built	3				**3**		Wellesley	Google Earth, Parcel data
Wellesley	2		Built		44			**44**		Wellesley	Google Earth, Parcel data
Wellesley	3		Built	1				**1**		Wellesley	Google Earth, Parcel data
Wellesley	4		Built	156				**156**		Wellesley	Google Earth, Parcel data
Wellesley	5		Built	34				**34**		Wellesley	Google Earth, Geowarehouse, Google Street View
Wellesley	6		Planned		16			**16**		Wellesley	Google Earth, Geowarehouse
Wellesley	6		Built		2			**2**		Wellesley	Google Earth, Geowarehouse
Wellesley	7		Built	100	8			**108**		Wellesley	Google Earth, Parcel data, Geowarehouse
Wellesley	8		Built	41	18			**59**		Wellesley	Google Earth, Parcel data, Geowarehouse
Subtotal Wellesley			**Built**	**335**	**72**	**-**	**-**	**407**			
			Planned	**-**	**16**	**-**	**-**	**16**			
Wilmot	1		Built	423				**423**		Baden	Google Earth, Parcel data
Wilmot	2		Built	109		33		**142**		New Hamburg	Google Earth, Parcel data, Geowarehouse
Wilmot	3		Built	114				**114**		New Hamburg	Google Earth, Parcel data
Wilmot	4		Built	66	52			**118**		New Hamburg	Google Earth, Parcel data
Wilmot	5	Astor Crescent & Forrest Ave East	Planned				12	**12**		New Hamburg	https://developmentapplications.wilmot.ca/Home/Detail?Id=61c8ae80-bb13-4475-9b3c-298cead7f156
Wilmot	6		Built	74				**74**		New Hamburg	Google Earth, Parcel data
Wilmot	7		Built	63		34		**97**		New Hamburg	Google Earth, Geowarehouse
Wilmot	8	Stoencroft	Built	56				**56**		New Hamburg	Google Earth, Geowarehouse
Wilmot	9	Stoencroft	Built	231				**231**		New Hamburg	Google Earth, Parcel data

Wilmot	10	Stoencroft	Built	56				**56**		New Hamburg	Google Earth, Geowarehouse
Wilmot	11		Planned	363				**363**	326-399 total.	Baden	Draft Plan, March 2021
Wilmot	12		Planned			22		**22**		Baden	Planning Justification Report, Dec 2020
Wilmot	13		Planned				16	**16**	32 unit apt. Partially within DGA and BUA. Assume 50-50 split	Baden	Planning Justification Report, April 2021
Wilmot	14a		Built	1				**1**		New Hamburg	Google Earth, Parcel data
Wilmot	14b		Built	2				**2**		New Hamburg	Google Earth, Parcel data
Wilmot	15		Planned	424		212		**636**	316 to 531 residential/120-304 multiple residential	New Hamburg	Draft Plan, January 2022
Subtotal Wilmot			**Built**	**1,195**	**52**	**67**	**-**	**1,314**			
			Planned	**786**	**-**	**234**	**28**	**1,048**			
North Dumfries	1	SP-01/18	Planned			61		**61**		Ayr	Summary of Residential Development in Ayr, April 2021 https://www.northdumfries.ca/en/doing-business/resources/Documents/Residential-Dev-Tracking---April2021with-spreadsheet.pdf
North Dumfries	2	30T-06301	Planned	177		59		**236**		Ayr	
North Dumfries	3	30T-20301	Planned	109		65		**174**		Ayr	
North Dumfries	4	30T-05301	Built	224	38	52		**314**		Ayr	Google Earth, Parcel data, Geowarehouse
North Dumfries	4	30T-05301	Built	4		35		**39**		Ayr	Google Earth, Geowarehouse
North Dumfries	5	30T-11301	Built	59		5		**64**		Ayr	Summary of Residential Development in Ayr, April 2021 https://www.northdumfries.ca/en/doing-business/resources/Documents/Residential-Dev-Tracking---April2021with-spreadsheet.pdf
North Dumfries	6	30T-14301	Planned	87				**87**	0 units Built-Out as of April 21 report	Ayr	
North Dumfries	7	30T-14301	Planned	210		143		**353**		Ayr	
North Dumfries	8	30T-18301	Planned	294		183		**477**		Ayr	
North Dumfries	9a	30T-21301	Planned	124		6		**130**	114 to 134 Singles, 0 to 12 mutiple residential	West of Cambridge	Planning Opinion Report, April 2021
North Dumfries	9b	30T-21302	Planned	221		187		**408**	200 to 242 singles, 52 to 77 towns, 59 t o 185 towns/apts	West of Cambridge	Planning Opinion Report, April 2021
Subtotal North Dumfries			**Built**	**287**	**38**	**92**	**-**	**417**			
			Planned	**1,222**	**-**	**704**	**-**	**1,926**			
Total - Built 2021				**15,163**	**710**	**5,286**	**1,991**	**23,150**			
Total - Planned				**11,220**	**222**	**12,896**	**6,142**	**30,480**			

Assumptions:

1. Where there was a range in unit types on the draft plan, assumed the average units.
2. Used a combination of Google Earth Imagery, Google Streetview and Geowarehouse Sales History to estimate built (occupied) units as of May 2021.
3. Where unit counts were unavailable, estimated units based on assumptions for Vacant land.
4. Other Site specific assumptions recorded within "Notes"

For Discussion Purposes Only

Date: May 24, 2022

Prepared by:

MGP Malone Given Parsons.

Waterloo Region Designated Greenfield Area Density Analysis

Estimated Vacant Land Unit Supply

Attachment 3

Municipality	Official Plan/ Secondary Plan	Land Use Designation	Hectares	Unit Estimate						Net Density	Dwelling Type Assumptions	Policy Permissions		
				Singles	Semis	Towns	Stacked / B2B	Apts	Total Units			Permitted Residential Uses	Minimum Density	Maximum Density
Cambridge		Low/Medium Density Residential	**152.6**	1,240		824	549		**2,613**	**17**	singles, street towns, Stacked/B2B	Singles, Towns and/or walk-up apartments		40 units/gross ha
Cambridge		High Density Residential	**2.4**			29	44		**73**	**60**	mid-rise	apts and mixed use development	0.5 FSI	2.0 FSI
Cambridge		Future Urban Reserve (Portion assumed as Community Area)	**1.4**			27			**27**	**40**	street towns	only existing uses or those uses permitted in all desginations.		
Cambridge		Rural Residential	**8.5**	12					**12**	**3**	Estimated singles based on # of units on other side or road.	Singles		dependent on size of lot suitable to accommodate potable water and wasterwater treatment
Cambridge		ROPA 2 - Prime Agriculture	**49.6**	403		268	178	-	**849**	**34**	singles, street towns, Stacked/B2B (Same as Prime Ag/Rural Area in Kitchener)	ROPA 2 - Uses to be Determined		
Subtotal Cambridge			**214.4**	**1,655**	**0**	**1,148**	**771**	**0**	**3,574**					
Kitchener	Kitchener OP	Low Rise Residential	**115.2**	936		622	415		**1,974**	**34**	singles, street towns, Stacked/B2B	singles, semis, street towns cluster towns, low-rise multiple dwellings		30 units/net res ha
Kitchener		Mixed Use	**9.7**			35	359		**394**	**81**	Street towns, Stacked/B2B	MD and HD res uses (high density multiple dwellings)	MD: 30 units/net res ha HD: 100 units/net res ha	MD: 200 units/net res ha HD:
Kitchener		Prime Ag and Rural Area (DGA as per Waterloo Region OP)	**199.5**	1,621		1,077	718	-	**3,416**	**34**	singles, street towns, Stacked/B2B			
Kitchener	Rosenberg Community Secondary Plan Land Use Plan	High Density Residential	**0.2**			5			**5**	**40**	street towns	HD multiple dwelling units	100 units/net ha. Min 4 Storeys	400 units/net ha
Kitchener		Low Density Residential One	**3.6**	45					**45**	**25**	Singles - Max density 25 units/net ha	singles, duplexes, semis and street towns	10 units/net ha	25 units/net ha
Kitchener		Low Density Residential Two	**6.2**	68			104	-	**172**	**55**	singles, Stacked/B2B	singles, duplexes, semis, townhouse dwellings, low-rise multiple dwellings. 3 to 8 storeys	26 units/net ha	60 units/net ha
Kitchener		Medium Density Residential One	**8.1**			113	200		**313**	**77**	Street towns, Stacked/B2B	range of MD housing types including towns and multiple dwellings. 3 to 8 storeys	26 units/net ha	100 units/net ha
Kitchener		Medium Density Residential Two	**3.9**			41	128		**169**	**86**	Street towns, Stacked/B2B	range of MD housing types including towns and multiple dwellings. 3 to 8 storeys	60 units/net ha	200 units/net ha
Kitchener		Mixed Use One	**1.3**				70		**70**	**112**	Stacked/B2B	mulitple dwelling units, not including cluster towns)	26 units/net res ha	200 units/net res ha
Kitchener		Mixed Use Two	**13.0**			193	289		**482**	**74**	Street towns, Stacked/B2B	mulitple dwelling units, not including cluster towns)	100 units/net res ha	400 units/net res ha
Kitchener	Hidden Valley Master	High Rise Residential	**1.2**			20	30		**49**	**80**	Street towns, Stacked/B2B	multiple dwellings (apts)	2.0 FSI Building Height: 11m	4.0 FSI Building Height: n/a
Kitchener		Low Rise Residential - Estate	**5.7**	11					**11**	**4**	Assumed min lot size and 25% roads	singles on estate size lots	min width: 30m. Min lot area: 0.4 ha	
Kitchener		Low Rise Residential - Large Lot	**2.0**	9					**9**	**9**	Assumed 0.17 ha lot size (average of other lots in area) and 25% roads	singles on large sized lots	min width: 24m. Min lot area 929 sq.m	

Kitchener	Plan	Medium Rise Residential	**6.9**			93	208	-	**301**	**87**	Street towns, Stacked/B2B	multiple dwellings (apts), cluster townhouses.	0.6 FSI Building Height: 7.5m	2.0 FSI Building Height 25m (8 Storeys)
Kitchener		Mixed Use	**5.1**			25	252		**276**	**109**	Street towns, Stacked/B2B	multiple dwellings (apts)	0.6 FSI Building Height: 11m	2.0 FSI Building Height 25m (8 Storeys) or 50% greater if MU
Subtotal Kitchener			**381.8**	**2,689**	**0**	**2,223**	**2,772**	**0**	**7,685**					
North Dumfries		Agricultural Area (within Settlement Area)	**9.7**	85		58			**143**	**30**	singles - assumed to be redesignated to residential			
Subtotal North Dumfries			**9.7**	**85**	**0**	**58**	**0**	**0**	**143**					
Waterloo		Low Density Residential	**55.7**	453		301	201		**954**	**34**	singles, street towns, Stacked/B2B	Singles, semis, duplexes, tripexes, towns		150 bedrooms per ha.
Waterloo		Mixed-Use Medium Density Residential	**0.7**	-			31		**31**	**90**	stacked/B2B	multiple unit residential buildings		450 bedrooms per ha. (20 Storeys)
Waterloo		Employment Land Conversion - Millenium Blvd - Proposed Medium to High Density	**16.8**	-		188	332		**520**	**62**	Street towns, Stacked/B2B			
Waterloo		Employment Land Conversion - Proposed Mixed Use	**3.3**			33	75		**108**		Street towns, Stacked/B2B			
Waterloo	Beaver Creek Meadows District Plan	Low Density Residential 1	**25.7**	193		206			**399**	**31**	singles/street towns	singles, duplexes, semis, street towns	25 units/ha	35 units/ha
Waterloo		Low Density Residential 2	**12.4**	-		219	67		**286**	**46**	Street towns, Stacked/B2B	duplex, triplex, block towns, street towns, terrace dwelling, low-rise apts	35 units/ha	60 units/ha
Subtotal Waterloo			**114.7**	**646**	**0**	**947**	**706**	**0**	**2,299**					
Wellesley		Urban Residential	**10.7**	134					**134**	**25**	singles	singles	min lot area: 2500sqm	n/a
Subtotal Wellesley			**10.7**	**134**	**0**	**0**	**0**	**0**	**134**					
Wilmot		Urban Residential (Z1)	**15.0**	169		30			**199**	**27**	singles, low proportion of street towns	Zoned Agricultural. Assumed low density res.		
Wilmot		Urban Residential (Z2)	**0.1**	2					**2**	**25**	singles	Singles	min lot area: 600 to 2000 sqm.depending on servicing	n/a
Wilmot		Urban Residential (Z2b)	**0.5**	6					**6**	**25**	singles	SIngles	min lot area: 464 sqm	n/a
Wilmot		Urban Residential (Urban Growth Centre Overlay)	**9.4**	82		57	-		**139**	**30**	singles, street towns	Zoned Agriculture. Higher Density MU Development as per OP		
Subtotal Wilmot			**25.0**	**259**	**0**	**87**	**0**	**0**	**346**					
Woolwich	Elmira/ St. Jacobs	Residential and Ancillary (A)	**23.3**	204		140			**344**	**30**	singles, street towns	Zoned Agricultural. Assumed low density res.		
Woolwich	Elmira	Urban Land Use Area (R-1)	**0.9**	11		-			**11**	**25**	singles	Singles	min lot area: 1390 sqm	
Woolwich	Elmira	Policy 7.20.3	**12.4**	109		75			**183**	**30**	singles, street towns	Zoned Agricultural, Assumed future residential		
Woolwich	Breslau	Urban Area - Future Application (#16 Planned)	**11.8**	103		71			**174**	**30**	singles, street towns	Assumed Low/Medium Density		
Woolwich	Breslau	Low/Medium Density Residential	**5.0**	44		30			**74**	**30**	singles, street towns	LD: Singles, semis MD: all forms of dwellings containing 3 or mor units, such as tri-plex, four-plex, live/work, street and block towns	LD: 12 units/gross MD: 20 units/gross ha	LD: 20 units/gross ha MD: 50 units/gross ha

Woolwich	Breslau	Medium/High Density Residential	**15.0**			234	149		**383**	**51**	Street towns, Stacked/B2B	MD: all forms of dwellings containing 3 or mor units, such as tri-plex, four-plex, live/work, street and block towns HD: all forms of multiple dwelling units: various towns, mixed use res, low-rise apts (up to 40% of units)	MD: 20 units/gross ha HD: 50 units/gross ha	MD: 50 units/gross ha HD: 120 units/gross ha
Woolwich	Breslau	Village Main Street	**1.6**	-		33			**33**		street towns	LD: Singles, semis MD: all forms of dwellings containing 3 or mor units, such as tri-plex, four-plex, live/work, street and block towns	LD: 12 units/gross MD: 20 units/gross ha	LD: 20 units/gross ha MD: 50 units/gross ha
Subtotal Woolwich			**70.0**	**470**	**0**	**582**	**149**	**0**	**1,201**					
Total Waterloo Region			**826.4**	**5,938**	**0**	**5,045**	**4,398**	**0**	**15,381**					

Assumptions:

1. Assumed 100% of Kitchener's Deferral area as Community Area. Classified as DGA as per Waterloo Region
2. If Zoned as Agricultural, assumed to be residential if within the Settlement Area Boundary. (Zoning By-law regulates type and density of residential for Woolwich, Wilmot, Wellesley and Wilmot)
3. Portions of Cambridge "Future Urban Reserve" assumed to be Employment Area.

For Discussion Purposes Only

Date: May 26, 2022

Prepared by:

MGP Malone Given Parsons.

Appendix 4: Schlegel Urban Developments Corp. (Kitchener) Compliance with Settlement Area Boundary Expansion Evaluation Criteria

Growth Plan, 2020 Criteria	Region of Waterloo Urban Expansion Area Evaluation Criteria (June 10, 2021 #PDL-CPL-21-29)	PPS, 2020	Region of Waterloo Official Plan	Satisfaction of Criteria/ Policies - Schlegel Lands
2.2.8.2: A settlement area boundary expansion may only occur through a municipal comprehensive review where it is demonstrated that:		1.1.3.8 A planning authority may identify a settlement area or allow the expansion of a settlement area boundary only at the time of a comprehensive review and only where it has been demonstrated that:	2.B.3a) the expansion is justified through the preparation of a Regional Land Budget completed by the Region as part of a five-year municipal comprehensive review of this Plan, or the completion of a municipal Comprehensive review as otherwise initiated by Regional Council;	This settlement area expansion request is being submitted concurrently with the Region of Waterloo Municipal Comprehensive Review process.
a) based on the minimum intensification and density targets in this Plan and a lands needs assessment undertaken in accordance with policy 2.2.1.5, sufficient opportunities to accommodate forecasted growth to the horizon of this plan are not available through intensification and in the designated greenfield areas: i) within the upper- or single tier municipality, and ii) within the applicable lower-tier municipality;		a) sufficient opportunities to accommodate growth and to satisfy market demand are not available through intensification, redevelopment and designated growth areas to accommodate the projected needs over the identified planning horizon;	2.B.3b) the density targets and reurbanization targets contained in this Plan have been met or exceeded for the Region as a whole, or it can be clearly demonstrated that achievement of such targets will not be hindered by the proposed expansion c) sufficient opportunities to accommodate the population and employment forecasts in this Plan, through reurbanization and in Urban and Township Designated Greenfield Areas, are not available: i) within the region as a whole; and ii) within the applicable Area Municipality to accommodate the growth allocated to the Area Municipality by this Plan;	MGP completed a Land Needs Assessment for Waterloo Region on behalf of Schlegel. Based on this assessment, there is a significant requirement for new Community Area within the Region to accommodate growth forecasted in the Region to 2051. It is our professional opinion that the 50% minimum intensification target of the Growth Plan is the appropriate target for the Region to 2051. We have determined that at the minimum target of 50% intensification, the Region would require a minimum of 944 hectares of Community Area to meet the Provincial growth forecast to 2051 beyond the supply of housing that can be achieved through intensification and the designated greenfield areas. With the proposed population assignment to the City of Kitchener, a significant proportion of this land (approximately 366 ha) is required in Kitchener. The Region concluded in its Land Needs Assessment (LNA) released June 2022 that the Region will require additional Community Area lands to accommodate forecasted growth (150 ha). As set out in our letter to the Region dated May 27, 2022, as well as follow up delegations to the Region, it is our professional opinion that the Region should undertake an additional housing mix scenario to accommodate growth as the recommended scenario fails to provide an option with medium density housing as one of the prominent forms of housing in the growth mix to 2051. In addition, our review of the greenfield supply analysis prepared by the Region has identified significant errors that result in the Region assuming there are 584ha of vacant Community Area land that does not exist as of 2021. This overestimation of supply will lead to a significant shortage of land in the Region unless corrected by ensuring a similar amount of land is added to the settlement area to meet growth needs to 2051. There are also key policy considerations that must be addressed in the Region's work prior to finalizing the Region's LNA to ensure this exercise is completed in conformity with the Growth Plan. The requested expansion areas in Southwest Kitchener, including the Schlegel Lands, can be planned as complete communities to accommodate the forecasted growth and ensure the Region will meet the minimum growth targets for intensification and greenfield density by the 2051 horizon of the Growth Plan. The

Growth Plan, 2020 Criteria	Region of Waterloo Urban Expansion Area Evaluation Criteria (June 10, 2021 #PDL-CPL-21-29)	PPS, 2020	Region of Waterloo Official Plan	Satisfaction of Criteria/ Policies - Schlegel Lands
				comprehensive development of the Schlegel Lands will provide for opportunities to address climate change goals, including promoting compact and energy-saving designs, denser developments, and transit-supportive and walkable communities to lower GHG emissions from buildings and transportation.
b) the proposed expansion will make available sufficient lands not exceeding the horizon of this Plan, based on the analysis provided in policy 2.2.8.2 a), while minimizing land consumption, and			2.B.3d the expansion provides sufficient lands for a time horizon not exceeding 20 years, using the density targets, reurbanization targets and other policies in this Plan. In conformity with the provisions of subsection 2.B.3 (a) and the Schedule 3 2031B forecast of the Places to Grow: Growth Plan for the Greater Golden Horseshoe, and to further implement the Ontario Municipal Board decision relating to the final approval of this Plan, justification exists for the designation of a maximum of 170 ha of Urban Designated Greenfield Area for residential purposes over and above that included in the Urban Area as of the time of the final approval of this Plan. This additional land will be designated in accordance with the provisions of subsections 2.B.3 (i) and (j);	The MGP LNA, conducted in accordance with the Province's methodology, provides the required analysis to determine an appropriate and sufficient amount of land to make available to 2051, taking into consideration housing demand and need by housing type, housing supply, employment and job forecasts, density targets, and balancing intensification with a market-based supply of housing, which will minimize land consumption. Our analysis of required urban area expansion considers the intensification and density targets for the Region as well as the housing demand and supply by housing type, which generates a land needs requirement that is the minimum to accommodate forecasted growth to this planning horizon. The Schlegel Lands, located adjacent to the primary settlement area of Kitchener, are strategically located to contribute to the required community land needs of the Region (and City) to 2051 without unnecessary land consumption.
c) the timing of the proposed expansion and the phasing of development within the designated greenfield area will not adversely affect the achievement of the minimum intensification and density targets in the Plan, as well as the other policies of this Plan.	Would the timing of the proposed expansion adversely affect achievement of minimum density and intensification targets?			As set out in our submissions to the Region on the results of the LNA, the Region-wide intensification target of 61% is, in our opinion, too aggressive and is unrealistic given housing and market trends in the Region. The proposed intensification rate ignores the market demand, and is not based on sound evidence. To pursue unrealistic levels of intensification and high-density housing growth does not meet the needs nor wants of residents and undermines the objectives of the Growth Plan. The requested inclusion of the two areas in Southwest Kitchener within an expanded urban area will provide a portion of the required land to accommodate growth to 2051, providing the opportunity to plan complete communities with a diverse range and mix of housing types based on market demand. These lands will be planned to achieve higher residential densities than has historically been the case for designated greenfield areas and will therefore assist in achieving the

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				Region's density target for the designated greenfields. The requested expansion does not adversely affect the intensification and density targets of the Growth Plan as an appropriate amount of high-density growth is still allocated to the existing settlement areas.
2.2.8.3: Where the need for a settlement area boundary expansion has been justified in accordance with policy 2.2.8.2, the feasibility of the proposed expansion will be determined based on the comprehensive application of all of the policies of this Plan, including the following:				See below.
2.2.8.3 a) there is sufficient capacity in existing or planned infrastructure and	Is there sufficient capacity in existing or planned municipal infrastructure (including road, transit, water and wastewater) and public service facilities to accommodate the expansion area? Is there opportunity to effectively expand on existing and planned infrastructure established through approved master plans and related studies?	1.1.3.8 b) the infrastructure and public service facilities which are planned or available are suitable for the development over the long term, are financially viable over their life cycle, and protect public health and safety and the natural environment;	2.B.3e) the existing or planned infrastructure required to accommodate the proposed expansion can be provided in a financially and environmentally sustainable manner and is consistent with any applicable Regional and/or Area Municipal infrastructure master plan;	Schlegel has commissioned a Preliminary Servicing Overview for each of the Schlegel Lands (see Appendix 5). As noted in these documents, the Schlegel Lands can be adequately serviced through both existing and planned infrastructure (sanitary, storm, and watermain), for which sanitary and dedicated storm sewer stubs exist at the property line of the BSF2 lands. There is sufficient wastewater capacity in the Middle Strasburg Trunk Sanitary Sewer for the BSF2 Lands. Servicing capacity for the remaining services will be confirmed through a future development review process for the Schlegel Lands. Moreover, the Region should update its study work to address all requirements of the Growth Plan and Regional Official Plan with regard to the two settlement expansion areas in southwest Kitchener that are outside of the Protected Countryside area.
2.2.8.3 b) the infrastructure and public service facilities needed would be financially viable over the full life cycle of these assets;	Would the water/ wastewater/ transportation infrastructure needed be financially viable over the full life cycle of the assets? What are the order of magnitude costs associated with servicing the settlement expansion area? Are the public service facilities needed financially viable over the full life cycle of the assets?			Development of the proposed expansion areas makes efficient use of vacant land within an area where roads, sanitary, and municipal services can be provided with minimal extensions to existing infrastructure. Development on these lands are planned to achieve a cost-effective development pattern by proposing development at a density that efficiently uses the available land in a compact built form. Development on these lands will provide the City/Region significant one-time revenues from Development Charges and Building Permits and ongoing revenues from Property Taxes. As such, these lands can be serviced in a cost-effective manner and will aid the City/Region in maintaining a healthy supply of housing. Further technical studies will be provided as part a future planning process.

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				The creation of new neighbourhoods on the proposed expansion areas adjacent to the Kitchener settlement area will ensure a return on the investment of infrastructure related to growth in this area over their full life cycle.
2.2.8.3 c) the proposed expansion would be informed by applicable water and wastewater master plans or equivalent and stormwater master plans or equivalent, as appropriate;				The development of the proposed expansion areas will follow the infrastructure required by the applicable Water and Wastewater Master Plans. This will be detailed in technical studies submitted with future planning applications. Moreover, the Region should update its study work to address all requirements of the Growth Plan and Regional Official Plan with regard to the two settlement expansion areas in southwest Kitchener that are outside of the Protected Countryside area.
2.2.8.3 d) the proposed expansion, including the associated water, wastewater and stormwater servicing, would be planned and demonstrated to avoid, or if avoidance is not possible, minimize and mitigate any potential negative impacts on watershed conditions and the water resources system, including the quality and quantity of water	Would the proposed expansion area minimize any potential impacts on watershed conditions and the water resource system?		2.B.3g) any applicable watershed studies have been completed consistent with the policies in Section 7.F, prior to the approval of the expansion;	The development of the proposed expansion areas will follow the applicable watershed studies and minimize any potential impacts on watershed conditions and the water resource system. This will be detailed in technical studies submitted with future planning applications. Moreover, the Region should update its study work to address all requirements of the Growth Plan and Regional Official Plan with regard to the two settlement expansion areas in southwest Kitchener that are outside of the Protected Countryside area.
2.2.8.3 e) key hydrological areas and the Natural Heritage System for the Growth Plan should be avoided where possible;	What is the potential for impacts on key hydrologic areas? Are key hydrologic areas protected? Does the expansion area avoid and protect the Natural Heritage System and/or maintain, restore or improve the functions of the area? Would the proposed expansion area affect any significant built heritage resources or significant cultural heritage landscapes? What is the archaeological potential of the candidate expansion area?			The development of the proposed expansion areas will protect and have consideration for the Natural Heritage System (NHS), including natural heritage features and/or areas of natural heritage significance including environmentally protected lands identified within the City's Official Plan (OP). Detailed natural heritage and environmental studies will be conducted as part of the future planning process that will demonstrate compliance with all the policies of the PPS, as well as the Region and City OP. Development will be located outside of the significant natural heritage system and preserve or restore, where possible, important ecological features and linkages. We believe the proposed plan for the two expansion areas in Southwest Kitchener adheres to the guiding principles and criteria set forth by the Region as they relate to the Natural Heritage System and natural heritage features for settlement boundary expansion.

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2.2.8.3. f) prime agricultural areas should be avoided where possible. To support the Agricultural System, alternative locations across upper- or single-tier municipality will be evaluated, prioritized and determined based on avoiding, minimizing and mitigating the impact on the Agricultural System and in accordance with the following: i) expansion into specialty crop areas is prohibited; ii) reasonable alternatives that avoid prime agricultural areas are evaluated; and iii) where prime agricultural areas cannot be avoided, lower priority agricultural lands are used;	Where prime agricultural areas cannot be avoided, does the proposed expansion area contain lower priority agricultural lands? Would the proposed expansion area impact the resiliency of the agricultural system to outside shocks, such as extreme weather events destroying crops elsewhere in the world? Is fragmentation of prime agricultural lands avoided/ minimized; and, are contiguous agricultural lands retained? Does the proposed expansion area contain any deposits of mineral aggregate resources? Would development within the proposed expansion area preclude or hinder the expansion or continued use of any existing mineral aggregate operations?	1.1.3.8 c) in prime agricultural areas: 1.the lands do not comprise specialty crop areas; 2.alternative locations have been evaluated, and i. there are no reasonable alternatives which avoid prime agricultural areas; and ii. there are no reasonable alternatives on lower priority agricultural lands in prime agricultural areas;		There are no other reasonable alternative areas within the Region that could accommodate settlement expansion that would avoid prime agricultural lands. Through a future development review process with the City, any opportunities to avoid or mitigate impacts on existing agricultural uses will be assessed. There are no specialty crop areas in the Schlegel Lands. The Schlegel Lands are not designated Protected Countryside in the Region's OP. Any lands within the Region required for expansion into the urban boundary to meet growth needs would have to consider potential impacts on nearby agricultural operations. This issue is not unique to the Schlegel Lands. Any future development will be required to evaluate the potential impact on any deposits of mineral aggregate resources. Further technical analysis will be required as part of a future planning process.
2.2.8.3 g) the settlement area to be expanded is in compliance with the minimum distance separation formulae;	Are there existing livestock operations in proximity to the candidate area? Does the proposed expansion area comply with the minimum distance separation formulae?	1.1.3.8 d) the new or expanding settlement area is in compliance with the minimum distance separation formulae; and		The two expansion areas in Southwest Kitchener can comply with the MDS formulae similar to other potential areas for settlement expansion. This can be achieved with the inclusion of policies requiring that MDS will continue to apply.
2.2.8.3 h) any adverse impacts on the agri-food network, including agricultural operations, from expanding settlement areas would be avoided, or if avoidance is not possible, minimized and mitigated as determined through an agricultural impact assessment;	Does the candidate expansion area avoid/ minimize/ mitigate any adverse impacts on the agri-food network, including agricultural operations? Would the proposed expansion area negatively impact	1.1.3.8. e) impacts from new or expanding settlement areas on agricultural operations which are adjacent or close to the settlement area are mitigated to the extent feasible.		The two expansion areas in Southwest Kitchener can be expanded in compliance with this policy and through more detailed study at subsequent planning stages will ensure impacts on the agri-food network are either minimized or mitigated to the extent feasible.

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	local food production, processing and distribution by increasing the length of trips (and greenhouse gas emissions) between farms, processing facilities, and grocery stores?			
2.2.8.3 i) the policies of Section 2 (Wise Use and Management of Resources) and 3 (Protecting Public Health and Safety of the PPS are applied;		2.1.1 Natural features and areas shall be protected for the long term. 2.1.2 The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features. 2.2.1 Planning authorities shall protect, improve or restore the quality and quantity of water... 3.0 Development shall be directed away from areas of natural or human-made hazards where there is an unacceptable risk to public health or safety or of property damage, and not create new or aggravate existing hazards.		Detailed natural heritage, watershed, environmental, and agricultural studies will be conducted as part of the future planning process that will demonstrate compliance with all the policies of the PPS, as well as the Region and City OP. Development will be located outside of the significant natural heritage system and preserve or restore, where possible, important ecological features and linkages as it is understood the value and importance of the NHS as a carbon sink and its role in future climate resiliency. Any hazards identified through the detailed studies and fieldwork will be respected in planning policies and future development.
2.2.8.3 j) the proposed expansion would meet any applicable requirements of the Greenbelt, Oak Ridges Moraine Conservation, Niagara Escarpment, and Lake Simcoe Protection Plans and any applicable source protection plan;	Would the proposed expansion area meet any applicable requirements of the Region's source protection plan?			Not applicable; the proposed expansion areas are not within the Provincial Plans for the Greenbelt, Oak Ridges Moraine, or Niagara Escarpment.
2.2.8.3 k) within the Protected Countryside in the Greenbelt Area: ...				Not applicable; the proposed expansion areas are not within the Protected Countryside in the Greenbelt Area.
	Are there any known cross-jurisdictional issues that may impact the viability of the land to be developed?			The location of the proposed expansion areas are entirely within the City of Kitchener, and the nature of the uses proposed (community land) are such that no cross-jurisdictional issues are expected to arise.

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				The vision for the two areas in Southwest Kitchener will achieve a reasonable yield based on its anticipated use and, as such, the proposed land use within the City of Kitchener will not ripple out to affect Waterloo Region's employment or population forecasts, or its density targets, or those of any other municipality in the Region.
	How well does the proposed expansion area provide opportunities to align with the target housing demand and market pressures for the Region? How well does the potential expansion area support the housing affordability objectives and targets of the Region?	1.1.1 Healthy, liveable and safe communities are sustained by: ... b) accommodating an appropriate affordable and market-based range and mix of residential types (including single-detached, additional residential units, multi-unit housing, affordable housing and housing for older persons), ... to meet long-term needs; 1.4.3 Planning authorities shall provide for an appropriate range and mix of housing options and densities to meet projected market-based and affordable housing needs of current and future residents of the regional market area by: a) establishing and implementing minimum targets for the provision of housing which is affordable to low and moderate income households and which aligns with applicable housing and homelessness plans. However, where planning is conducted by an upper-tier municipality, the upper-tier municipality in consultation with the lower-tier municipalities may identify a higher target(s) which shall represent the minimum target(s) for these lower-tier municipalities; b) permitting and facilitating: 1. all housing options required to meet the social, health, economic and well-being requirements of current and future residents, including special needs requirements and needs arising from demographic changes and employment opportunities; and 2. all types of residential intensification, including additional residential units,		Allowing for the inclusion of the two expansion areas in Southwest Kitchener will provide additional land to help satisfy housing demand and an opportunity to plan and construct complete communities with a balanced mix of housing types anticipated for the Region based on market demand and supply. The specific land uses and housing mix will be determined during the future official plan review process for Kitchener for the expansion lands, but will be in conformity with Provincial, Regional, and City policies respecting housing needs for the planning horizon. The development of these lands will allow for compact residential development including in medium density forms of housing, which aids in meeting the market desire for grade-related, family-oriented housing, while also realizing a significant move away from the historically high proportion of low-density units and maintaining a shift to more apartments in the Region. This type of growth in the Region will allow new families and retirees more affordable housing that they will prefer. Medium density housing can achieve both intensification in Strategic Growth Areas and a variety of housing in new communities. Based on the current market information, it is this type of housing that provides opportunities for improved housing affordability, increased density, complete communities, and desirable housing mix and forms for residents. This is especially true for young families and retirees who want 2-3 bedrooms in their current neighbourhoods without moving into an apartment. More affordable housing that is attractive to residents and provides primarily grade-related units is essential to the quality of life in the Region and its continued ability to attract new employers and businesses who wish to house their employees. The primary means of ensuring long-term affordable housing in the Region is to provide an abundant, or at least sufficient, supply of all housing types to meet market-based demand. As noted earlier, the MGP Balanced Growth Scenario achieves these objectives. The overall housing mix is more realistic from a market-based forecast. We have determined that using the 50% intensification scenario, the Region would require a minimum of 944 hectares of additional Community Area land to accommodate growth.

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		and redevelopment in accordance with policy 1.1.3.3;		
	Would the proposed expansion area provide residents easy access and connectivity to food, shelter, education, health care, arts and recreation, and information technology?	v		The proposed expansions are located in close proximity to community amenities such as grocery stores, elementary and high schools, university (UW, Laurier, Conestoga), healthcare (Grand River Hospital), recreation opportunities (Doon Creek Natural Area and Doon Pioneer Park Community Centre). The universities and college specifically provide or attract a wealth of opportunities including Communitech, Velocity and other high-tech startups/incubators for access to information technology.
	Can the expansion area function as a standalone complete community or provide for the completion of an existing community including an appropriate mix of jobs, stores, services, housing, transportation options, and public service facilities for all ages and abilities?		2.B.3f) the expansion is of a sufficient size to be developed as a complete community by itself, or can be integrated with existing development to contribute to a complete community;	The Schlegel Lands, together with the other lands identified for settlement expansion in southwest Kitchener, have the potential to accommodate a complete community with a mix and range of housing opportunities that will support new development southwest of the existing Kitchener Settlement Boundary. Planning for these areas will be undertaken holistically through a comprehensive review process (Kitchener OP) to ensure existing and new residents are not adversely affected by contaminant discharges and other pollutants. Planning for a complete community that is compact and supports multi-modal transit in proximity to employment lands (northeast of the lands) will contribute to lowering GHG emissions in the face of a changing climate.
	Does the candidate expansion area represent logical and orderly progression of growth?			The two expansion areas in Southwest Kitchener represent a contiguous, orderly, and logical expansion to the existing Kitchener Settlement Area Boundary that is adjacent to planned community lands. These lands are considered an appropriate size and location for a Settlement Area Boundary Expansion given its proximity to the existing road network, the existing settlement boundary, and the ability for the lands to be comprehensively planned. Expansion of these lands avoids leapfrogging or fragmentation of development and promotes compact, multi-modal complete communities that will reduce GHG emissions.
	Would the proposed expansion area be integrated with existing, or planned open spaces, parks, trails, and other recreational facilities? Can emergency services be efficiently delivered to the settlement expansion area? Would the proposed expansion area contribute to a pattern of development that supports healthy and active living and mitigates public health risks?			The two expansion areas in Southwest Kitchener will be integrated with the surrounding community as it is planned and will contain its own open space network including parks, trails and other recreational facilities as necessary. Further details will be reviewed in the future comprehensive planning of these areas. These lands are located adjacent to municipal roads and will provide access to emergency services. As part of any future development application emergency services will review that appropriate access is provided. The proposed expansions would help address the City's gaps in the transportation network through the establishment of the multimodal road network as the lands are built out. Following development within the new urban area, additional cyclist routes and sidewalks would be developed to provide local connectivity. These local routes would connect directly to the proposed network

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	Would the proposed expansion area help to minimize the health effects of climate change, such as illnesses related to extreme cold or heat events, or increased exposure to air pollution?			surrounding the proposed expansion areas to help achieve the active transportation goals envisioned for the City. With regard to the northern most expansion request (the BSF2 Lands), the lands represent the missing area in nearby neighbourhoods and are required to extend servicing and a new collector road to connect to ongoing development. These lands would create a community built on the Complete Streets vision that is contemplated as part of the Regional Transportation Master Plan. The approach and network would be further refined as the community is designed and established and would emphasize building safe infrastructure for all road users including drivers, pedestrians, cyclists, and transit commuters, which lowers GHG emissions by increasing modal share between various transit options.
	Would expansion enable opportunities for energy, resource and water conservation and promotion of green infrastructure to support climate change mitigation and adaptation? Does the proposed expansion area support nature-based solutions to climate change mitigation and adaptation (e.g., prevent flooding, provide shade, and sequester carbon)? Is the anticipated density for the proposed expansion area transit-supportive? Would it support frequent transit service and multi-modal access to the transit network? Would the proposed expansion area support other sustainable and active modes of travel, such as walking, cycling, and travel with the use of mobility aids, including motorized wheelchairs?			The proposed plan for the two expansion areas in Southwest Kitchener will adhere to the vision and intent set by the City Official Plan by creating a complete, compact and vibrant community, respect and enhance the NHS wherever possible, optimize the use of existing infrastructure by proposing a compact built-form, and support climate change mitigation through protecting, conserving, enhancing and wisely using the valuable land, air and water resources. The development of the Schlegel Lands will consider climate change mitigation measures, and reduce community emissions by increasing multi-modal transportation options, promoting energy efficiency, and upgrading existing infrastructure in accordance with policies of the City OP. These lands also have the potential to promote economic vitality, accommodate forecasted population growth, develop well-designed, complete, and liveable communities, and protect natural and agricultural areas, in accordance with the City's vision, goals, and objectives set out in the City OP. The expansion provides opportunities for new investment, new areas for commercial and residential expansion and growth, and a larger population base to support the local economy, all while preserving the agricultural foundation of the surrounding lands. The development of a new community will fit within the priority of vibrant, compact and healthy communities. The Schlegel Lands present a logical expansion to the settlement area of Kitchener and can expand the services and linkages throughout the City to residents, businesses, and visitors. The development of these lands will also protect and preserve the physical and natural environment through detailed technical studies as part of future planning exercises and applications (e.g. environmental and natural heritage studies, transportation studies).

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	Would it support minimized vehicle kilometres travelled and help reduce the growth of greenhouse gas emissions?			
	Is there potential for the candidate area to erode or enhance protection of existing employment areas, corridors, rail corridors and transit? Would the proposed expansion area protect or enhance employment areas in proximity to major goods movement facilities and corridors for employment uses that require those locations? Would the proposed expansion area help provide sufficient land, in appropriate locations, to accommodate the Region's employment growth? Would the proposed expansion area help strengthen the economic diversity of the region? Would the proposed expansion area support a better balance of jobs and housing in communities across the region to reduce the need for long distance commuting and greenhouse gas emissions?			The proposed expansion areas are not adjacent to any employment areas, corridors or rail corridors and, as such, will not impact these areas. The proposed expansions are for Community Area lands and while it would not help accommodate the forecasted employment growth, there are other areas that are much better suited for employment lands due to their locational characteristics. The Region has identified appropriate new areas for employment growth. The two expansion areas also have the potential to promote economic vitality, accommodate forecasted population growth, develop well-designed, complete, and liveable communities, and protect natural and agricultural areas, in accordance with the City's vision, goals, and objectives set out in the City OP. Planning for a complete community that is compact and supports multi-modal transit in proximity to employment lands (NE of the lands) will contribute to lowering GHG emissions in the face of a changing climate.
			2.B.3h) for any proposed Urban Area expansions east of the Grand River the Township of Woolwich and the City of Cambridge, in collaboration with the Region, have undertaken a planning process to determine the	n/a

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			development densities, and general mix and location of land uses appropriate for that area;	
			2.B.3i) As provided for through the municipal comprehensive review process associated with the final approval of this Plan and to further implement the Ontario Municipal Board decision relating to the final approval of this Plan, priority consideration will be given to a future amendment to this Plan to designate a maximum of 55 ha of Urban Designated Greenfield Area located west of Fountain Street and north of the future Ottawa Street extension in the southern portion of the Township of Woolwich to establish, through the development of these lands for residential purposes, what is expected to be an appropriate medium to longer term settlement boundary, subject to the following: (i) Designation of these lands as Urban Area will be considered through a future amendment to this Plan commenced in 2016 and may be considered concurrently with a corresponding amendment to the Township of Woolwich Official Plan; (ii) Consideration of the implementing amendment to this Plan will be subject to the provisions of subsection 2.B.3 (g) and subsection 2.B.3 (h); and (iii) The southern edge of the Urban Area east of Woolwich Street South through to Fountain Street will be deemed to be the final alignment of Ottawa Street as determined through the applicable environmental assessment process without further amendment to this Plan.	n/a
			2.B.3j) As provided for through the municipal comprehensive review	n/a

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			process associated with the final approval of this Plan and to further implement the Ontario Municipal Board decision relating to the final approval of this Plan, priority consideration will be given to a future amendment to this Plan to designate a maximum of 115 ha of Urban Designated Greenfield Area to be located between Speedsville Road and the Grand River in the northern part of the City of Cambridge, subject to the following:...	
			As part of the next municipal comprehensive review process to be undertaken not later than 2019 and to further implement the Ontario Municipal Board decision relating to the final approval of this Plan, priority consideration will be given to expanding the Urban Area boundary and Urban Designated Greenfield Area designation to include the lands within the Township of North Dumfries located between the permanent Countryside Line located coincident with the southern boundary of the South Boundary Road and the City of Cambridge municipal boundary as of the date of the final approval of this Plan. The municipal comprehensive review process may be undertaken concurrent with the processing of applications to amend the area municipal official plan applicable to the subject lands. Prior to the completion of this municipal comprehensive review process, such lands will be considered as developable for the purposes of infrastructure planning, including any infrastructure master plan updates undertaken by the Region in	n/a

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			accordance with the provisions of Chapter 5	

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27 July 2022

Mr. Vaughn Bender
Schlegel Urban Developments
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Kitchener, Ontario
N2E 4H5

Water Resources Management Plan
BSF2 Lands
Kitchener, Ontario

Dear Mr. Bender

1. Introduction

GHD Limited (GHD) is pleased to provide this Water Resources Management Plan (WRMP) for the proposed residential development of the BSF2 Lands (Site) located at 236 Gehl Place, Kitchener, Ontario. At the request of Schlegel Urban Developments (Schlegel), GHD, in collaboration with WalterFedy, has undertaken an evaluation of potential water resources considerations related to the proposed development and established a plan to address all identified considerations. These evaluations demonstrate that all water resource management considerations can be addressed such that the existing condition water resources will be maintained as described herein.

GHD's evaluation included assessment of existing site specific and regional information, Region of Waterloo Official Plan policies, Source Water Protection plans, and industry best practices. Furthermore, GHD has undertaken additional focussed site-specific studies at the Site in 2022 and continues to collect water monitoring data (groundwater levels and groundwater chemistry) in collaboration with neighbouring property owners and Region staff. Recent site-specific investigations and study include:

– Extensive deep test pit geology evaluation including eight additional test pits (in addition to 17 test pits reported by Naylor Associates from 2005)
– Infiltration testing based on Guelph permeameter testing at seven locations
– Infiltration and water balance analysis using site specific conditions and local climatological data

The recent and ongoing data collection and study build on the extensive information for the Site which includes geotechnical investigations by Naylor Associates Ltd. in 2005, extensive geological and hydrogeological investigations by MTE in 2020 and groundwater modelling using the Region's Tier 3 Source Water Protection model in collaboration with the Region and their consultant.

The evaluation of the WRMP identified seven key considerations for the proposed development of the lands. These considerations and the proposed plans or solutions to address them are described below.

2. Water Resources Considerations and Solutions

2.1 Site Location in Regional Recharge Area

Consideration 1:

The BSF2 lands are presently identified to be located in the Regional Recharge Area (RRA) outside the Urban Boundary and Countryside Line.

Discussion 1:

The Regional Official Plan (ROP) is presently interpreted to preclude residential development on such lands. The RRA designation is outside of and not any part of the Source Water Protection (SWP) program under Provincial Legislation. Furthermore, the RRA is not consistent with the approach, science, or regulation of the Provincially legislated and required SWP program (refer to Section 2.2 below for information on the SWP).

The RRA policy prohibition on residential development of the BSF2 lands is not required for technical reasons associated with water resources. The constraints on residential development of the Site are a result of past Regional planning policy decisions.

It is important to note that residential development is approved, allowed and ongoing on adjacent RRA lands without adverse impacts on water resources and similar methods would be applied to the BSF2 lands to provide suitable protection of water resources, including municipal water supply. There are readily available options for the Region to address the policy constraints of the current ROP.

Solution 1:

The attached document "Summary Rationale for the Proposed Regional Official Plan Amendment" submitted by Schlegel on April 14, 2022 describes the rationale and options for amendment of the ROP to facilitate compatible development of the BSF2 Site. The reader is referred to this document for the planning and policy considerations.

It is important to emphasize that the BSF2 Site can be safely developed with protection of water quantity and water quality for all water resources. The specific technical considerations are described in the following sections of this document.

2.2 Satisfying Source Water Protection Requirements

Consideration 2:

The Region's Source Water Protection (SWP) plans include requirements for the protection of water quantity and quality that must be satisfied by any proposed development.

Discussion 2:

It is important to note that residential development is not a Provincially Significant Threat activity and does not threaten regional water quality or quantity from the perspective of either a public use (i.e. current or future water

supply) or ecological dependency. Furthermore, the Site is located outside any Issue Contributing Area for road salt effects and therefore there are no prescribed Site restrictions for road salt under SWP policies.

Residential development commonly occurs and exists throughout the Region and under all the various classifications for source water protection without adverse impacts.

Solution 2:

The proposed residential development of the BSF2 Site can be completed providing protection of all SWP technical requirements. The proposed development will include proactive measures to ensure suitable protection of both water quantity and quality of current and future water supplies for the Region of Waterloo.

More specific information related to source water protection considerations are provided in the following sections.

Overall, a detailed WRMP will be implemented for the BSF2 site to mitigate against any potential SWP concerns and regional recharge and any other water resources considerations. The water management plan will use an integrated green infrastructure low impact development (LID) approach, blended with traditional SWM practices, using best management practices to maximize infiltration of "clean" water (e.g., roof and green space runoff), while also collecting and treating "less clean" water (e.g., road and parking lot runoff). The overall goals of the water management plan is to maintain the pre-development water balance, maximize infiltration on site and maintain water quality. This proposed approach draws on findings and recommendations from Ontario and local programs, guidelines, and subwatershed studies, including the *Upper Cedar Creek Scoped Subwatershed Study* and the *Upper Blair Creek (Kitchener) Functional Drainage Study Final Report.*

This approach includes approaches at 4 stages/scales of potential intervention:

1) Design – reducing impervious coverage where possible
    a. Permeable pavers for parking lots, walkways, driveways, and all suitable hardscaped areas
    b. Narrower streets: reduces impermeable surface and allows for green infrastructure in the ROW as described above
    c. Reduced set-backs for houses: minimizes impermeable surface (in the form of driveways)
2) At source (lot-level) – managing and treating rainwater as close as possible to where it falls
    a. Capture and infiltration of roof runoff: capturing this water where it falls and directing it immediately (via roof leaders) to infiltration trenches and/or rain gardens at the lot-level.
    b. Curb extensions on smaller roads where salt volumes are not a significant concern: allows for green infrastructure measures such as tree trenches and bioswales that will filter, treat, and infiltrate water on-site
    c. Reduce grading to 0.5-1% wherever possible (i.e., in parking lots, landscape areas, and swales): allows for additional evapotranspiration and infiltration
    d. Parks are also a green infrastructure measure that allow for at-source infiltration. Walkways will be permeable and grade will also allow for maximum evapotranspiration and infiltration.
3) Conveyance Controls (site-level) - managing and treating rainwater as close as possible to where it falls
    a. Incorporation of greenways: behind rows of SFD lots (or between lots with the backyards would abut) greenways, consisting of grassed swales and sub-surface infiltration, will facilitate distributed recharge of larger volumes of clean runoff. These greenways will manage rainwater where it falls, and during larger storm events can capture overflow from individual lot-level infiltration trenches.

4) End-of-Pipe – treatment to ensure that chloride and other potential pollutants are managed to within acceptable limits
    a. Stormwater ponds to ensure that chloride and other potential pollutants are managed within acceptable limits before discharge and are discharged to a suitable receiver

In addition to meeting the goals of maximizing infiltration while maintaining water quality, this approach, which introduces additional vegetation through the site, delivers a wide range of additional benefits, including:

– Reduced air temperatures
– Improved air quality
– Habitat improvement and connectivity
– Space for recreation and physical activity
– Climate resilience
– Carbon sequestration

2.3 Management of Runoff Quantity and Subwatershed Distribution

Consideration 3:

The drainage from the BSF2 lands must be managed to control the stormwater discharge rates and maintain the subwatershed divide between the Alder Creek and Strasburg Creek subwatershed.

Discussion 3:

Schlegel's consulting team has developed suitable plans for the overall drainage and stormwater management for the BSF2 lands as described by WalterFedy (Preliminary Servicing Overview, June 26, 2021) in the summary below.

Solution 3:

The site drainage and stormwater management design will maintain the balance of flow (matching pre to post development discharge) between the two subcatchments, incorporating separate stormwater management facilities and off-site discharges to downstream catchments.

Storm Sewers

The storm drainage system for the Site shall be designed to convey both the minor and major storm events to the proposed stormwater management facilities (SWMF). As per the City of Kitchener and the DGSSMS criteria, the system will be designed to collect and convey the minor storm events (≤5-year storm) via sewers to the proposed SWMF, with major storm events conveyed through overland flow routes contained within the proposed rights-of-way. Refer to the Preliminary Servicing Plan for the preliminary storm system layout.

Stormwater Management

The subject lands are bisected by the drainage divide between the Strasburg Creek and the Alder Creek subwatershed areas. Drainage from the northeastern corner of the BSF2 lands flows to Strasburg Creek, ultimately draining to the Grand River. The drainage from the remaining lands flows to Alder Creek, before ultimately outletting to the Nith River. The existing topography and drainage patterns are illustrated on Drawing C1-2.

The stormwater management strategy for the BSF2 lands will include two SWMF, low impact development strategies (LIDS) and infiltration measures where the opportunities exist, and will comply with the criteria set forth in the Alder Creek Watershed Study and Upper Strasburg Creek Subwatershed Plan Update (CH2M Hill, January 2008). This subwatershed plan was an update of the Strasburg Creek Master Watershed Plan (Paragon, 1991) establishing stormwater management requirements including peak flow targets and average annual infiltration targets. The SWMFs will be designed to control post- to pre-development flows per the current Grand River Conservation Authority (GRCA) and Ministry of the Environment, Conservation and Parks (MECP) standards, provide Level 1 or "Enhanced" quality control and adhere to the criteria set forth in the aforementioned subwatershed plan update. Through comprehensive hydrogeological and geotechnical study, the BSF2 lands have been confirmed to contain soils conducive to infiltrations and, as such, have infiltration targets reflective of soils observed within the BSF2 lands through that investigative work.

As previously noted, the subject lands will drain to two SWMFs, SWMF1 is located at the eastern end of the BSF2 lands, adjacent to the existing wooded area and Williamsburg Cemetery. While the primary outlet of SWMF1 will be via infiltration, the SWMF has a pipe outlet to the northeast, ultimately outletting to Strasburg Creek via the Williamsburg Green Subdivision, at the southwestern corner of Fischer-Hallman Road and Bleams Road. As noted earlier, this dedicated storm sewer was constructed in 2021 as part of the servicing of the South Estates Subdivision and Williamsburg Green Subdivision.

SWMF2 is located within the Alder Creek subwatershed and is located adjacent to the southern property boundary. The primary outlet for SWMF2 shall be via infiltration with provision for overland flow to the south as under existing conditions. Refer to the Preliminary Grading and Servicing drawing (C3-2) for details.

Further information on management of water quantity and quality is provided in the following sections.

2.4 Maintaining the Water Quantity of Recharge and Site Discharge

Consideration 4:

The Site is located in an area of recharge to the regional groundwater flow system and the existing recharge needs to be maintained in accordance with applicable policies of the ROP and the SWP plans. Additionally, the quality of water for runoff and infiltration must be managed to prevent potential contaminants common to urban stormwater (e.g., sediment, nutrients, heavy metals, trash, and salt) from entering the groundwater.

Discussion 4:

Schlegel has conducted extensive subsurface investigations including boreholes, monitoring wells, test pits, and infiltration studies, as identified in Section 1. These investigations show that the site consists largely of underlying soil types with moderate to low runoff potential and moderate to high infiltration. They have clearly identified the areas of the site that are underlain by sand or sand and gravel deposits at/near surface that can support an elevated rate of recharge to groundwater, amenable to focused, as well as distributed, recharge to groundwater.

Solution 4:

The subsurface geology of the BSF2 lands are amenable to maintaining the quantity and distribution of recharge to groundwater and any off-site discharge of runoff. Therefore, in order to maintain the quantity of recharge at pre-development levels, infiltration measures can be prioritized across the site, with a particular focus on capturing clean roof and green space runoff and infiltrating it at its source. The stormwater generated on impervious surfaces will be treated onsite prior to infiltration or discharge offsite, as appropriate.

Capturing rain where it falls and directing it immediately (via roof leaders) into infiltration trenches at the SFD lot-level and rain gardens with subsurface infiltration galleries in medium-density areas reduces the opportunity for contamination and allows for immediate infiltration.

Greenways consisting of vegetated swales with sub-surface infiltration can also be incorporated as a site-level green infrastructure measure to maximize infiltration and maintain recharge. These greenways can be included behind rows of SFD lots (or between lots with the backyards that would abut). They can manage rainwater where it falls, and during larger storm events can capture overflow from individual lot-level infiltration trenches.

More focussed infiltration facilities will also be incorporated as necessary to augment these more distributed infiltration approaches. Focussed infiltration facilities can include both open ponds with permeable bases and underground infiltration galleries. These approaches are coupled with stormwater pond treatment facilities to ensure suitable water quality (low suspended solids) to support long-term operation with minimal maintenance.

Water from sources where some potential for contamination exists (such as smaller, lower traffic roads) can be managed through green infrastructure bioretention facilities (such as rain gardens, bioswales, tree boxes) that will treat the stormwater prior to infiltration, ensuring sufficient water quality treatment. Overflow from these green infrastructure measures can be collected in storm sewers and conveyed to stormwater ponds for further treatment and infiltration prior to discharge off-site. Infiltration of collected water will occur using a mix of greenway, open pond, and subsurface infiltration gallery facilities similar to those in demonstrated use elsewhere.

Water from sources where somewhat higher potential for contamination exists (higher-density vehicle areas such as Amand Dr and higher density residential parking lots) will be conveyed through the storm sewer system to the end-of-pipe stormwater ponds where water quality treatment will be provided prior to discharge.

Together, these measures ensure that stormwater remains on site at a high-quality, maintaining the pre-development water balance.

By infiltrating as much water as possible as close to its source as possible, the aim is to replicate existing groundwater distribution and flow patterns as closely as possible, minimizing impacts to existing natural heritage features.

Special consideration will be given to the management of runoff with potential for high chloride concentration, as described in the following section.

2.5 Management of Road Salt

Consideration 5:

The potential for impact of road salt used for de-icing on groundwater quality needs to be managed to minimize such impacts.

Discussion 5:

Every new development in the Region is required to submit a "…Salt Impact Assessment in accordance with the Regional Salt Impact Assessment Protocol Guideline to the satisfaction of the Region" [ROP Section 8.B.1]. Such an assessment will be part of the design for the BSF2 lands.

Solution 5:

The proposed residential development for the BSF2 lands incorporates specific measures to limit the potential for de-icing salts to contribute to the groundwater concentrations. In addition to a salt management plan, these measures include separation of higher vehicle-density areas (such as Amand Drive and higher density residential parking lots) with dedicated SWM facilities for proactive management of salt affected runoff to prevent infiltration to groundwater.

The site will be designed with best management practises to minimize the use of road salts and infiltration of high chloride stormwater runoff in accordance with Region guidelines, including ensuring winter maintenance contractors have completed the Smart about Salt program. In addition, site parking lots can be designed in accordance with the Lake Simcoe Region and Conservation Authorities (LSRCA) Parking Lot Design Guidelines (LSRCA, 2017, https://www.lsrca.on.ca/parking-lot-guidelines). These state-of-the-art guidelines for parking facilities provide design methods to reduce the requirement of salt application and lower the chloride concentration in stormwater runoff.

Higher chloride stormwater runoff will result from higher vehicle-density areas (i.e., Amand Drive and higher density residential parking lots). The stormwater runoff from these areas can be collected in storm sewers and directed to settling ponds for pre-treatment (TSS settling) prior to off-site discharge through an already-installed sewer bypass discharge to Strasburg Creek during the high chloride runoff season (winter and early spring). This diversion facility has already been paid for by Schlegel and was proactively constructed in 2021 to ensure it is available to support the proposed development of the BSF2 lands. It is similar to the approach that is currently employed by the City of Kitchener's Battler Road snow storage and disposal facility. During the non-high chloride runoff seasons (late spring, summer and fall) the bypass can be closed, and the stormwater runoff can be diverted to an infiltration basin for groundwater recharge.

This plan includes the measures to limit the need and application of de-icing salts within the development, in addition to the diversion measure described above. Suitable measures include development of a salt management plan, minimizing grades on roads, sidewalks, and driveways, public education, contractor requirements for private parking lot snow management, Smart About Salt training for all maintenance personal, and adoption of best management practices. Schlegel will submit and implement such a plan in accordance with this existing ROP requirement.

2.6 Maintaining Water Balance for Natural Heritage Features

Consideration 6:

The Site includes two existing woodlots that will require pre-development water balance to be maintained.

Discussion 6:

Schlegel understands the importance of the natural heritage features and the requirement to maintain their function. Their character and water-related dependencies are being studied by Schlegel's natural resources consultant. The importance of these valued woodlots is evident in the preliminary site plans and studies.

Solution 6:

Stormwater management controls designed for the site will ensure that suitable quantity, duration, and quality stormwater runoff is maintained to each woodlot based on pre-development conditions.

Site stormwater management controls will focus on maintaining the water balance and function of the two onsite woodlots. Both clean roof and green space runoff can be directed to the woodlot through overland flow or piped and discharged through level spreaders into the woodlots. If additional water quantity is required, site stormwater can be treated to acceptable levels prior to discharge to the woodlots through level spreaders or other best management practices.

2.7 Protecting the Public from Financial Impacts

Consideration 7:

The public should not bear a disproportionate financial burden from the development of any one parcel of land.

Discussion 7:

Schlegel has already invested heavily in site studies at this early stage of development planning and has proactively invested in the extension of municipal stormwater discharge capacity (i.e. winter bypass outlet described above) to proactively facilitate the best possible means to provide excess runoff capacity and road salt management.

Solution 7:

Schlegel is committed to the proactive and beneficial development of the Site without undue public costs.

Schlegel plans further water resources management strategies, as described above, and will implement these in a manner to ensure cost effective management and maintenance in the future. Any ongoing fiscal responsibility will be incorporated into the management of multi-residential facilities or other arrangements compatible with municipal programs and mandates with suitable financial assurance provisions.

3. Water Resources Management Plan (WRMP)Conclusions

It can be concluded that through proper (and not extraordinary) planning and design of water management (infiltration focused SWM strategies), the BSF2 lands can be developed in a sustainable manner that maintains the predevelopment water balance while also maintaining pre-development water quality. There are no technical barriers from a water resource, source water protection, or hydrogeologic perspective to developing the BSF2 lands for residential use.

In our professional opinion, full protection of both water quantity and water quality for current and future water supply as well as natural water resources receptors can be implemented at BSF2 in accordance with all

applicable provincial standards for Source Water Protection and in accordance with the Ontario Clean Water Act. The risk of adverse effects on water resources from residential development at the BSF2 site is negligible.

Sincerely

Andrew Betts M.A.Sc., P.Eng.
Water Resource Engineer

J. Richard Murphy, M.A.Sc., P.Eng.
Hydrogeologist/Engineer

JRM/kf/LTR-11

Copy to: Matt Ninomiya, WalterFedy
Tony Lotimer, ARL Groundwater Resources
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Our ref: 11213308-LTR-12-Bender

10 August 2022

Mr. Vaughn Bender
Schlegel Urban Developments
325 Max Becker Drive, Suite 201
Kitchener, ON N2E 4H5

Water Resources Management Plan
Bayer Lands
Kitchener, Ontario

Dear Mr. Bender

1. Introduction

GHD Limited (GHD) is pleased to provide this Water Resources Management Plan (WRMP) for the proposed residential development of the Bayer lands (Site) located north of New Dundee Road, east of Fischer-Hallman Road in the City of Kitchener, Ontario (legal description Part Lot 6 and 7, Beasley's New Survey, Twp of Waterloo (Part 1, 58R-2805). At the request of Schlegel Urban Developments (Schlegel), GHD, in collaboration with WalterFedy, has undertaken an evaluation of potential water resources considerations related to the proposed development and established a plan to address all identified considerations. These evaluations demonstrate that all water resource management considerations can be addressed such that water resources will be maintained as described herein.

GHD's evaluation included assessment of existing site-specific and regional information, Region of Waterloo (Region) Official Plan policies, Source Water Protection plans, the Regional Recharge Area (RRA) Delineation Study (October 2019), the Technical Approach to the Delineation of the Regional Recharge Area in the Regional Official Plan (November 2019), the Upper Cedar Creek Scoped Subwatershed Study (October 2019), the Upper Blair Creek (Kitchener) Functional Drainage Study (February 2009), and industry best practices.

Furthermore, GHD has undertaken additional focussed site-specific studies at the Site in 2022 and continues to collect water monitoring data (groundwater levels and groundwater chemistry) in collaboration with neighbouring property owners and Region staff. Recent site-specific investigations and study include:

– Extensive deep test pit geology evaluation including 18 additional test pits
– Infiltration testing based on Guelph permeameter testing at 10 locations
– Infiltration and water balance analysis using site specific conditions and local climatological data

The recent and ongoing data collection and study build on the extensive information for the Site which includes extensive geological and hydrogeological investigations by MTE (August 2020) for the Bayer lands and surrounding properties and groundwater modelling using the Region's Tier 3 Source Water Protection model in collaboration with the Region and their consultant.

The evaluation of the Water Resources Management Plan identified seven key considerations for the proposed development of the lands. These considerations and the proposed plans or solutions to address them are described below.

2. Water Resources Considerations and Solutions

2.1 Bayer Lands Should Not Be Part of the Regional Recharge Area

Consideration 1:

The Regional Official Plan (ROP) includes policy 6.B.1 for the evaluation of whether lands in southwest Kitchener, including the Bayer lands, should be considered part of the Regional Recharge Area (RRA).

Discussion 1:

The ROP includes policies that may prohibit or identify specific requirements for land development within the RRA that are intended for the protection of current and future municipal water supply as well as natural resources.

Solution 1:

The Staff Report to Region Planning and Works Committee dated August 11, 2022 identifies that the Bayer lands are not part of the RRA.

The Region report identifies that based on various technical studies for the South Kitchener Policy Area (SKPA) that were completed by the Region or completed by others and reviewed by the Region, that the Region designation of the RRA is not located east of Fisher-Hallman. Given that the Bayer lands are located east of Fisher-Hallman, they are outside of the Region's definition of the RRA. Refer to Schedule F, page 8 (pdf page 236 of 316) of the Staff Report.

It is important to emphasize that while the Bayer lands are not within the RRA, it is possible to safely develop residential land uses that protect water quantity and water quality for all water resources whether lands are within or beyond the RRA. The specific technical considerations are described in the following sections of this document.

2.2 Satisfying Source Water Protection Requirements

Consideration 2:

The Region's Source Water Protection (SWP) plans include requirements for the protection of water quantity and quality that must be satisfied by any proposed development. There are no water quality protection zones (i.e. WHPA-A,B,C,D) applicable to the Bayer lands; however, the majority of the lands are within the water quantity protection zone (i.e. WHPA-Q). [check that WHPA-Q is same as Grand River Conservation Area (GRCA) mapping of "wellhead water quantity zone"]

Discussion 2:

It is important to note that residential development is not a Provincially Significant Threat activity and does not threaten regional water quality or quantity from the perspective of either a public use (i.e., current or future water supply) or ecological dependency. Furthermore, the Site is located outside any Issue Contributing Area for road salt effects and therefore there are no prescribed Site restrictions for road salt under SWP policies.

Residential development commonly occurs and exists throughout the Region and under all the various classifications for source water protection without adverse impacts.

Solution 2:

The proposed residential development of the Bayer lands can be completed providing protection of all SWP technical requirements. The proposed development will include proactive measures to ensure suitable protection of both water quantity and quality of current and future water supplies for the Region of Waterloo.

More specific information related to source water protection considerations are provided in the following sections.

Overall, a water management plan will be implemented for the Bayer lands to mitigate against any potential SWP concerns and regional recharge and any other water resources considerations. The water management plan will use an integrated green infrastructure low impact development (LID) approach, blended with traditional SWM practices, using best management practices to maximize infiltration of "clean" water (e.g., roof and green space runoff), while also collecting and treating "less clean" water (e.g., road and parking lot runoff). The overall goals of the water management plan are to maintain the pre-development water balance, maximizing infiltration on-Site and maintaining water quality. This proposed approach draws on findings and recommendations from Ontario and local programs, guidelines, and subwatershed studies, including the *Upper Cedar Creek Scoped Subwatershed Study* and the *Upper Blair Creek (Kitchener) Functional Drainage Study Final Report.*

This approach includes approaches at 4 stages/scales of potential intervention:

1) Design – reducing impervious coverage where possible
    a. Permeable pavers for parking lots, walkways, driveways, and all suitable hardscaped areas
    b. Narrower streets (reduces impermeable surface and allows for green infrastructure in the ROW as described above)
    c. Reduced set-backs for houses minimizes impermeable surface (in the form of driveways)
2) At source (lot-level) – managing and treating rainwater as close as possible to where it falls
    a. Capture and infiltration of roof runoff: capturing this water where it falls and directing it immediately (via roof leaders) to infiltration trenches and/or rain gardens at the lot-level.
    b. Curb extensions on smaller roads where salt volumes are not a significant concern, allowing for green infrastructure measures such as tree trenches and bioswales that will filter, treat, and infiltrate water on-Site
    c. Reduce grading to 0.5-1% wherever possible (i.e. in parking lots, landscape areas, and swales) to allow for additional evapotranspiration and infiltration
    d. Parks are also a green infrastructure measure that allow for at-source infiltration. Walkways will be permeable and grade will also allow for maximum evapotranspiration and infiltration.
3) Conveyance Controls (site-level) - managing and treating rainwater as close as possible to where it falls
    a. Incorporation of greenways: behind rows of Single Family Dwellings (SFD) lots (or between lots with the backyards would abut) greenways, consisting of grassed swales and sub-surface infiltration, will facilitate distributed recharge of larger volumes of clean runoff. These greenways will manage rainwater where it falls, and during larger storm events can capture overflow from individual lot-level infiltration trenches.
4) End-of-Pipe – treatment to ensure that chloride and other potential pollutants are managed to within acceptable limits
    a. Stormwater ponds to ensure that chloride and other potential pollutants are managed within acceptable limits before discharge

In addition to meeting the goals of maximizing infiltration while maintaining water quality, this approach, which introduces additional vegetation through the Site, delivers a wide range of additional benefits, including:

– Reduced air temperatures
– Improved air quality
– Habitat improvement and connectivity
– Space for recreation and physical activity
– Climate resilience
– Carbon sequestration

2.3 Management of Runoff Quantity and Subwatershed Distribution

Consideration 3:

The drainage from the Bayer lands must be managed to control the stormwater discharge rates and maintain the subwatershed divide between the Blair Creek and Cedar Creek subwatersheds.

Discussion 3:

Schlegel's consulting team has developed suitable plans for the overall drainage and stormwater management for the Bayer lands as described by WalterFedy (Preliminary Servicing Overview, August 10, 2022) in the summary below.

Solution 3:

The Site drainage and stormwater management design will maintain the balance of flow (matching pre- to post-development discharge) between the two subcatchments, incorporating separate stormwater management facilities and off-Site discharges to downstream catchments.

Stormwater Management Background

The Bayer lands have an area of approximately 61 ha and are located approximately 750 m east of Fisher Hallman Road (Regional Road 58). The majority of the property is located within the Upper Cedar Creek Watershed which generally drains in a south-westerly direction. The north portion of the property is located within the Blair Creek Watershed that drains in a north-easterly direction. The property is located in the SKPA.

The relevant studies outlining the SWM requirements within each watershed are:

1. *Upper Blair Creek (Kitchener) Functional Drainage Study Final Report Volume I, Stantec Consulting Ltd., February 2009.*

   Upper Cedar Creek Scoped Subwatershed Study – Water Management Plan and Natural Heritage System Strategy, Matrix Solutions Inc, et. al, October 2019.

Upper Cedar Creek Subwatershed

Within the context of the Upper Cedar Creek Subwatershed, the property is located within the Detailed Study Area (DSA) identified as the SKPA.

The general stormwater management criterion for the Cedar Creek Subwatershed are:

1. *Control post-development flows to pre-development levels at the outlets from potential development areas to provide flood protection for downstream properties.*

2. *Reduce surface runoff volume from potential development areas to maintain the pre-development water budget and mitigate erosion impacts to downstream watercourses, including areas with no defined drainage features.*
3. *Provide stormwater quality control to an Enhanced standard of treatment per current Provincial criteria.*
4. *Manage chloride loadings of runoff, particularly from snowpack during spring freshet.*
5. *Infiltrate clean groundwater to maintain the groundwater supply to municipal wellfields, the Roseville Swamp, and the Upper Cedar Creek West Tributary.*

Specific SWM requirements for the Southwest Kitchener Policy Area (SKPA) are described below:

Water Quantity Control

Unitary sizing criteria for SWM facilities within the SKPA were established to mitigate the impacts of flooding and erosion. The table below summarizes the unitary storage and discharge requirements for development with the SKPA.

Unitary Storage and Discharge Criteria for Potential Future Development Within the SKPA
(per Table 3 of Upper Cedar Creek Subwatershed Study)

Storm Event	Unitary Storage (m^3/imp. ha)	Unitary Discharge (m^3/s/ ha)
2-yr	325	0.001
5-yr	475	0.002
10-yr	550	0.003
25-yr	650	0.004
50-yr	775	0.004
100-yr	825	0.006
Regional	2950	0.017

The Bayer lands is proposing to have two stormwater management facilities (SWMF), one for the catchment within the Upper Blair Creek Subwatershed at the north limit and one for the Upper Cedar Creek Subwatershed at the south limit as shown on Figure 1. The stormwater management strategy for both SWMF will include low impact development strategies (LIDS), and infiltration measures where opportunities exist. The SWMF will be designed to control post-to-pre-development flows per the current Grand River Conservation Authority (GRCA) and Ministry of the Environment, Conservation and Parks (MECP) standards, provide Level 1 or "Enhanced" quality control, and adhere to the criteria set forth in the above noted criteria. Through comprehensive hydrogeological and geotechnical study, the Bayer lands have been confirmed to contain soils conducive to infiltration and, as such, have infiltration targets reflective of soils observed within the Bayer lands through that investigative work.

The primary outlet for both SWMF shall be via infiltration with provision for overland flow to the north and south as under existing conditions. Refer to the attached Preliminary Grading and Servicing drawing (C2-1 and C3-2 respectively) for details.

Further information on management of water quantity and quality is provided in the following sections.

2.4 Maintaining the Water Quantity of Recharge and Site Discharge

Consideration 4:

The Site is located in an area of recharge to groundwater and the existing recharge quantity needs to be maintained such that there are no negative impacts to downgradient water resources, including natural resources, and in respect of the SWP water quantity protection requirements (WHPA-Q). Additionally, the quality of water for runoff and infiltration must be managed to limit potential water quality impacts from contaminants common to urban stormwater (e.g., sediment, nutrients, heavy metals, trash, and salt) from entering the groundwater.

Discussion 4:

Schlegel has conducted extensive subsurface investigations including boreholes, monitoring wells, test pits, and infiltration studies, as identified in Section 1. These investigations show that the Bayer lands consist largely of surficial soil types with moderate to low runoff potential and moderate to high infiltration. They have clearly identified areas of the Site that are underlain by deeper sand or sand and gravel deposits at/near surface that can support an elevated rate of recharge to groundwater, amenable to focused, as well as distributed, recharge to groundwater.

Solution 4:

The subsurface geology of the Bayer lands are amenable to maintaining the quantity and distribution of recharge to groundwater and any off-site discharge of runoff under proposed site development conditions. Therefore, in order to maintain the quantity of recharge at pre-development levels, infiltration measures can be prioritized across the site, with a particular focus on capturing clean roof and green space runoff and infiltrating it at its source. The stormwater generated on impervious surfaces will be treated on-Site prior to infiltration or discharge off-Site, as appropriate.

Capturing rain where it falls and directing it immediately (via roof leaders) into infiltration trenches at the SFD lot-level and rain gardens with subsurface infiltration galleries in medium-density areas reduces the opportunity for contamination and allows for immediate infiltration.

Greenways consisting of vegetated swales with sub-surface infiltration can also be incorporated as a site-level green infrastructure measure to maximize infiltration and maintain recharge. These greenways can be included behind rows of SFD lots (or between lots with backyards that would abut) and can manage rainwater where it falls, and during larger storm events can capture overflow from individual lot-level infiltration trenches.

More focussed infiltration facilities will also be incorporated as necessary to augment these more distributed infiltration approaches. Focussed infiltration facilities can include both open ponds with permeable bases and underground infiltration galleries in appropriate areas amenable to enhanced infiltration. These approaches are coupled with stormwater pond treatment facilities to ensure suitable water quality (low suspended solids) to support long-term operation with minimal maintenance.

Water from sources where some potential for contamination exists (such as smaller, lower traffic roads) can be managed through green infrastructure bioretention facilities (such as rain gardens, bioswales, tree boxes) that will treat the stormwater prior to infiltration, ensuring sufficient water quality treatment. Overflow from these green infrastructure measures can be collected in storm sewers and conveyed to stormwater ponds for further treatment and infiltration prior to discharge off-site. Infiltration of collected water will occur using a mix of greenway, open pond, and subsurface infiltration gallery facilities similar to those in demonstrated use elsewhere.

Water from sources where somewhat higher potential for contamination exists (higher-density vehicle areas such as the main north-south connection road and higher density residential parking lots) will be conveyed

through the storm sewer system to the end-of-pipe stormwater ponds where water quality treatment will be provided prior to discharge.

Together, these measures ensure that stormwater remains on site at a high-quality, maintaining the pre-development water balance.

By infiltrating as much water as possible as close to its source as possible, the aim is to replicate existing groundwater distribution and flow patterns as closely as possible, minimizing impacts to existing natural heritage features.

Special consideration will be given to the management of runoff with potential for high chloride concentration, as described in the following section.

2.5 Management of Road Salt

Consideration 5:

The potential for impact of road salt used for de-icing on groundwater quality needs to be managed to minimize such impacts.

Discussion 5:

Every new development in the Region is required to submit a "…Salt Impact Assessment in accordance with the Regional Salt Impact Assessment Protocol Guideline to the satisfaction of the Region" [ROP Section 8.B.1].

Solution 5:

The proposed residential development for the Bayer lands incorporates specific measures to limit the potential for de-icing salts to contribute to the groundwater concentrations. In addition to a salt management plan, these measures include separation of higher vehicle-density areas (arterial roads and higher density residential parking lots) with dedicated SWM facilities for proactive management of salt affected runoff to prevent infiltration to groundwater.

The Site will be designed with best management practises to minimize the use and infiltration of high chloride stormwater runoff in accordance with Region guidelines, including the Smart about Salt program. In addition, site parking lots can be designed in accordance with the Lake Simcoe Region and Conservation Authorities (LSRCA) Parking Lot Design Guidelines (LSRCA, 2017, https://www.lsrca.on.ca/parking-lot-guidelines). These state-of-the-art guidelines for parking facilities provide design methods to reduce the requirement of salt application and lower the chloride concentration in stormwater runoff.

Higher chloride stormwater runoff will result from higher vehicle-density areas. The stormwater runoff from these areas can be collected in storm sewers and directed to settling ponds for pre-treatment (Total Suspended Solids settling) prior to off-site discharge during the high chloride runoff season (winter and early spring). During the non-high chloride runoff seasons (late spring, summer and fall) the bypass can be closed, and the stormwater runoff can be diverted to an infiltration basin for groundwater recharge.

This plan includes the measures to limit the need and application of de-icing salts within the development, in addition to the diversion measure described above. Suitable measures include development of a salt management plan, minimizing grades on roads, sidewalks, and driveways, public education, contractor requirements for private parking lot snow management, Smart About Salt training for all maintenance personal, and adoption of best management practices. Schlegel will submit and implement such a plan in accordance with this existing ROP requirement.

2.6 Maintaining Water Balance for Natural Heritage Features

Consideration 6:

The Site includes an existing woodlot that will require its pre-development water balance to be maintained.

Discussion 6:

Schlegel understands the importance of the natural heritage features and the requirement to maintain their function. Their character and water-related dependencies are being studied by Schlegel's natural resources consultant. The importance of this valued woodlot is evident in the preliminary site plans and studies.

Solution 6:

Stormwater management controls designed for the site will ensure that suitable quantity, duration, and quality stormwater runoff is maintained to the woodlot based on pre-development conditions.

Existing condition topography sets the woodlot in a local sink with the surrounding area, for the most part, draining away from the woodlot. Therefore, the water balance of the woodlot can be generally maintained without any significant engineered solutions. However, where needed, Site stormwater management controls will focus on maintaining the water balance and function of the onsite woodlot. Both clean roof and green space runoff can be directed to the woodlot through overland flow or piped and discharged through level spreaders into the woodlot as necessary. If additional water quantity is required, site stormwater can be treated to acceptable levels prior to discharge to the woodlot through level spreaders or other best management practices.

2.7 Protecting the Public from Financial Impacts

Consideration 7:

The public should not bear a disproportionate financial burden from the development of any one parcel of land.

Discussion 7:

Schlegel has already invested heavily in Site studies at this early stage of development planning and is willing to proactively invest in the servicing infrastructure of the Bayer Lands and the extension of municipal services to facilitate the best possible means to protect water resources and provide off-Site runoff capacity and road salt management.

Solution 7:

Schlegel is committed to the proactive and beneficial development of the Site without undue public costs.

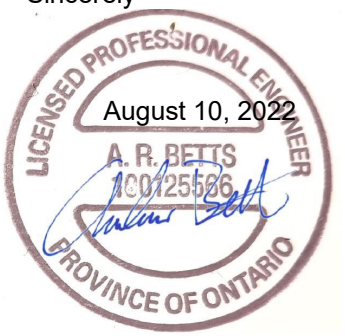
Schlegel plans further water resources management strategies, as described above, and will implement these in a manner to ensure cost effective management and maintenance in the future. Any ongoing fiscal responsibility will be incorporated into the management of multi-residential facilities or other arrangements compatible with municipal programs and mandates with suitable financial assurance provisions.

3. Water Resources Management Plan (WRMP) Conclusions

It can be concluded that through proper (and not extraordinary) planning and design of water management (infiltration focused SWM strategies), the Bayer lands can be developed in a sustainable manner that maintains the pre-development water balance while also maintaining pre-development water quality. While it is acknowledged that additional storage capacity will need to be incorporated into the SMW facilities to suitably manage off-site discharge, there are no technical barriers from a water resource, source water protection or hydrogeologic perspective to developing the Bayer lands for residential use.

In our professional opinion, full protection of both water quantity and water quality for current and future water supply as well as natural water resources receptors can be implemented at Bayer in accordance with all applicable provincial standards for Source Water Protection and in accordance with the Ontario Clean Water Act. The risk of adverse effects on water resources from residential development at the Bayer lands is negligible.

Sincerely



Andrew Betts M.A.Sc., P.Eng.
Water Resource Engineer

J. Richard Murphy, M.A.Sc., P.Eng.
Hydrogeologist/Engineer

JRM/kf/LTR-12

Copy to: Matt Ninomiya, WalterFedy
Tony Lotimer, ARL Groundwater Resources
Steve Harris, John-Eric Pardys, GHD

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Kitchener | Hamilton | Toronto | walterfedy.com

TECHNICAL MEMO

To:	Schlegel Urban Developments Corp.	Project No.:	2022-0279-10	Date:	July 26, 2021
Subject:	Preliminary Servicing Overview	Project:	BSF 2 Lands, Kitchener		
		From:	Matt Ninomiya, MBA, P.Eng.		

This memo summarizes development potential and feasibility of servicing, stormwater management, and grading of the lands municipally known as 236 Gehl Place in the City of Kitchener, herein referred to as the BSF2 lands.

The subject lands are immediately south and west of the Rosenburg Secondary Plan Area. The lands are south of the lands referred to as Area 2, which have been identified for development within the Secondary Plan. The BSF2 lands are bound to the north by the former gravel pit and Stamm Subdivision (30T-14201) to the north (Area 2 Lands), agricultural lands to the south and the west, and Area 3 residential land and the City of Kitchener's Williamsburg Cemetery to the east (see Figure 1.0 for location). The lands are also contiguous with the City of Kitchener Williamsburg Cemetery lands to the immediate east and to the already-built residential subdivision to the southeast known as the Area 4 lands, the Mattamy Trillium development and Wildflowers community. Access to the BSF2 lands is currently provided via Gehl Place from Bleams Road. In the southeastern corner of the BSF2 lands, the Amand Drive municipal right-of-way is stubbed-in in anticipation of future development of the BSF2 lands. A future roadway block is also reserved on the Stamm lands to the north to facilitate completion of the Amand Drive roadway from Huron Road to Bleams Road.

Background Information

The Amand Drive road and watermain extensions from the southeastern corner of the BSF2 lands to the northern limit of the BSF2 lands continue to be identified in the City of Kitchener Development Charges Background Study (Project #R1 W1) for design commencing in 2024 and construction in 2026. The extension of Amand Drive north through the BSF2 lands ties into the approved subdivision 30T-14201.

In the northeastern corner of the BSF2 lands, storm and sanitary sewer stubs have been constructed and presently terminate within the BSF2 lands in order to accommodate the servicing of the BSF2 lands. This is consistent with a City of Kitchener letter dated April 15, 2005, confirming that the gravity drainage limits of the Middle Strasburg Trunk Sanitary Sewer (MSTSS) fully encompass the BSF2 lands and that servicing of the community can be accommodated through the extension of the sewers through the South Estates and Williamsburg Green Subdivisions (Area 3) to the east (see attached). The City confirmed this approach prior to commencement of sewer construction works which were completed in 2021.

Drainage and Stormwater Management

Storm Sewers

The storm drainage system for the BSF2 lands shall be designed to convey both the minor and major storm events to the proposed stormwater management facilities (SWMF). As per the City of Kitchener and DGSSMS criteria, the system will be designed to collect and convey the minor storm events (≤5-year storm) via sewers to the proposed SWMF, with major storm events conveyed through overland flow routes contained within the proposed rights-of-way. Refer to the Preliminary Servicing Plan for the preliminary storm system layout.

Stormwater Management

The BSF2 lands are bisected by the drainage divide between the Strasburg Creek and the Alder Creek subwatershed areas. Drainage from the northeastern corner of the BSF2 lands flows to Strasburg Creek, ultimately draining to the Grand River. The drainage from the remaining lands flows to Alder Creek, before ultimately outletting to the Nith River. The existing topography and drainage patterns are illustrated on attached Drawing C1-2.

The stormwater management strategy for the BSF2 lands will include two SWMF, low impact development strategies (LIDS), and infiltration measures where opportunities exist, and will comply with the criteria set forth in the *Alder Creek Watershed Study and Upper Strasburg Creek Subwatershed Plan Update* (CH2M Hill, January 2008). This subwatershed plan was an update of the *Strasburg Creek Master Watershed Plan* (Paragon, 1991) establishing stormwater management requirements including peak flow targets and average annual infiltration targets. The SWMF will be designed to control post-to-pre-development flows per the current Grand River Conservation Authority (GRCA) and Ministry of the Environment, Conservation and Parks (MECP) standards, provide Level 1 or "Enhanced" quality control, and adhere to the criteria set forth in the aforementioned subwatershed plan update. Through comprehensive hydrogeological and geotechnical study, the BSF2 lands have been confirmed to contain soils conducive to infiltration and, as such, have infiltration targets reflective of soils observed within the BSF2 lands through that investigative work.

As previously noted, the subject lands will drain to two SWMF, SWMF1 is located at the eastern limit of the BSF2 lands, adjacent to the existing wooded area and the Williamsburg Cemetery. While the primary outlet of SWMF1 will be via infiltration, the SWMF has a pipe outlet to the northeast, ultimately outletting to Strasburg Creek via the Williamsburg Green subdivision, at the southwestern corner of Fischer-Hallman Road and Bleams Road. As noted earlier, this dedicated storm sewer was constructed in 2021 as part of the servicing of the South Estates and Williamsburg Green subdivisions.

SWMF2 is located within the Alder Creek subwatershed and is located adjacent to the southern property boundary. The primary outlet for SWMF2 shall be via infiltration with provision for overland flow to the south as under existing conditions. Refer to the attached Preliminary Grading and Servicing drawing (C3-2) for details.

Wastewater

The wastewater servicing strategy for the BSF2 lands connects into the sanitary sewer stub located in the northeastern corner of the BSF2 lands. The sanitary stub was constructed in 2021 and was sized to accommodate a total area of 65.62 ha. A previous analysis of the downstream system Sewer (*Henhoeffer South Lands, Gravity Sanitary Drainage Assessment*, Stantec, December 20, 2004) concluded that there is available capacity within the MSTSS to service the lands and that the lands can be serviced via gravity sewer. As confirmed in the aforementioned letter from the City, as well as through subsequent communication with the City, sufficient capacity is available in the Middle Strasburg Trunk Sanitary Sewer.

Servicing for the adjacent South Estates subdivision included the extension of a 525-mm-diameter sanitary trunk sewer to the eastern property limits of the BSF2 lands, with an approximate design invert of 340.00 m at its terminus. Refer to the Preliminary Servicing Plan (C3-2) for the conceptual system layout, complete with connections provided for the neighbouring lands. Based on the South Estates Subdivision Sanitary Sewer Design Sheets, the 525-mm-diameter sewer is sized to accommodate a total area of 65.62 ha, equivalent to a population of 11,008.

Water

The BSF2 lands will be located within Pressure Zone 5 (PZ5) of the City of Kitchener distribution zone. As noted in the *Stamm Subdivision, Functional Servicing Report* (FSR), prepared by MTE Consultants Inc., dated February 8, 2017, the hydraulic grade line within PZ5 is 407 m with an approximate serviceability range of 351 to 371 m, and with a normal operating pressure between 350 to 500 kPA (50 to 70 psi).

The water servicing strategy for the subject lands, as per the aforementioned FSR, includes extending the 300-mm-diameter watermain from its existing location at the northern terminus of Amand Drive at the southeastern limit of the BSF2 lands, running north along the proposed alignment of Amand Drive, and connecting to the Stamm subdivision at

the northern limit of the BSF2 lands. Based on the FSR, this future 300-mm-diameter watermain will continue through the Stamm subdivision, connecting to the existing 450-mm-diameter Regional watermain on Bleams Road. There is also a second connection planned to the existing 300-mm-diameter watermain stubbed at Rosenberg Way at the boundary between the Area 2 and Area 3 lands.

The BSF2 lands will provide looping of the watermain through an internal network of local watermain at standard design depths and sizes to accommodate the proposed development.

Transportation

As part of developing the subject lands, a road network connecting the existing community to the south and the proposed community to the north is provided. The proposed concept includes the missing link connecting the existing Amand Drive stub to the southeast to the future connection at the Stamm subdivision. The EA for this "missing link" of Amand Drive is identified in the City of Kitchener DC Background Study to commence in 2024. The internal roadwork shall include stubs connecting to communities to the north and the south of the BSF2 lands. Excluding Amand Drive, this internal road network will be comprised of local roads with right-of-way widths of 18.0 to 20.0 m.

Utilizing a modified grid network and through the provision of connections between built and planned communities, pedestrian, cyclist, and vehicular connectivity will be maximized. The proposed road and trails network will assist in creating linkages of the various forms of transportation (active transportation via trails and vehicular transportation) to aid in the creation of a complete community.

Utilities

Utility servicing will be provided through the existing connections to existing Amand Drive to the south and the future connection to the Stamm subdivision. Further coordination with Kitchener-Wilmot Hydro (hydro), Bell Canada and Rogers (telecommunications), and Kitchener Utilities (natural gas) will be required as the detailed design proceeds to ensure the development is adequately serviced.

Grading

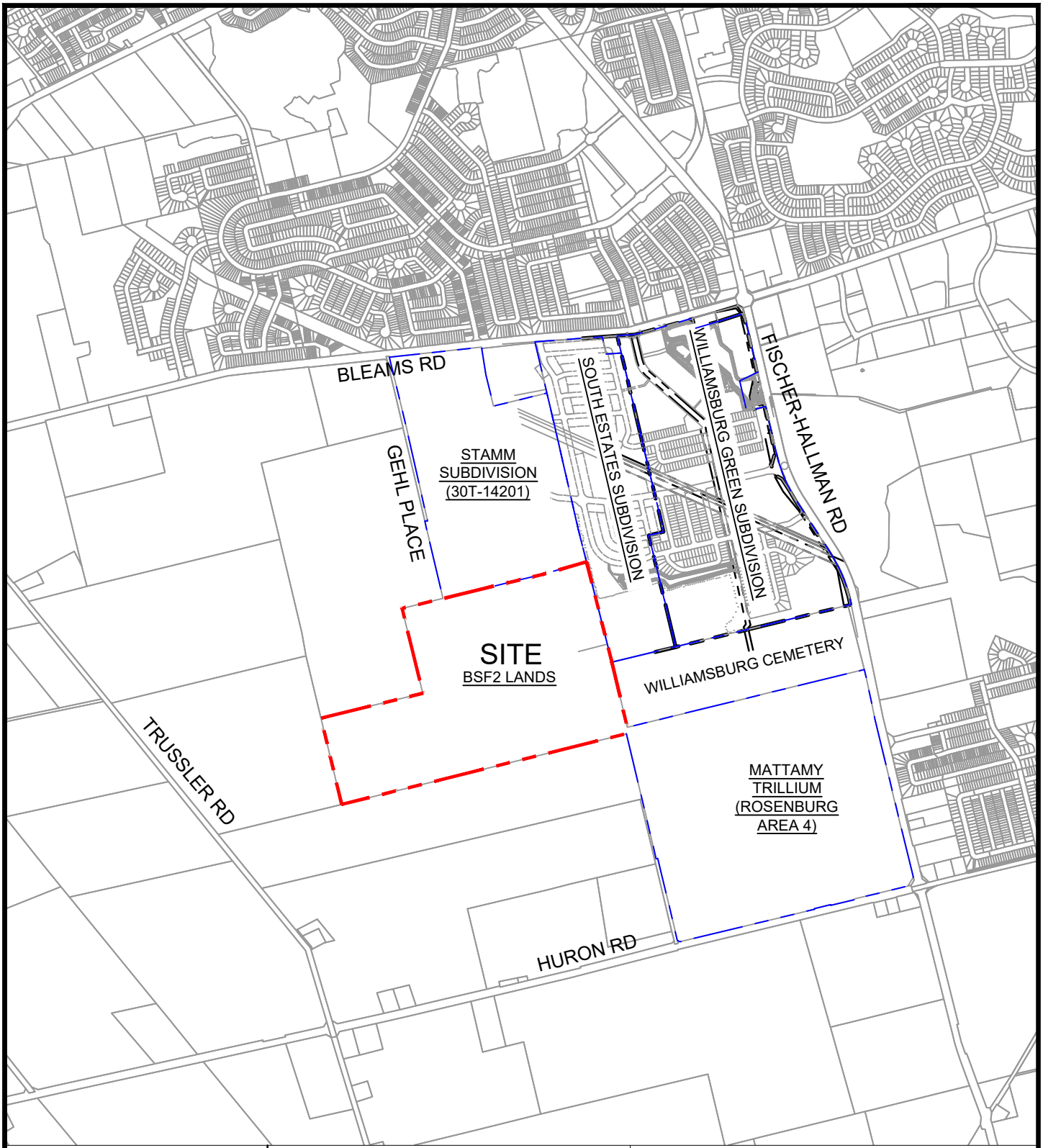
The subject lands will be graded such that the lands drain to proposed stormwater management facilities and ultimately to the previously identified outlets. The lands have topography which is efficient for servicing. The existing surrounding grading will be maintained and the grading design will include best efforts to achieve cut-to-fill balance on BSF2 lands and/or limit the import/export of soil. Refer to attached Drawing C2-1 for conceptual grading.

Conclusions

Based on this review, it is concluded that:

- The subject lands can be adequately serviced through both existing and planned infrastructure (sanitary, storm, and watermain), for which sanitary and dedicated storm sewer stubs exist at the property line of the BSF2 lands
- There is sufficient wastewater capacity in the Middle Strasburg Trunk Sanitary Sewer for the development.
- The proposed concept plan provides for the important completion of missing linkages for all forms of active transportation within the greater Rosenburg community.

The subject lands will be a 15 minute master planned community and complement and provide for the connectivity of the surrounding neighbourhoods and allow for a logical completion and community boundary of the Rosenburg planning area.



PROJECT:

BFS2 LANDS

Kitchener, Ontario

TITLE:

LOCATION PLAN

WALTERFEDY

KITCHENER OFFICE
675 Queen Street South, Suite 111, Kitchener, Ontario N2M 1A1
T: 519.576.2150 F: 519.576.5499 walterfedy.com

SCALE:	1:20,000	DATE:	2022-07-26
DRAWN BY:	KDB	PROJECT NO.:	2022-2079-10
CHECKED BY:	MN	FILE:	2022-0279-10_Location

SHEET NO.:

FIG 1.0

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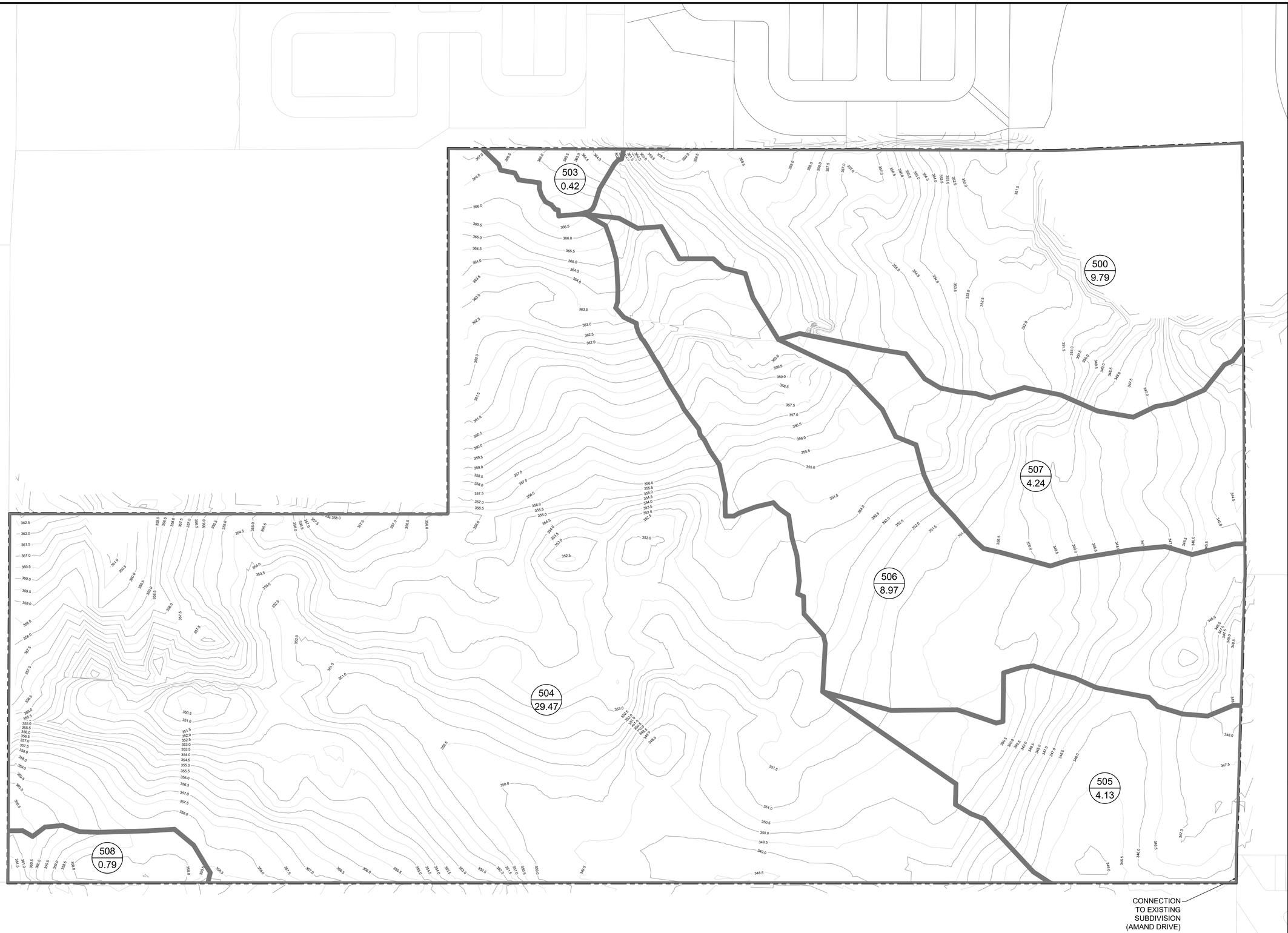

KEY PLAN

North

DATE	ISSUANCE	NO.
YYYY.MM.DD	ISSUED FOR...	

LEGEND

EXISTING/PROPOSED STORM DRAINAGE AREA

10 / 0.75 — CATCHMENT ID / AREA IN HECTARES

CLIENT

PROJECT

BFS2

Kitchener, Ontario

TITLE

EXISTING CONDITIONS PLAN WITH AERIAL PHOTOGRAPHY
SHEET 2 OF 2

WALTERFEDY
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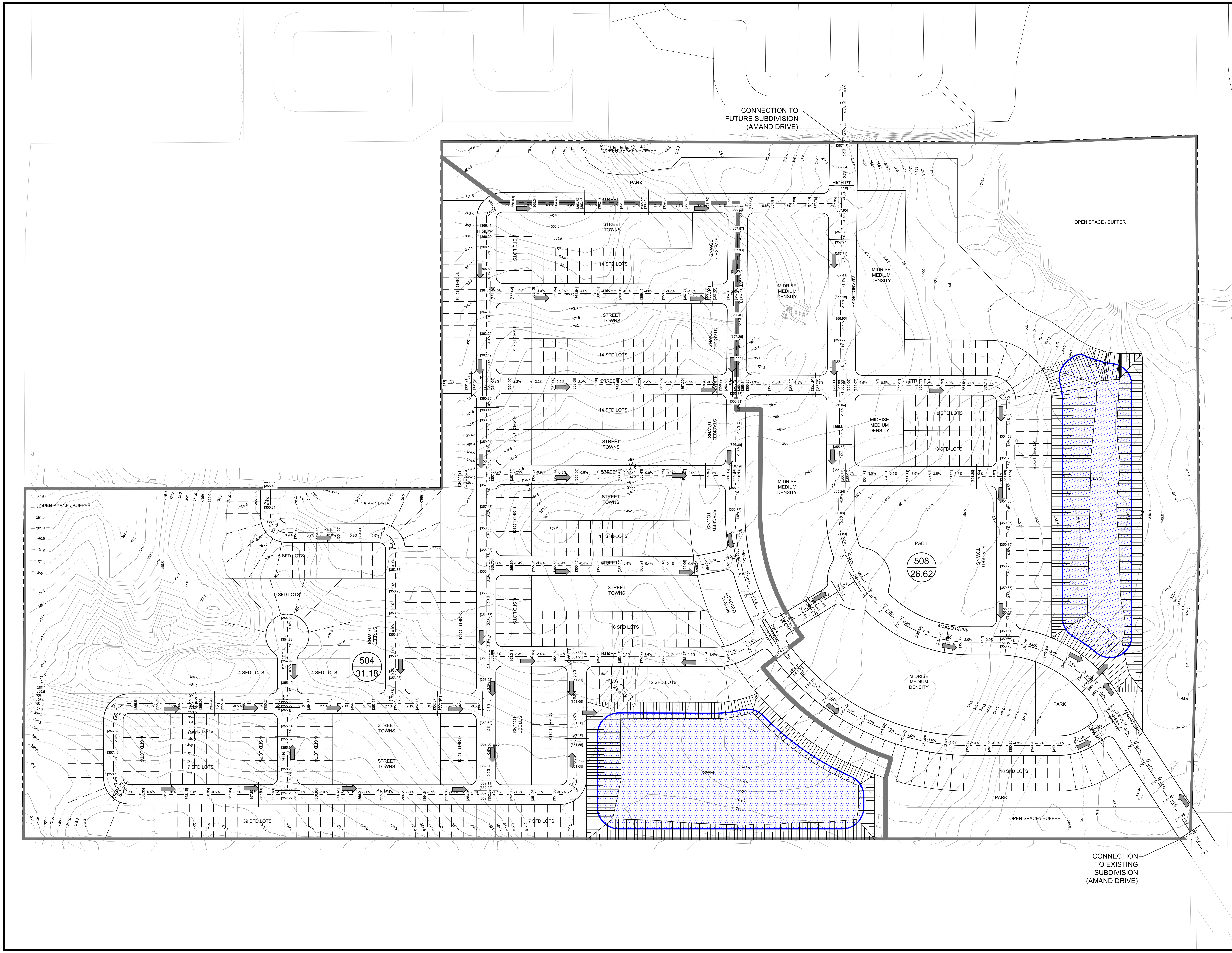
SCALE:	1:1500
DATE:	2022-06-23
PROJECT NO.:	2022-0297-10
DRAWN BY:	KDB
CHECKED BY:	MN

SHEET NO.:

C1-2



KEY PLAN

North

DATE	ISSUANCE	NO.
YYYY.MM.DD	ISSUED FOR...	

LEGEND

PROPOSED SANITARY SEWER/SERVICE

PROPOSED STORM SEWER/SERVICE

CLIENT

PROJECT

BFS2

Kitchener, Ontario

TITLE

CONCEPTUAL GRADING PLAN
SHEET 1 OF 1

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SCALE:	1:1500	SHEET NO.:
DATE:	2022-06-17	C2-1
PROJECT NO:	2022-0297-10	
DRAWN BY:	KDB	
CHECKED BY:	MN	

CONNECTION TO FUTURE SUBDIVISION (AMAND DRIVE)

OPEN SPACE / BUFFER

PARK

STREET A

STREET TOWNS

14 SFD LOTS

STACKED TOWNS

8 SFD LOTS

4 SFD LOTS

STREET E

STREET K

STREET B

STREET C

STREET F

STREET G

STREET D

STREET J

STREET I

STREET H

MIDRISE MEDIUM DENSITY

AMAND DRIVE

OPEN SPACE / BUFFER

8 SFD LOTS

SWM

25 SFD LOTS

15 SFD LOTS

9 SFD LOTS

12 SFD LOTS

4 SFD LOTS

7 SFD LOTS

6 SFD LOTS

16 SFD LOTS

12 SFD LOTS

14 SFD LOTS

PARK

18 SFD LOTS

OPEN SPACE / BUFFER

39 SFD LOTS

7 SFD LOTS

CONNECTION TO EXISTING SUBDIVISION (AMAND DRIVE)

KEY PLAN

North

DATE	ISSUANCE	NO.
YYYY.MM.DD	ISSUED FOR...	

LEGEND

PROPOSED SANITARY SEWER/SERVICE

PROPOSED STORM SEWER/SERVICE

CLIENT

PROJECT

BFS2

Kitchener, Ontario

TITLE

CONCEPTUAL SERVICING PLAN
SHEET 2 OF 2

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SCALE:	1:1500
DATE:	2022-06-01
PROJECT NO.:	2022-0297-10
DRAWN BY:	KDB
CHECKED BY:	MN

SHEET NO.: C3-2

WALTERFEDY

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TECHNICAL MEMO

To:	Schlegel Urban Developments Corp.	Project No.:	2022-0280-10	Date:	Aug 10, 2021
Subject:	Preliminary Servicing Overview	Project:	Bayer Lands, New Dundee, Kitchener		
		From:	Matt Ninomiya, MBA, P.Eng.		

This memo summarizes the development potential and feasibility of servicing, stormwater management, and grading of the lands municipally known as 1872 New Dundee Road in the City of Kitchener, herein referred to as the Bayer lands.

1.0 Background Information

The Bayer lands are part of the Southwest Kitchener Policy Area (SKPA) and are identified by the Region of Waterloo to be NOT designated as Protected Countryside and inside the Countryside Line. The Bayer lands are situated immediately north of New Dundee Road and approximately 750 m east of Fischer-Hallman Road with agricultural land use adjacent to the property on all sides. The land also includes an existing woodlot located in the northern portion of the site. The Bayer lands surround 1878 New Dundee Road, a rural residential property complete with outbuildings.

A review of the City of Kitchener mapping and the *Evaluation of Sanitary Servicing Alternatives* (Stantec, 2008) indicates that the Bayer lands have been considered in the City's future servicing scheme with the logical and orderly extension of municipal services available to be extended to the Bayer lands. A review of the mapping shows that there is a sanitary drainage divide; this split divides the Bayer lands between the Strasburg South and Beihn Drive trunk sewers (31.63 Ha) and the Doon South SPS sanitary (27.52 Ha) catchment areas. The portion of the lands within the Strasburg South and Beihn Drive catchment is further subdivided into a subcatchment serviced by gravity sewers (26.65 Ha) and a second subcatchment serviced by a future sanitary pump station (4.98 Ha). Refer to Attachment 1.1 for the Drainage Area Plan (Figure 6.0) by Stantec as modified with updated sewer information.

Available connection points for the orderly extension of the municipal water infrastructure are summarized as follows:

- The existing City of Kitchener 450 mm diameter watermain stub is located at the intersection of Fischer-Hallman Road and Wallaceton Way,
- The existing Region of Waterloo 600 mm diameter watermain stub at the end of existing Strasburg Road, and
- The existing City of Kitchener 300 mm diameter watermain stub on Blair Creek Drive at the Shaded Creek Drive SWMF.

In addition to the existing connection points, the City of Kitchener Development Charges Background Study identifies several projects in the area that support the servicing of the Bayer lands including the following:

- ***Doon South SPS Forcemain***
  - The project includes an update to the Class EA study and includes the design and construction of approximately 2,200m of 300 mm diameter sanitary forcemain from the Doon South SPS to the 600mm diameter gravity sewer feeding to the Homer Watson Pumping Station on Doon Village Road.
  - Project Horizons based on funding year are;
    - 2026 for EA update and preliminary design,
    - 2027 for design and tender, and
    - Construction in 2028.
- ***Dodge Drive Sanitary Sewer and Road Restoration***

  - The project includes preliminary and detailed design as well as construction for approximately 1.2 km of 600mm diameter sanitary trunk sewer and road restoration
  - Project Horizons based on funding year are:
    - Design and tender in 2027 with
    - Construction in 2028.

- ***Biehn Drive and Sanitary Trunk Extension EA (Project No. SA1)***
  - Project scope includes the Class Environmental Assessment, preliminary and detailed design and construction of 660 m of road and trunk sewer, extending west from the existing terminus to the future Robert Ferrie Drive.
  - Project Horizons based on Funding Year are;
    - Class EA assessment completed in 2020 (it is noted that at the time of writing, the Class EA assessment is still underway),
    - Design and tender in 2021, and
    - Construction in 2022.

- ***Strasburg Road South Road and Watermain Extension (Project No. R7 W4)***
  - Project scope includes the preliminary and detailed design and construction of 2.5 km of road, extending Strasburg Road complete with watermain and storm sewers from the current termination point to New Dundee Road with a roundabout.
  - Project Horizons based on Funding Year are;
    - Design and tender in 2023, and
    - Construction in 2024/2028.

- ***Blair Creek Drive – Road and Watermain Extension***
  - The project includes Class EA study, preliminary and final Design and Construction of 700 m of roadway, including the installation of a 300 mm diameter watermain. The inclusion of sanitary sewers will be reviewed during the EA study.
    - Class EA assessment completed in 2022 (it is noted that at the time of writing, the Class EA assessment is still underway),
    - Design and tender in 2025, and
    - Construction in 2026.

Excerpts from the *Development Charges Background Study* (Hemson, March 31, 2022) have been enclosed (Attachments 1.2-1.7) for additional project details.

Refer to Attachment 1.1 for an illustration of the existing connection points to the municipal system.

2.0 Drainage and Stormwater Management

2.1 Stormwater Management Background

The Bayer lands have an area of approximately 61 ha and are located approximately 750 m east of Fisher Hallman Road (Regional Road 58). The majority of the property is located within the Upper Cedar Creek Watershed which generally drains in a south-westerly direction. The north portion of the property is located within the Blair Creek Watershed that drains in a north-easterly direction. The property is located in the SKPA.

The relevant studies outlining the SWM requirements within each watershed are:

1. *Upper Blair Creek (Kitchener) Functional Drainage Study Final Report Volume I*, Stantec Consulting Ltd., February 2009.

2. *Upper Cedar Creek Scoped Subwatershed Study – Water Management Plan and Natural Heritage System Strategy*, Matrix Solutions Inc, et. al, October 2019.

2.2 Upper Cedar Creek Subwatershed

Within the context of the Upper Cedar Creek Subwatershed, the property is located within the Detailed Study Area (DSA) identified as the SKPA.

The general stormwater management criterion for the Cedar Creek Subwatershed are:

1. Control post-development flows to pre-development levels at the outlets from potential development areas to provide flood protection for downstream properties.

2. Reduce surface runoff volume from potential development areas to maintain the pre-development water budget and mitigate erosion impacts to downstream watercourses, including areas with no defined drainage features.

3. Provide stormwater quality control to an Enhanced standard of treatment per current Provincial criteria.

4. Manage chloride loadings of runoff, particularly from snowpack during spring freshet.

5. Infiltrate clean groundwater to maintain the groundwater supply to municipal wellfields, the Roseville Swamp, and the Upper Cedar Creek West Tributary.

Specific SWM requirements for the Southwest Kitchener Policy Area (SKPA) are described below:

2.3 Water Quantity Control

Unitary sizing criteria for SWM facilities within the SKPA were established to mitigate the impacts of flooding and erosion. The table below summarizes the unitary storage and discharge requirements for development with the SKPA.

Unitary Storage and Discharge Criteria for Potential Future Development Within the SKPA
(per Table 3 of Upper Cedar Creek Subwatershed Study)

Storm Event	Unitary Storage (m^3/imp. ha)	Unitary Discharge (m^3/s/ ha)
2-yr	325	0.001
5-yr	475	0.002
10-yr	550	0.003
25-yr	650	0.004
50-yr	775	0.004
100-yr	825	0.006
Regional	2950	0.017

The Bayer lands is proposing to have two stormwater management facilities (SWMF), one for the catchment within the Upper Blair Creek Subwatershed at the north limit and one for the Upper Cedar Creek Subwatershed at the south limit as shown on Figure 1. The stormwater management strategy for both SWMF will include low impact development strategies (LIDS), and infiltration measures where opportunities exist. The SWMF will be designed to control post-to-pre-development flows per the current Grand River Conservation Authority (GRCA) and Ministry of the Environment, Conservation and Parks (MECP) standards, provide Level 1 or "Enhanced" quality control, and adhere to the criteria set forth in the above noted criteria. Through comprehensive hydrogeological and geotechnical study, the Bayer lands have been confirmed to contain soils conducive to infiltration and, as such, have infiltration targets reflective of soils observed within the Bayer lands through that investigative work.

The primary outlet for both SWMF shall be via infiltration with provision for overland flow to the north and south as under existing conditions. Refer to the attached Preliminary Grading and Servicing drawing (C2-1 and C3-2 respectively) for details.

3.0 Wastewater

As previously noted, the City has several Development Charge (DC) projects identified in the area that extend sanitary servicing towards the subject lands. Servicing the site entails extending the services from the existing and future terminus locations to the site through adjacent development.

The requirements to service the Bayer lands are as follows;

- Extend the Strasburg Trunk Sanitary sewer from the existing terminus on Rockcliff Drive south to the west property limits (approximately 1.2 km), or
- Extend the Beihn Drive Trunk Sanitary sewer from the terminus at Beihn Drive to the northeast property limits (approximately 1.7 km), and
- Extend the Dodge Drive sanitary from the terminus on Dodge Drive to the east property limits (approximately 3.3 km).

Refer to Figure 2.0 for a conceptual external sanitary layout.

As shown on Attachment 1.1, the northern portion of the Bayer lands are within Drainage Area 104. Note 1 on the attachment states that it is anticipated that flows from Drainage Area 104 are to be split between the Strasburg South and Biehn Drive trunk sewers. As part of the servicing overview, a preliminary alignment for each sewer was developed and the inverts estimated at the limits of the Bayer lands to confirm the Bayer lands could outlet to both trunk sewers via gravity sewers. Further detailed analysis will be required to determine the most efficient and optimized drainage area outletting to each outlet.

As with the Biehn Drive and Strasburg South trunk sewers, a preliminary alignment was laid out for the Doon South Trunk sewer and the inverts estimated at the property boundary. Based on the calculated inverts the remaining south portion of the Bayer lands is able to outlet to the Doon South Trunk Sewer via gravity sewers.

Once services have been extended to the Bayer Lands, the internal servicing consists of local sewers outletting to the aforementioned outlets. Figure 3.0 illustrates the potential servicing layout.

4.0 Watermain

The Bayer lands will be located within Pressure Zone 5 (PZ5) of the City of Kitchener distribution zone. The water servicing strategy for the Bayer lands relies on the extension of the existing mainline watermain from current termination locations to the Bayer lands and surrounding area. These works include;

- Extending the City of Kitchener 450 mm diameter watermain stub located at the intersection of Fischer-Hallman Road and Wallaceton Way south, towards New Dundee Road.
- Extending the Region of Waterloo 600 mm diameter watermain stub at the end of existing Strasburg Road to New Dundee Road (DC Project No. R7 W4), and
- Extending the 300 mm watermain on Blair Creek Drive west along the future Blair Creek Drive extension.

It is anticipated that these proposed works will provide servicing to the Bayer lands via direct connection to these new services (i.e. the 600 mm watermain on Strasburg Road) or through local connections provided through adjacent developments. The Bayer lands will provide looping of watermain through an internal network of local watermain at standard design depths and sizes to accommodate the proposed development.

5.0 Transportation

As part of developing the Bayer lands, a road network connecting the community will be provided. The proposed concept includes the links to the future Strasburg Road extension, to New Dundee Road and local connections to future developments to the north, east and west. The Bayer lands are an important link to connect an important east to west neighbourhood collector street (Blair Creek Drive). Utilizing a modified grid network and through the provision of connections between built and planned communities, pedestrian, cyclist, and vehicular connectivity will be maximized. The proposed road and trails network will assist in creating linkages of the various forms of transportation (active transportation via trails and vehicular transportation) to aid in the creation of a complete community.

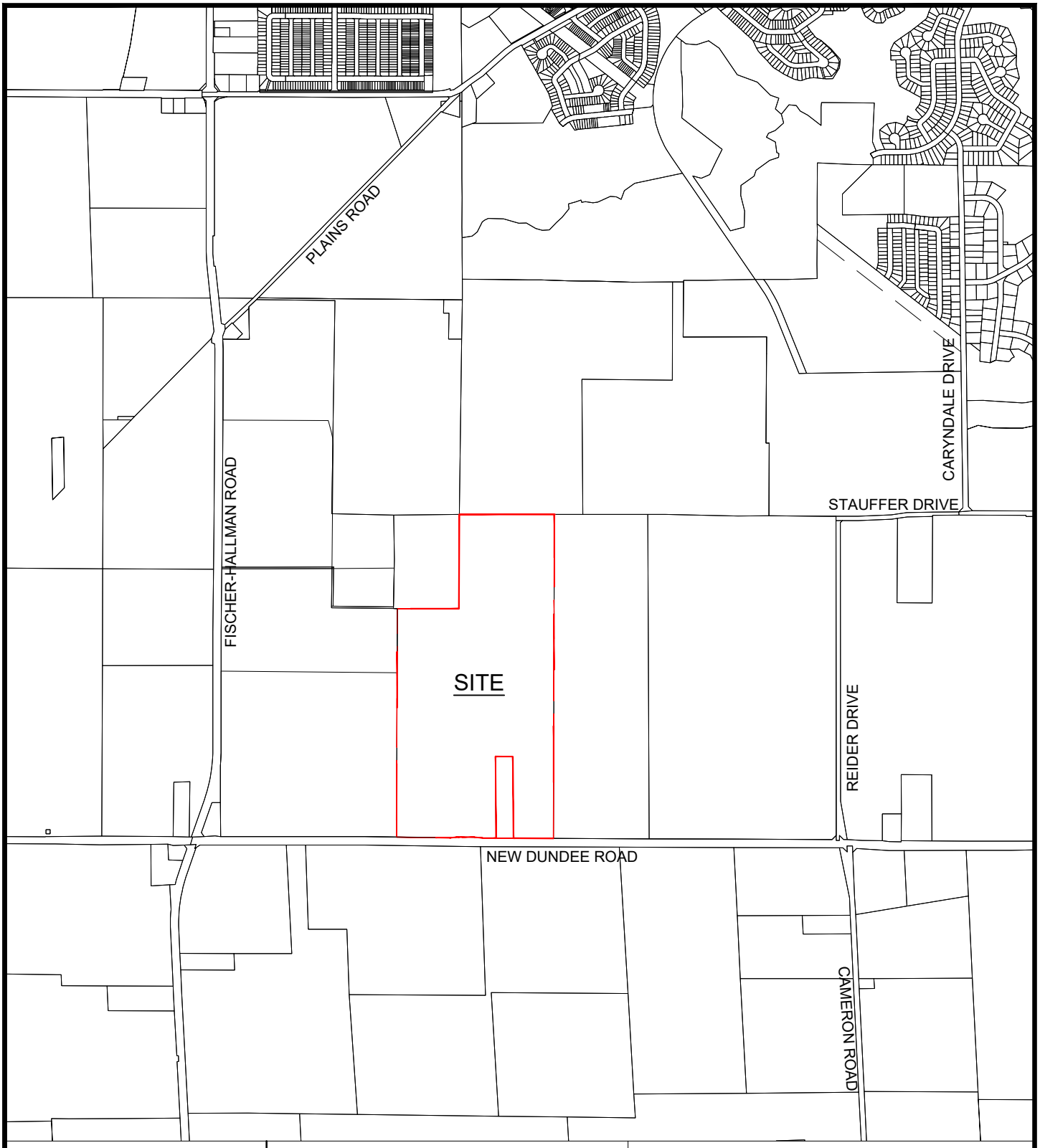
6.0 Grading

The Bayer lands will be graded such that the lands drain to proposed stormwater management facilities and ultimately to the previously identified outlets. The lands have topography which is efficient for servicing. The existing surrounding grading will be maintained, and the grading design will include best efforts to achieve cut-to-fill balance on-site and limit the import/export of soil.

7.0 Conclusions

Based on this review, it is concluded that:

- The subject lands can be efficiently and adequately serviced through both existing and planned infrastructure (sanitary, storm, and watermain)
- The proposed concept plan provides for linkages for all forms of active transportation within the greater community



PROJECT:

BAYER LANDS

TITLE:

LOCATION PLAN

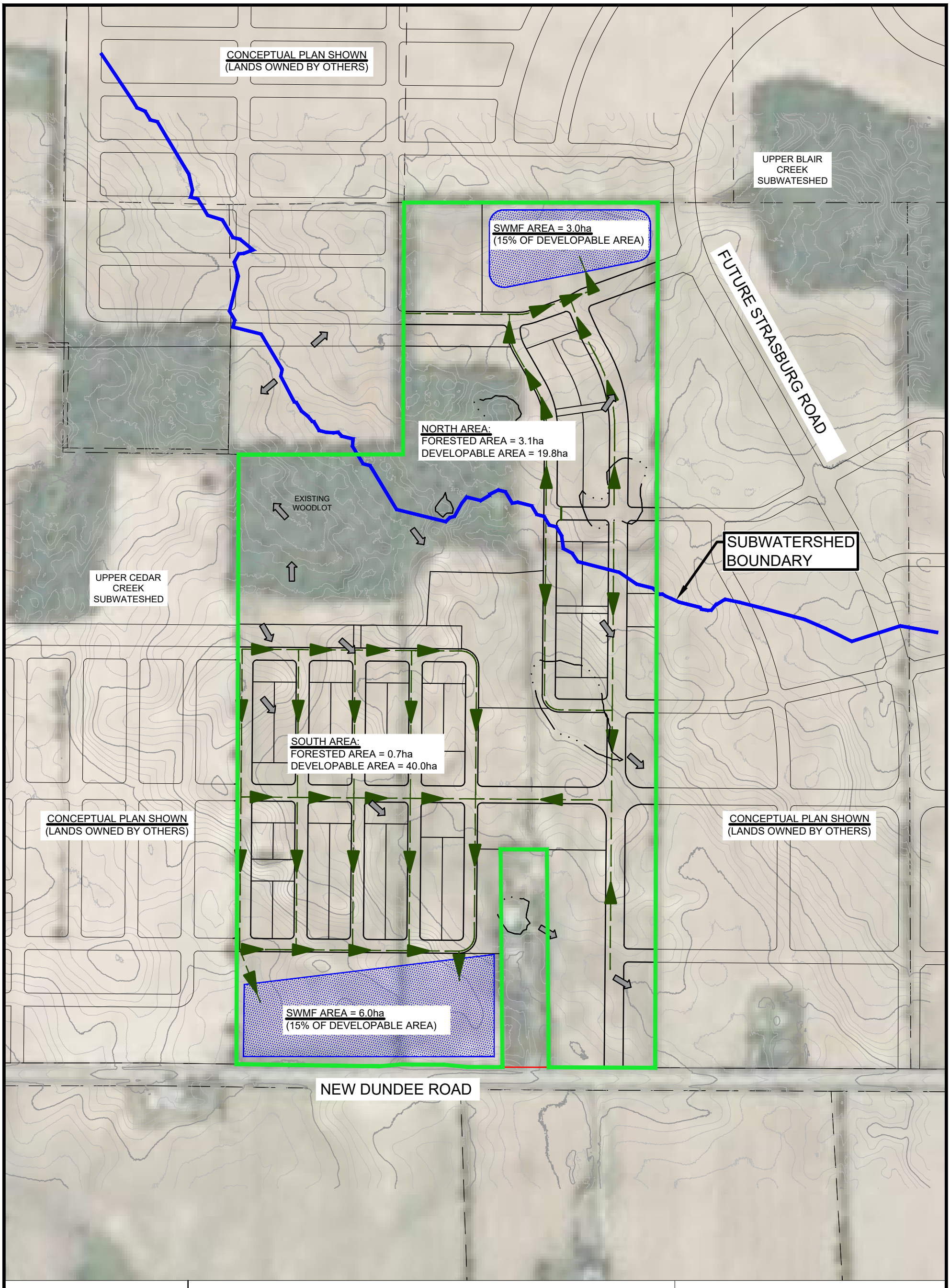
WALTERFEDY

KITCHENER OFFICE
675 Queen Street South, Suite 111, Kitchener, Ontario N2M 1A1
T: 519.576.2150 F: 519.576.5499 walterfedy.com

SCALE:	1:20000	DATE:	2022-07-27
DRAWN BY:	KDB	PROJECT NO.:	2020-0000-00
CHECKED BY:	MN	FILE:	2022-0280-10_LOCATION_PLT

SHEET NO.:

FIGURE 1



PROJECT:
BAYER LANDS

TITLE:
PRELIMINARY STORM SERVICING LAYOUT

WALTERFEDY
KITCHENER OFFICE
675 Queen Street South, Suite 111, Kitchener, Ontario N2M 1A1
T: 519.576.2150 F: 519.576.5499 walterfedy.com

SCALE:	1:5000	DATE:	2022-07-27
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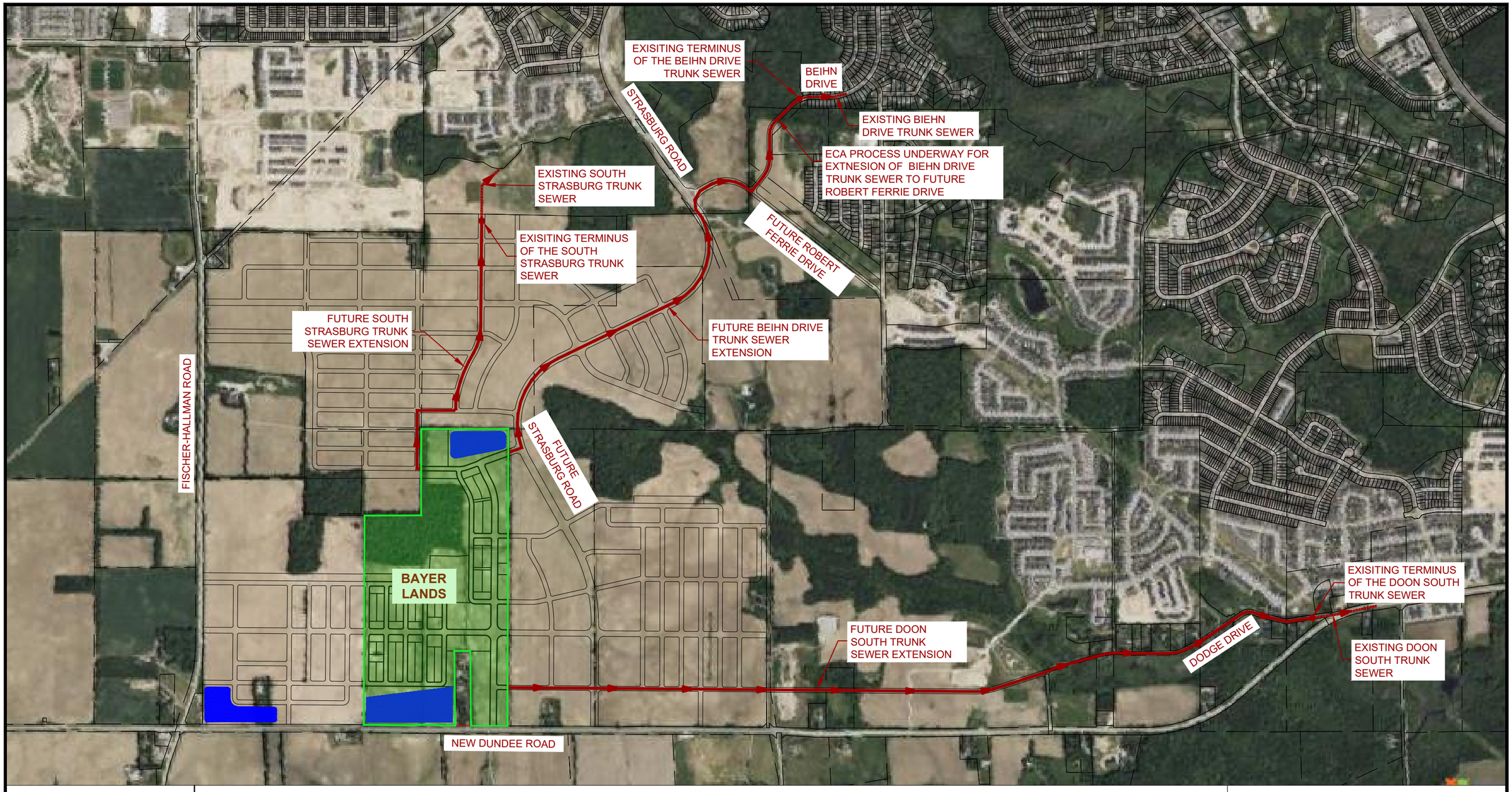
CHECKED BY:	MN	FILE:	2022-0280-10_SRV_PLT

SHEET NO.:

FIGURE 2



PROJECT:

BAYER LANDS

TITLE:

EXTERNAL SANITARY SERVICING

WALTERFEDY

KITCHENER OFFICE
675 Queen Street South, Suite 111, Kitchener, Ontario N2M 1A1
T: 519.576.2150 F: 519.576.5499 walterfedy.com

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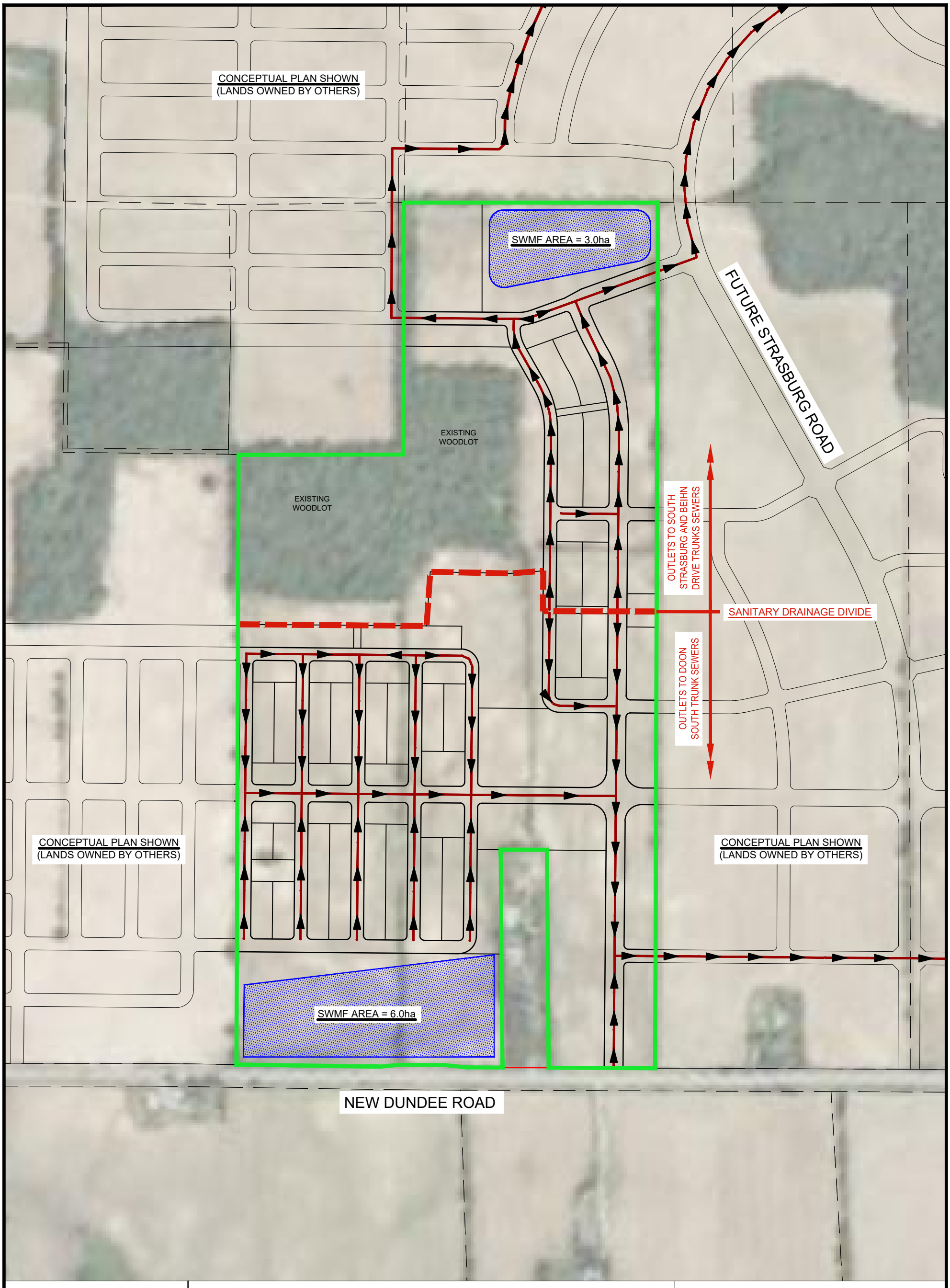
SHEET NO.:

FIGURE 3

P:\2022\0280\10\06-DWGS\CIVIL\Plot_Files\2022-0280-10_SRV_PLT; FIGURE 3; None; Robert Barnett; 2022-07-27 4:10:17 PM



PROJECT:

BAYER LANDS

TITLE:

PRELIMINARY SANITARY SERVICING LAYOUT

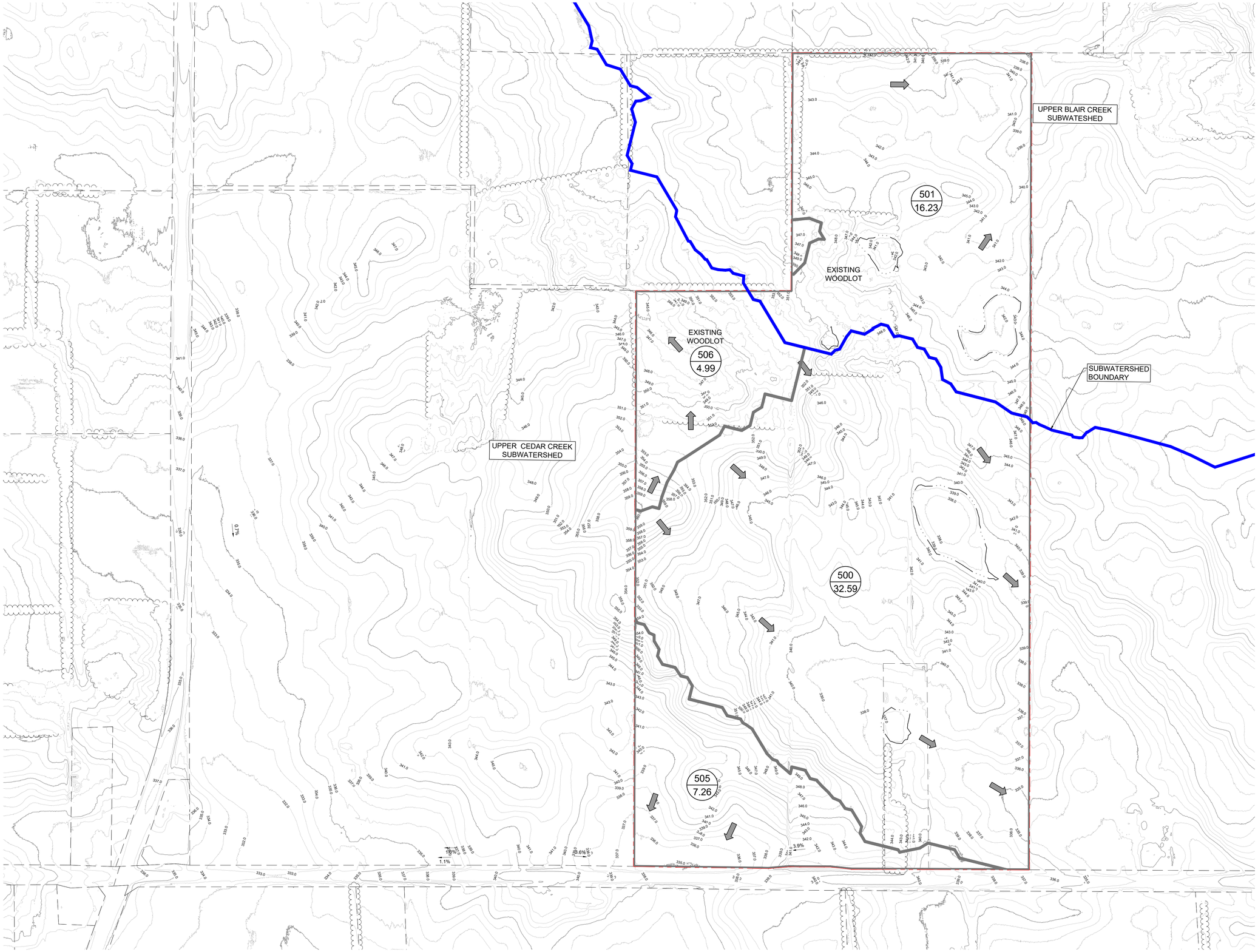
WALTERFEDY

KITCHENER OFFICE
675 Queen Street South, Suite 111, Kitchener, Ontario N2M 1A1
T: 519.576.2150 F: 519.576.5499 walterfedy.com

SCALE:	1:5000	DATE:	2022-07-27
DRAWN BY:	REB	PROJECT NO.:	2022-0280-10
CHECKED BY:	MN	FILE:	2022-0280-10_SRV_PLT

SHEET NO.:

FIGURE 4



KEY PLAN

North

DATE	ISSUANCE	NO.
YYYY.MM.DD	ISSUED FOR...	

LEGEND

- PROPOSED OVERLAND FLOW ROUTE
- EXISTING/PROPOSED STORM DRAINAGE AREA
- 10 / 0.75 — AREA ID / AREA IN HECTARES
- EXISTING TREE DRIPLINE AND/OR VEGETATION LINE
- 325.0 — EXISTING CONTOUR
- DEPRESSION AREA

CLIENT

PROJECT

BAYER LANDS

TITLE

EXISTING CATCHMENT AREA & CONDITIONS PLAN
SHEET 1 OF 1

WALTERFEDY
KITCHENER | HAMILTON | TORONTO
800.685.1378 walterfedy.com

SCALE:	1:2500
DATE:	2022-05-24
PROJECT NO.:	2022-0280-10
DRAWN BY:	KDB
CHECKED BY:	MN

SHEET NO.:

C1-1

UPPER BLAIR CREEK SUBWATESHED

FUTURE STRASBURG ROAD

EXISTING WOODLOT

EXISTING WOODLOT

SUBWATERSHED BOUNDARY

UPPER CEDAR CREEK SUBWATERSHED

FISCHER HALLMAN ROAD

SANITARY PUMPING STATION

NEW DUNDEE ROAD

FORCEMAIN TO FUTURE STRASBURG ROAD

KEY PLAN

North

DATE	ISSUANCE	NO.
YYYY.MM.DD	ISSUED FOR...	

LEGEND

PROPOSED SANITARY SEWER/SERVICE

PROPOSED STORM SEWER/SERVICE

CLIENT

PROJECT

BAYER LANDS

TITLE

CONCEPTUAL GRADING PLAN
SHEET 1 OF 1

WALTERFEDY

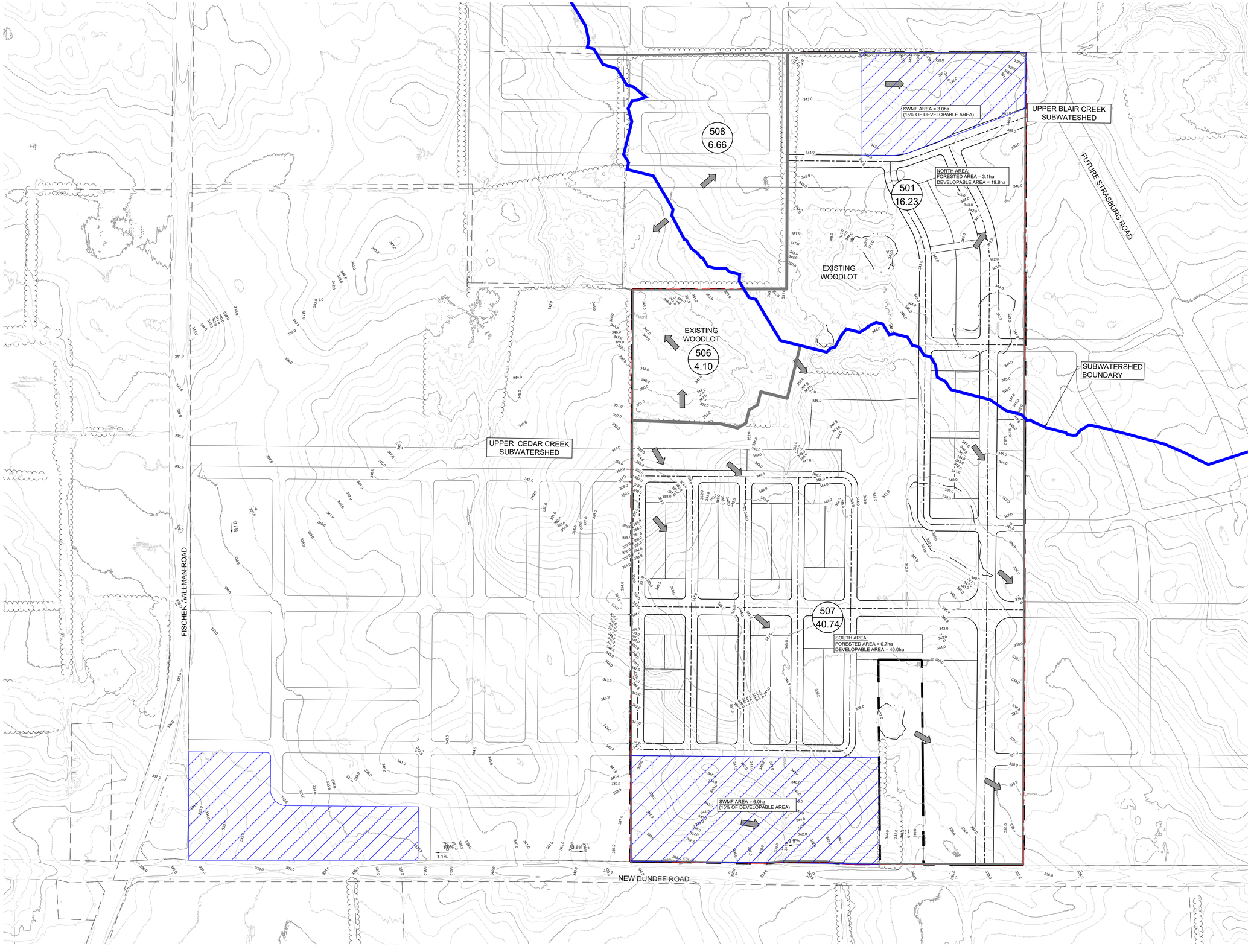
KITCHENER | HAMILTON | TORONTO

800.685.1378 walterfedy.com

SCALE:	1:2500
DATE:	2022-06-17
PROJECT NO.:	2022-0280-10
DRAWN BY:	KDB
CHECKED BY:	MN

SHEET NO.:

C2-1



KEY PLAN

North

DATE	ISSUANCE	NO.
YYYY.MM.DD	ISSUED FOR...	

LEGEND

- PROPOSED OVERLAND FLOW ROUTE
- EXISTING/PROPOSED STORM DRAINAGE AREA
- 10 / 0.75 — AREA ID / AREA IN HECTARES
- EXISTING TREE DRIPLINE AND/OR VEGETATION LINE
- 325.0 — EXISTING CONTOUR
- DEPRESSION AREA
- APPROX. PROPOSED POND AREA AND LOCATION

CLIENT

PROJECT
BAYER LANDS

TITLE
PROPOSED CATCHMENT AREA & CONDITIONS PLAN
SHEET 1 OF 1

WALTERFEDY
KITCHENER | HAMILTON | TORONTO
800.685.1378 walterfedy.com

SCALE:	1:2500
DATE:	2022-05-26
PROJECT NO.:	2022-0280-10
DRAWN BY:	KDB
CHECKED BY:	MN

SHEET NO.:
C2-1

OUTLET TO THE SOUTH STRASBURG TRUNK SEWER

CONCEPTUAL PLAN SHOWN
(LANDS OWNED BY OTHERS)

SWMF AREA = 3.0ha
(15% OF DEVELOPABLE AREA)

OUTLET TO THE BIEHN DRIVE TRUNK SEWER

UPPER BLAIR CREEK SUBWATESHED

FUTURE STRASBURG ROAD

508
6.66

501
16.23

EXISTING WOODLOT

EXISTING WOODLOT

506
4.10

SUBWATERSHED BOUNDARY

UPPER CEDAR CREEK SUBWATERSHED

507
40.74

CONCEPTUAL PLAN SHOWN
(LANDS OWNED BY OTHERS)

OUTLET TO THE DOON SOUTH TRUNK SEWER

CONCEPTUAL PLAN SHOWN
(LANDS OWNED BY OTHERS)

SWMF AREA = 6.0ha
(15% OF DEVELOPABLE AREA)

FISCHER HALLMAN ROAD

NEW DUNDEE ROAD

ROAD

0.7%

1.1%

3.9%

0.6%

KEY PLAN

North

DATE	ISSUANCE	NO.
YYYY.MM.DD	ISSUED FOR...	

LEGEND

- PROPOSED SANITARY SEWER/SERVICE
- PROPOSED STORM SEWER/SERVICE
- 10 / 0.75 — REACH #/CATCHMENT ID / AREA IN HECTARES

CLIENT

PROJECT
BAYER LANDS

TITLE
CONCEPTUAL SERVICING PLAN
SHEET 1 OF 1

WALTERFEDY
KITCHENER | HAMILTON | TORONTO
800.685.1378 walterfedy.com

SCALE:	1:2500
DATE:	2022-07-27
PROJECT NO.:	2022-0280-10
DRAWN BY:	KDB
CHECKED BY:	MN

SHEET NO.:
C3-2