1547 Bloor Street West
Toronto, Ontario M6P 1A5
☎ (416) 923-6630
✉ info@sglplanning.ca

December 15, 2022 Project: UE.WL

VIA EMAIL

Michelle Sergi
Commissioner of Planning and Development Services
Niagara Region
1815 Sir Isaac Brock Way P.O. Box 1042
Thorold, ON
L2V 4T7 Canada

Re: OPA 63

SGL Planning & Design Inc. represents the Smithville Landowners Group. The Landowners Group are also being assisted by GEI Consultants Ltd., A.J. Clark and Associates Ltd., Colville Consulting, Terra-Dynamics and BA Group. Individual landowners have also retained other consultants to assist with their review of OPA 63. Our team of consultants has been actively involved in the Smithville Master Plan and have attended the Technical Advisory Committee meetings, the Steering Committee meetings and public open houses. This letter represents the combined input from all of these consultants.

Township staff and their consultants have been very accommodating in trying to resolve outstanding policy issues on OPA 63, and we thank them for the open process and consultation that they have afforded us. The recent changes proposed by GSP provide additional clarity and necessary flexibility. However, some of the landowners' previously identified concerns with the policies of OPA 63 have not been addressed as further discussed in this letter. Our previous letters are included in **Attachments I**, **II**, and **III**.

Densities
The densities provided through OPA 63 are generally acceptable to support the intended built forms and meet the township's density target. However, we continue to reiterate that the Residential and Medium Density designations density ranges are too low to accommodate the range of housing permitted in the designation, such that the density permissions would prohibit the development of denser permitted built forms other than in limited amounts averaged with other lower density housing forms. The density ranges are lower than other municipal densities in Niagara Region, and could prevent the development of a full range of dwellings types in the Township. In light of Bill 23 direction for expediting housing, we request that the Secondary Plan be revised to increase the density permissions to expedite the process of a full range of housing options.

Restoration Areas
We recognize the importance and the need for restoration in a Natural Heritage System, but continue to have concerns with the approach for the Recommended Restoration Areas designation in OPA 63. The Secondary Plan contains policies for both the Recommended Restoration Areas as well as Potential Restoration Areas. It is still unclear why OPA 63 treats Recommended Restoration Areas differently from Potential Restoration Areas. In the opinion of our consulting team, these two classifications provide for the same restoration function, but some areas are specifically mapped without any analysis demonstrating the necessity of those specific lands to be restored while others are identified schematically. It appears that these Recommended Restoration Areas were originally conceived to increase the extent of natural cover. However, parks, open spaces and stormponds are now included as part of the natural cover target. With the Province exploring permitting off-setting, restoration areas will be the means to accommodate off-setting but the extent of the restoration areas required should be based on the off-setting requirements and the new policies and regulations produced by the Province. We request that all restoration areas be shown schematically as Potential Restoration Areas on Schedules E-8 through E-12 to be evaluated further through an EIS at the block plan and/or draft plan of subdivision stage and which can address the Province's new off-setting requirements through that process.

Conceptual Buffers
Policy 6.11.7.3.14 regarding Conceptual Buffers notes that buffers are meant to protect Core Area features and that the actual width required for a given Buffer will be specified at the Block Plan stage through an Environmental Impact Study. We are supportive of that approach as it will determine the appropriate buffer depending on the sensitivity of the feature and the type of adjacent land use. That approach is reiterated in sub-policy b), which states the ecologically appropriate width of each Buffer shall be established through an EIS. However, the policy then goes on the say 'and shall generally be 30 metres". There is nothing in OPA 63 or in the supporting subwatershed study that states why 30 metres is ecologically appropriate. Sub policy e) goes on to say that minor alterations may be made to the boundaries of the Buffer without requiring an amendment to the Official Plan. There is no clarity as to what a minor alteration is, and it is onerous to require an OPA where a reduced buffer is ecologically supported. We recommend that the text "and shall generally be 30 metres" be revised to say, "up to 30 metres". As well, we recommend that the reference to "minor alterations" be removed.

Karst
With respect to Karst features, we have made suggested edits to Karst's policies to Mr. Wever dated December 6, 2022 (See **Attachment I**), which we hope to see reflected.

Phasing Policies

With respect to the phasing policies, we understand Township staff and the consultant team wish to support orderly development, however, we are concerned the phasing policies of OPA 63 are too restrictive and prioritize non-participating landowners' land, which will slow the delivery of new housing. We are not requesting that OPA 63 advance without a plan for implementation of corresponding infrastructure, rather it should incorporate flexibility into the MCP to allow for concurrent opportunities to build more homes faster.

The phasing policies do not provide the Town with the flexibility to adjust as circumstances warrant. The policy approach to phasing priorities is highly prescribed and not practical at an implementation level. It needs to be flexible to address changing market circumstances, landowner preparedness and alternative service solutions.

By providing greater phasing flexibility, it will not preclude orderly development, as any future development would continue to be subject to the Official Plan and Provincial policies as well as infrastructure constraints.

With Bill 23 seeking to facilitate the development of housing faster to alleviate the affordable housing crisis, we request the secondary plan be revised to incorporate greater flexibility with a focus on infrastructure staging related to development rather than consecutive phasing. Otherwise, the current restrictive approach to phasing, in our opinion, will hinder the municipality's ability to meet the 2051 growth targets.

Coverage Target

OPA 63 references achieving the Township wide natural cover target of 30% in Section 10.3.2 of the Official Plan. This is an aspirational target that applies across the municipality, but OPA 63 applies that target to the Secondary Plan Area specifically. We appreciate that the policy text has been edited to be more flexible with what can be included in achieving the natural cover target, but we continue to have concerns with the implementation of the natural cover target, particularly where the policies allow for refinement of restoration areas, conceptual buffers, linkages and the natural heritage system provided it contributes to the natural cover target. In our opinion, this requirement is onerous and not based on any ecological principles or requirements in any provincial or regional policy or guideline. We request that the policies be revised to apply the natural cover target municipal wide as Section 10.3.2 requires rather than specifically to the Secondary Plan.

Conclusion

Thank you for the opportunity to comment on the revisions to OPA 63. The cumulative impact of the environmental policies and their implementation and the rigidity of the phasing policies is a real concern to the landowners group. The Smithville Landowners Group looks forward to working with the Township to implement OPA 63 over the coming decades, but we want to ensure that we get OPA 63 right. The landowners and

their consultants have concerns, and we request that the Region modify OPA 63 to address the above noted concerns.

Yours very truly,
SGL PLANNING & DESIGN INC.

Paul Lowes, MES, MCIP, RPP

c.c. Brian Treble, Township of West Lincoln
Richard Vandezande
Steve Wever, GSP Group
Tony Miele, Smithville Landowners Group

Planning & Design Inc.

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Attachment I: Letter to S. Wever dated December 7, 2022

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✉ info@sglplanning.ca

December 6, 2022 Project: UE.WL

VIA EMAIL

Steve Wever
GSP Group
72 Victoria Street South
Suite 201
Kitchener, ON
N2G 4Y9

Re: Suggested Edits to OPA 63

SGL Planning & Design Inc. represents the Smithville Landowners Group. The Landowners Group are also being assisted by GEI Consultants Ltd., A.J. Clark and Associates Ltd., Colville Consulting, Terra-Dynamics and BA Group. Individual landowners have also retained other consultants to assist in their review of OPA 63.

We would like to thank Township staff and the team of consultants for their continued collaborative dialogue in making refinements to OPA 63. The proposed refinements in your email dated November 23, 2022 are helpful although we continue to have concerns regarding some of these policies. In addition to our email correspondence on December 1st, 2022 regarding Policy 6.11.7.3.14 e) and the phasing policies (**Attachment A**), we are providing the following additional suggestions concerning the Natural Hazard and Phasing policies.

Karst Policy Text Suggestions
With respect to the Karst policies, your proposed policy changes are quite positive, but we have some suggested additional edits which are **underlined** and **bolded**, whereas the original OPA 63 text is in black text and the edits by GSP Group are shown in red.

6.11.7.3.17

d) Any development or site alteration proposed within 50 metres of a karst feature, including the potential high- and medium-constraint karst features identified on Schedules “E-8” and “E-11” and any other potential high- and medium-constraint karst features identified through further study, shall be subject to the following:

i. the requirement to complete a Karst Hazard Assessment which shall recommend the constraint level and classification of each karst feature

identified on the landscape and recommend minimum setbacks for development and**/or** other appropriate mitigation strategies **such as elimination of the hazard**; and,

ii. approval of the NPCA, in accordance with NPCA regulations and policies.

e)No development or site alteration shall be permitted within 50 metres of a high-constraint or medium-constraint karst feature ~~not identified in Policy No. 6.11.7.3.17.d)ii above~~, unless ~~a~~ an approved Karst Hazard Assessment ~~has been completed and~~ has recommended an appropriate alternative setback **or mitigation strategy to eliminate the hazard** and has demonstrated that:

i. the proposed development or site alteration will have no adverse impact on the hazard with respect to the control of flooding, erosion, or other hazard-related conditions;

ii. all applicable Provincial standards related to floodproofing, protection works, and access can be met and will be implemented;

iii. people and vehicles have a way to safely enter and exit the area during times of flooding, erosion, and other emergencies;

iv. the proposed development or site alteration will not aggravate an existing hazard or create a new hazard; and

v. there will be no negative impacts on the ecological or hydrological functions of ~~**the**~~ **downstream** feature**s**.

g.) Where a karst feature is left to function in the landscape, any development or site alteration within the same drainage area of that feature shall be required to undertake a ~~**water balance**~~ **hydrologic** study to ensure that post-development flows to the feature do not exceed pre-development flows, to the greatest extent possible.

h.) Where the proposed development of lands that contain all or part of a karst feature involves the creation of one or more lots:

i. the karst feature and its associated setback area shall be maintained as a single block; or

ii. where it is not possible to maintain a karst feature and its associated setback area as a single block, any fragmentation of the kar**st**~~**s**~~ feature and its associated setback area into multiple blocks shall be minimized.

Additional Karst Comments for Consideration

In regard to policy 6.11.7.3.17 i), it is unclear what is meant by unitary storage. To improve clarity of the policy, we recommend further explaining it or defining it.

We also appreciate an effort has been made to clarify the process for determining what a minor alteration would be for a Buffer in policy 6.11.7.3 14 e); however, we remain concerned about the use of the term minor and how this term could be interpreted.

Phasing Policy Comments

With respect to the phasing policies, we understand Township staff and the consultant team wish to support orderly development, however, we are concerned the phasing policies of OPA63 are too restrictive and prioritize non-participating landowners' land, which will slow the delivery of new housing. We are not requesting that OPA 63 advance without a plan for implementation of corresponding infrastructure, rather it should incorporate flexibility into the MCP to allow for concurrent opportunities to build more homes faster. By providing greater flexibility or the removal of the phasing policies, it would not preclude orderly development, as any future development would continue to be subject to the Official Plan and Provincial policies as well as infrastructure constraints.

With Bill 23 seeking to facilitate the development of housing faster to alleviate the affordable housing crisis, we urge the team to incorporate greater flexibility within the Secondary Plan with a focus on infrastructure staging related to development rather than consecutive phasing.

Yours very truly,
SGL PLANNING & DESIGN INC.

Paul Lowes, MES, MCIP, RPP

c.c. Brian Treble
Richard Vandezande
Tony Miele, Smithville Landowners Group

Attachment A: Correspondence

Monday, December 5, 2022 at 21:10:14 Eastern Standard Time

Subject: RE: OPA 63 follow up
Date: Friday, December 2, 2022 at 9:28:48 AM Eastern Standard Time
From: Steve Wever
To: Raymond Ziemba
CC: btreble@westlincoln.ca, anastasiagrove anastasiagrove, Paul Lowes
Attachments: image002.png, image003.png, image004.png, image005.png, image006.png, image008.png, image009.png

Hi Ray,

Thank you for the suggested rewording of Policy 6.11.7.3.14 e) – we agree that is clearer and I have included this change in the proposed draft modifications and have updated the Region regarding this change to the proposed draft modifications.

Regarding the landowners' request to remove the phasing policies from OPA 63, we have discussed this with the Region and Township representatives, and we are not recommending removal of the phasing policies or modifications to them. The Planning Act, PPS and Growth Plan continue to direct municipalities to have regard to the orderly development of safe and healthy communities, including via the establishment of phasing policies. I'm not aware of anything in Bill 23 that would restrict or eliminate the need to plan for the orderly progression of development aligned with infrastructure and transportation improvements, or that would obligate the Township to plan to accommodate more growth and/or to grow at a faster pace than envisioned by the MCP. Through the implementation of OPAs 62 and 63, the geographic size of Smithville's urban area will nearly double and the proposed land use designations and policies provide for Smithville's population to quadruple over a period of 30 years from approximately 7,000 to 29,000. Council and public support for the plan has been based on an understanding that this growth will occur at a manageable pace aligned with the provision of the required infrastructure and supporting community facilities.

I hope this information is helpful.

Thanks,
Steve

Steve Wever MCIP, RPP
President

office: 519.569.8883
direct: 226.243.7399
mobile: 519.497.9023
email: swever@gspgroup.ca

GSP group
72 Victoria Street South
Suite 201
Kitchener, ON N2G 4Y9

www.gspgroup.ca

From: Raymond Ziemba <rziemba@sglplanning.ca>
Sent: December 1, 2022 11:52 AM
To: Steve Wever <swever@gspgroup.ca>
Cc: btreble@westlincoln.ca; anastasiagrove anastasiagrove <anastasiagrove@sympatico.ca>; Paul Lowes <plowes@sglplanning.ca>

Subject: Re: OPA 63 follow up

Hi Steve,

Thank you for those changes. They are helpful. We will be reviewing them with the landowners tomorrow.

For Policy 6.11.7.3.14 e) we suggest the order of the added text be revised as shown below:

Where the width established for a Buffer through the completion of an EIS differs from the conceptual width shown on Schedule "E-12", minor alterations may be made to the boundaries of the Buffer on that Schedule as determined by the Township in consultation with the Region and the NPCA based on the recommendations made in the EIS, without requiring an amendment to this Official Plan.

The landowners' also request that the policies regarding phasing be removed from OPA 63 based on Provincial direction for achieving housing targets in Ontario.

Thanks,
Ray

SGL Planning & Design Inc.
25th ANNIVERSARY
Raymond Ziemba RPP, MPI.
Senior Planner
1547 Bloor Street West
Toronto, ON M6P 1A5
TEL: 416.923.6630 Ext. 25
Subway: Dundas West

From: Paul Lowes <plowes@sglplanning.ca>
Date: Monday, November 28, 2022 at 6:47 AM
To: Steve Wever <swever@gspgroup.ca>, Raymond Ziemba <rziemba@sglplanning.ca>
Cc: btreble@westlincoln.ca <btreble@westlincoln.ca>, anastasiagrove anastasiagrove <anastasiagrove@sympatico.ca>
Subject: Re: OPA 63 follow up

Steve

We will try and get any comments to you today or first thing tomorrow.

Paul

Paul Lowes M.E.S., MCIP, RPP
Principal
1547 Bloor Street West
Toronto, ON M6P 1A5
TEL: 416.923.6630 Ext.23
CELL: 416.347.7109
Subway: Dundas West

From: Steve Wever <swever@gspgroup.ca>
Date: Wednesday, November 23, 2022 at 1:45 PM
To: Raymond Ziemba <rziemba@sglplanning.ca>
Cc: Paul Lowes <plowes@sglplanning.ca>, btreble@westlincoln.ca <btreble@westlincoln.ca>, anastasiagrove anastasiagrove <anastasiagrove@sympatico.ca>
Subject: RE: OPA 63 follow up

Hi Ray,

Please find attached a tracked changes version of OPA 63 showing the proposed draft modifications.

We are not proposing any modifications to the density ranges as in our opinion they remain appropriate and support the achievement of the Greenfield density target, housing mix and range of unit types and accommodating the overall growth forecast.

If you have any comments on this we will need them as soon as possible next week as we are scheduling to bring this forward to Township Committee/Council on December 12th.

Thanks,
Steve

Steve Wever MCIP, RPP
President

office: 519.569.8883
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email: swever@gspgroup.ca

GSP group
72 Victoria Street South
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Kitchener, ON N2G 4Y9

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Vacation Alert: Friday November 18th returning on Monday November 28th.

From: Raymond Ziemba <rziemba@sglplanning.ca>
Sent: November 21, 2022 4:14 PM
To: Steve Wever <swever@gspgroup.ca>
Cc: Paul Lowes <plowes@sglplanning.ca>; btreble@westlincoln.ca; anastasiagrove anastasiagrove <anastasiagrove@sympatico.ca>
Subject: Re: OPA 63 follow up

Attachment II: Letter to Council Regarding Draft OPA 63 Dated June 24, 2022

1547 Bloor Street West
Toronto, Ontario M6P 1A5
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✉ info@sglplanning.ca

June 24, 2022 Project: UE.WL

VIA EMAIL

Mayor and Members of Council
Township of West Lincoln
318 Canborough St. Box 400
Smithville, ON
L0R 2A0

Re: Draft OPA 63

SGL Planning & Design Inc. represents the Smithville Landowners Group. The Landowners Group are also being assisted by GEI Consultants Ltd., A.J. Clark and Associates Ltd., Colville Consulting, Terra-Dynamics and BA Group. Individual landowners have also retained other consultants to assist on the review of OPA 63. Our team of consultants has been actively involved in the Smithville Master Plan and have attended the Technical Advisory Committee meetings, the Steering Committee meetings and public open houses. This letter represents the combined input from all of these consultants.

We would like to thank Township staff and their consultants for the work to date to advance the Smithville urban expansion. The Smithville Landowners Group continues to be fully supportive of the settlement expansion as set out in OPA 62. However, the landowners have significant concerns with some of the policies and schedules of OPA 63 as discussed in this letter and the attachments. We have summarized the key concerns in this letter with specific concerns and recommended changes set out in **Attachment A** with more detailed comments from Terra-Dynamics on Karst features and policies contained in **Attachment B**.

Densities
The Residential and Medium Density designations provide an appropriate range of housing types to addressing the housing needs in Smithville over the next 30 years. However, we are concerned that the density ranges are too low to accommodate the full range of housing permitted in those two designations as further explained in Attachment A.

Mixed Use
The Mixed Use policies set out various targets to ensure that the Mixed Use Nodes become mixed use areas. This objective is laudable. However, we are concerned that the percentage targets for Commercial Mixed Use Nodes is overly prescriptive and will

not achieve truly mixed use buildings. We have recommended an alternative approach in Attachment A.

For the Medium Density Mixed Use Nodes, we understand what the consultants are trying to achieve, but we are concerned that the targets would result in a significant amount of commercial development being required in the interior of neighbourhoods. This amount of commercial development is neither feasible nor appropriate. We have proposed an alternative policy approach in Attachment A.

Restoration Areas

We understand the need for restoration in a Natural Heritage System, but we have significant concerns with the approach being taken in OPA 63. OPA 63 establishes two classes of restoration areas. Potential Restoration Areas and Recommended Restoration Areas. These two classifications provide for the same restoration function, but Recommended Restoration areas are specifically mapped without any analysis demonstrating the necessity of those specific lands to be restored while Potential Restoration Areas are identified schematically. In our opinion, all restoration areas should be identified schematically as Potential Restoration Areas to be evaluated further through an EIS at the block plan and/or draft plan of subdivision stage.

Coverage Target

OPA 63 sets out a process for refinements to natural areas, linkages, restoration areas and conceptual buffers. We are supportive of that process. However, OPA 63 further states that refinements to these features should ensure that the overall land area occupied by the NHS is maintained or increased. This policy is based on the flawed principle that the Secondary Plan must meet an arbitrary coverage target of 30%. This 30% target comes from the Official Plan. It is an aspiration policy target that applies to the entire watershed and is to be **encouraged** through **voluntary** landowner stewardship and restoration. However, your consultants have recommended it be applied specially within an urban area not just an average across the watershed, and it is no longer either encourage nor voluntary. In our collective opinions, that is not appropriate. This policy requires that even if an area of the NHS is found not to contain any significant natural features an equally sized piece of farmland elsewhere will need to be included in the NHS. Not only is this approach not found anywhere in the Provincial Policy Statement, Growth Plan or Niagara Region Official Plan, but it is punitive to the last farmer who develops his or her lands, will make development and housing more expensive; could hinder the ability to reach the growth targets and potentially require further settlement expansion.

Karst Features

We recognize the importance of identifying karst features as a potential hazard. However, we are concerned that the consultants have not undertaken a sufficient level of analysis to identify certain karst features as a High or Medium Constraint features. We recommend that OPA 63 be revised to remove reference to the categorization of karst features and rather require that no development or site alteration be permitted

within 50 metres of a karst feature identified on the Schedules E-8, E-11 and E-12 unless a Karst Hazard Assessment has been completed.

Servicing and Transportation
We are concerned that a number of policies in the servicing and transportation section are overly prescriptive and do not provide the flexibility needed to prepare block plans and subsequent draft plans of subdivision. Nor do the policies recognize that the alignment and right of way widths of arterial and collector roads will be established through the Environmental Assessment process and the secondary plan should not restrict the alternatives that are required to be considered through that process.

Block Plans
We support the proposed block plan process, some policies set an overly restrictive process for implementing the Block Plans. Draft Plans of subdivision will refine the Draft Plans with greater specificity, but some of the policies in this section are too rigid and do not provide the flexibility for the creation of draft plans or recognize that the greater specificity required in a draft plan will necessitate revisions and refinements to the block plan.

Study Requirements at the Block Plan and Draft Plan stage.
OPA 63 sets out a requirement for a Master Environmental Servicing Plan (MESP) for each block plan. This is an extensive exercise that requires servicing, transportation, noise, stormwater and environmental studies. It will be applied to fairly small geographic areas. Due to this extensive work required for such small areas, it is not necessary to repeat such studies at the Draft Plan stage. As such, we request that OPA 63 clarify that studies at the draft plan stage be scoped in recognition of the work undertaken in the MESP.

Thank you for the opportunity to comment on OPA 63. The Smithville Landowners Group looks forward to working with the Township to implement OPA 63 over the coming decades, but we want to ensure that we get OPA 63 right. The landowners and their consultants have significant concerns, and we request that Council directs staff and their consultants to work with the Smithville Landowners Group in an effort to resolve these concerns.

Yours very truly,
SGL PLANNING & DESIGN INC.

Paul Lowes, MES, MCIP, RPP

c.c. Brian Treble
Richard Vandezande
Steve Wever, GSP
Diana Morreale, Region of Niagara
Tony Miele, Smithville Landowners Group

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Attachment A

Formatting and Technical Comments

Below are formatting and technical comments related to our review of OPA 63 and the supporting schedules:

- Section 1.3 Purpose, sub-point two, should be updated to reference the "natural heritage system" not the "natural related system";
- 6.11.7.1, Section 2 Vision and Section 3 Goals should include language regarding the accommodation of a growing population and employment sector, as well as providing for a diverse mix of housing;
- Section 3 Goals r.), we recommended that "timely" be added to "logical and orderly", so it reads "logical, timely and orderly" as the timing of development and infrastructure provision as well as timing according to market needs is critical;
- Starting in Policy 6.11.7.2 d), OPA 63 changes from referring to the entirety of the policy number (i.e., 6.11.7.2.1c) to just "No. 1. c)". This is confusing and an introductory interpretation policy would be appropriate to explain what the number is and where it applies;
- Policy 6.11.7.2.1, third paragraph refers to Subsections "6.11.7.25 and 6.11.7.2.9", it should be policy "6.11.7.2.5";
- Policy 6.11.7.2.5 f) ii. A) includes a faulty hyperlink, please review as there are multiple faulty hyperlinks;
- In Policy 6.11.7.2.5 Mixed Use Node, there are two sub policy "j)". The second reference should be l) and l) should be m); and
- Sub Areas Schedules E-8 to E-12, consider removing the block plan area numbers for legibility.

Land Use Designations

Residential

Height policy 6.11.7.2.1 e) states that "a single storey should be understood as generally being between 3 metres and 4 metres". We are concerned that this policy may confuse the public, and for instance, lead them to believe that a 2-storey building could be as low as 6 metres in height when in fact that fails to recognize that height will

include the portion of a basement that is above ground and typically half the height of a roof. Details such as this should be contained in the Zoning By-law and not in the Official Plan.

Policy 6.11.7.2.2 f) sets out a density of between 15 and 20 units per hectare. This density should be higher to accommodate townhouses which are a permitted use, unless this gross density is to be interpreted as applying across a plan of subdivision. If the latter is the intent, please provide that clarification in the policies.

Medium Density

The permitted Medium Density uses includes a range of multiple unit building types, however Policy 6.11.7.2.3 a) iv) limits a multi-residential development to six units. This limitation is overly restrictive. This type of detail should be included in the Zoning By-law, as it would be onerous to require an Official Plan Amendment to permit a 7th unit if it was appropriate.

Policy 6.11.7.2.3 g) states that the Medium Density designation shall be planned to achieve an overall density of between 20 and 40 dwelling units per hectare. Although this density is sufficient to permit street townhouse dwellings, it is not high enough to permit back-to-back or stacked townhouses either on their own or combined with street townhouses in a larger development. The Medium Density designation should contain a higher overall density to encourage denser forms of townhouses. Moreover, we reiterate our previous comment that the land on the south side of Street A should be designated Medium Density to provide higher density along the arterial road and transition to the lower density Residential designation in the interior of the neighbourhoods.

Mixed Use

Policy 6.11.7.2.5 d) sets out the permitted non-residential uses in a Medium-Density Mixed Use Node including small-scale retail commercial uses. Sub-policy e) explains that the meaning of “small-scale” shall be determined as part of the Block Plan process and the implementing Zoning By-law. Although the block plan will delineate the land area to which the Medium-Density Mixed Use Node will apply, it will not be identifying what specific uses or tenants will occupy those lands and as such will not be able to determine the meaning of ‘small-scale’. That determination should properly be the role of the Zoning By-law. In view of the above, the text “the Block Plan process and” should be deleted.

In the Mixed Use Node, Policy 6.11.7.2.5 provides differing policies for Commercial Mixed Use Nodes and Medium-Density Mixed Use Nodes. The Commercial Mixed Use Nodes policy g) states that generally commercial uses should comprise 75% to 85% of gross floor area while residential uses should comprise 15% to 25% of the gross floor area of development.

We are concerned that the requirement for 75-85% / 15-25% is still overly prescriptive. Further, if the Township wants a truly mixed use building with residential over ground floor retail, 15-25% of the floor area will not be anywhere sufficient. Two to three floors of residential above retail will require the residential floor area to be 2 to 3 times the amount of retail floor area. We recommend that the policy be changed to require an uncapped amount of residential gross floor area above the ground floor where it is in a mixed-use building. The policies should indicate that residential units are not permitted on the ground floor of a mixed use building to ensure the buildings are mixed use. Where residential units are not to be provided in a mixed use building but rather as stand-alone building on the same lot, we agree that a cap on residential development is appropriate, but we recommend it be caped based on 15-25% of the land area.

Though sub policy j) permits deviation, the policy language stating "will support the planned function" is problematic as it does not provide any flexibility. This policy is not required if the previous policies are amended as suggested above.

We have similar concerns for the residential and commercial targets in the Medium-Density Mixed Use Nodes. The Medium-Density Mixed Use Node requirement for 15-25% of the development's gross floor area to comprise of commercial uses is too great. Residential uses will be multiple storeys. Any commercial development will be one storey. As such, 25% of the residential gross floor area means that one-storey commercial development will need to occupy over 50% of the lands covered by residential development, not only due to the difference in storeys but also because commercial development has much lower coverage than residential development. By our calculations, this policy would lead to up to 17,000 sq. m. of commercial development. We have not seen any market study that justifies this quantum of commercial space in addition to the actual Commercial designated areas particularly in an interior location. We recommend the policy be changed to require up to 15% of the net developable land area in the Medium-Density Mixed Use Nodes to be comprised of commercial uses.

We also recommended that Policy 6.11.7.2.5 direct the implementing zoning by-law to include provisions for shared parking.

Natural Heritage System

Restoration Areas

Section 6.11.7.2.10 set out the policies for the Potential Restoration Areas designation. It is still unclear why OPA 63 treats Recommended Restoration Areas in Policy 6.11.7.3.16 differently from Potential Restoration Areas in 6.11.7.2.1. In the opinion of our consulting team, these two classifications provide for the same restoration function, but some areas are specifically mapped without any analysis demonstrating the necessity of those specific lands to be restored while others are identified schematically. In our opinion, all restoration areas should be identified schematically as Potential Restoration Areas to be evaluated further through an EIS at the block plan or draft plan

of subdivision stage. Sections 6.11.7.2.10 and 6.11.7.3.16 should be combined and the policies revised to provide criteria and direction for the identification of restoration areas through the block plan process.

Section 6.11.7.2.10 c) allows Potential Restoration Areas to be accepted for parkland dedication, but the same policy does not apply to Recommended Restoration Areas. As indicated above, it is not clear why Recommended and Potential Restoration Areas are treated differently.

Coverage Target

The NHS General Policy 6.11.7.3.4 h) states that any refinements to boundaries of the Linkage Areas or Recommended Restoration Areas should be made in a manner that ensures the overall land area occupied by the NHS is maintained or increased. This policy is based on the flawed principle that the Secondary Plan must meet an arbitrary coverage target of 30%. The policy should simply state that the refinements to boundary of Linkage Areas and the rational for and delineation of Restoration Areas should occur through an MESP or EIS.

The rigid approach to the coverage target hinders the available land for development, potentially making development more expensive, and hindering the ability to reach the growth targets.

Policy 6.11.7.3.4 k) ii) states that crossings of the NHS should “maximize the span of crossings over watercourses”. This policy should be caveated with “where feasible and appropriate”.

Permitted Uses in Natural Features

The Core Area Designation policies (6.11.7.3.5) states that no development or site alteration is permitted in significant wetlands or significant woodlands. Sub policy 6.11.7.3.5 e) allows for forest management, wildlife management, conversation, infrastructure, and small-scale structures but not in significant woodlands or wetlands. It is overly restrictive to not permit forest management, wildlife management, conservation, and small-scale structures in these features. We recommend that 6.11.7.3.5 e) be revised to apply to significant wetlands and woodlands.

Refinements to Natural Features

Policy 6.11.7.3.5 c), d), e), f), and g) when read together are confusing. Sub-policy c) permits no development unless there are no negative impacts on the feature or its ecological functions. This policy follows through from the PPS and is appropriate and if no negative impacts are anticipated development can occur. However, sub-policy e) states that the only development that can occur after the EIS is limited to the activities and structures listed in that policy. Many of these activities are not development as defined by the PPS and in our opinion policy e) should not be linked to policy c). Similarly with policy d), if the federal or provincial agencies provide for a permit for development, it should not be limited by the activities in policy e).

Policy f) is also confusing as it references where development is permitted in a feature that is located outside of the Smithville NHS. This policy would seem to suggest that a natural feature located outside of the NHS can be developed for urban uses subject to demonstration of no impact on the feature or function, but an identical feature within the NHS cannot be developed for urban uses. This differentiation is inappropriate.

Conceptual Buffers

Policy 6.11.7.2.1 b) states any land located in a Conceptual Buffer shall be considered part of the Natural Heritage System and subject to Section 6.11.7.3.14. Policy 6.11.7.3.14 regarding Conceptual Buffers states that buffers are meant to protect Core Area features and that the actual width required for a given Buffer will be determined at the Block Plan stage. We are supportive of that approach as it will determine the appropriate buffer depending on the sensitivity of the feature and the type of adjacent land use. That approach is reiterated in sub-policy b), which states the ecologically appropriate width of each Buffer shall be established through an EIS. However, the policy then goes on the say 'and shall generally be 30 metres". There is nothing in OPA 63 or in the supporting subwatershed study that states why 30 metres is ecologically appropriate. We recommend that the text "and shall generally be 30 metres" be deleted or revised to say, "up to 30 metres".

Policy 6.11.7.3.14 c) then says the appropriate width shall take into consideration the overall coverage target of 30%. As indicated previously, this policy is an arbitrary target that is driving the extent of all features even if determined not to be needed through an EIS and should be struck.

In addition, sub-policy e) further conflicts with the early parts of this policy which stated the actual width will be specified and the ecological appropriate width shall be established by now stating that minor alterations may be made to the boundaries of the Buffer without requiring an amendment to this Plan. It further states that the refinement of Conceptual Buffers should maintain the same general shape and configuration. In our consulting team's opinion, this policy is entirely inappropriate and should be struck.

These conceptual buffer policies in combination are conflicting, overly restrictive and provide very little opportunity for refinement of an arbitrary pre-determined buffer width.

Linkages

OPA 63 introduces Primary (200 metres wide), Secondary Linkages (50 metres) and high constraint watercourses have a buffer of at least 30 metres on each side of the stream (policy 6.11.7.3.15). It is not clear on the schedules which width applies to which linkage. This should be shown on the Schedules or additional text should indicate where these widths apply.

Moreover, despite the Subwatershed Study indicating that stormwater management facilities are permitted in linkages, the Linkage Area designation does not permit

stormwater ponds and parks (policy 6.11.7.3.15c)). We also find the policy for permitting a linkage of any width between Twenty Mile Creek and the U-shaped woodland to be very concerning (policy 6.11.7.3.15j). This was brought up at the TAC meeting and Steve Wever mentioned this could be an open space connection, but the open-endedness of "any width" in the OPA is not appropriate. It should be revised to state based on the findings of an EIS, consistent with the approach for other linkages.

OPA 63 contains no policies requiring the confirmation of the ecological need for the linkage and the appropriate width and location of the linkage at the block plan stage. A policy approach such as this is necessary, as in our consulting team's opinion, the identification of some linkages are unnecessary and have not been sufficiently justified.

Karst Features

Karst features are identified as other features not part of the NHS on Schedule E-12. We support that karst features are not shown as part of the NHS. However, it is Terra-Dynamics' opinion that the Subwatershed Studies Phase 1 and 2 have not met the NPCA's criteria to deem an exclusion zone or identify a High or Medium Constrain feature (refer to **Attachment B** for Terra-Dynamics' memo). The NPCA's Hazard policies require a site-specific Karst Hazard Risk Assessment be prepared by a karst specialist and a geotechnical engineer. In addition, the Subwatershed Studies did not complete any substantive assessment of flow monitoring into a karst; dye trace studies of the water sinking into a karst feature, geophysical mapping; drilling programs adjacent to a karst features; or the excavation of overburden materials. In other words, the Subwatershed Studies completed the first 3 of 5 requirements of the Ministry of the Natural Resources Technical Guide for Hazardous Site (1996), which are listed below:

- Information Study;
- Initial Site Inspection;
- Reporting of Visual Inspection;
- Subsurface Investigation; and
- Analyses and Reporting.

The Subwatershed Studies can be described as "Phase 1: Preliminary Work – Desktop Study and Initial Site Visit" as referenced by F.R. Brunton of the Ontario Geological Survey (2013) within the proposed guidelines for a geotechnical investigation related to karst features in Ontario. To deem lands as High Constraint for development or development exclusion zone, per Brunton, a Phase 2 Investigation is required which Brunton describes as Field-Based Karst Investigations which can include: passive geophysical mapping, soil probing or excavation, rock drilling and well studies, and tracer studies. More information is necessary for a site-specific Karst Hazard Risk Assessment by a karst specialist and geotechnical engineering before these are included in the Official Plan Amendment.

Moreover, there is no scientific or engineering support for the classification of low, medium and high karst constraint areas; specifically the subwatershed work to date includes:

- No dimension of sinkholes with respect to width, length, and depth;
- No calculations of the surface area of the catchment area of stormwater that drains towards each sinkhole/sink point;
- No quantification of the hazard risk; and
- No scientific or engineering studies in which to assess risk.

There is also conflicting information on the Subwatershed Studies karst features SW-1 and the Draft OPA 63 No Development within 50 m of Karst feature shown on Schedule "E-11". The Subwatershed Studies stated SW-1 "does not have significant hydrological/hydrogeological function and has likely formed since deforestation of the area", whereas the Powerpoint on March 3, 2022, recommended, "excavate, evaluate and grout can be considered". As noted earlier, the work is too preliminary, and features should be evaluated by karst specialists and geotechnical engineering per NPCA's Karst Hazard Policy. Similarly, there is not enough information to warrant Karst feature NW-2 shown on Karst Features Schedule E-8, Northeast "K" located in the open space north of spring creek road. It is Terra-Dynamics' opinion this sink point is likely, not hazardous. The area warrants excavation and study by a karst specialist and geotechnical engineering before it can be classified as hazardous (refer to **Attachment A** for Terra-Dynamics' memo)

Therefore, we recommend that 6.11.7.2.17 remove the third paragraph describing the categorization of Karst Features as it is unsubstantiated. We also suggest that sub-policy e) be revised to "No development or site alteration shall be permitted within 50 metres of a karst feature identified on Schedules "E-8", "E-11", and "E-12" using the letter "K", unless a Karst Hazard Assessment has been completed and has demonstrated that:..". As well, in sub policy g), the words "low constraint" should be removed.

Sub-policies d), e) and g) state that no development or site alteration shall be permitted within 50 metres of a karst. This policy should be changed to rely on the NPCA approval as certain uses can be permitted within 50 metres. As such, sub-policies 6.11.7.3.17 d), e) and g) are not necessary as sub-policy f) states any development within 50 metres of karst will be subject to the NPCA approval. We also recommend that sub-policy f) be revised to state "any development within 50m is subject to NPCA approval, studies & mitigation strategies", to improve clarity. Moreover, sub-policy h) should be revised to state the post development flows should reflect the recommendations of a water balance study. Lastly, it is unclear how sub policy i) is relevant to Karst features.

Infrastructure and Transportation

Section 6.11.7.4.2 reads more like an introduction to Water & Wastewater. It is unclear if these are in fact policies or meant as information. Since this background information is included in the Official Plan, it now implies an Official Plan Amendment would be required if there are any refinements or changes to the servicing strategy. This is not appropriate, and there should be flexibility to allow for alternative servicing strategies that may be more efficient or cost effective. We recommend this section be removed or text added to say that it is background information for context and not a policy.

Water and Wastewater
Policy 6.11.7.4.2 b) references new developments may be required to provide future connections to adjacent existing uses; this policy should include a caveat of "where appropriate and financially feasible".

Stormwater Management
Policy 6.11.7.4.3 states that the land use schedules identify the general locations for stormwater management facilities and these locations are conceptual but represent the "preferred locations" for such features. Further sub-policy b) i. states that stormwater management facilities shall generally be located to conform with the conceptual locations shown on Schedules E-8. The policies then go on to state that the location and configuration will be further refined through the MESP and Stormwater management plans and that stormwater management facilities can be relocated or consolidated. These later policies conflict with early statements of preferred locations and conform, and we request that those terms be removed from the text.

Transportation Network
Policy 6.11.7.4.4 d) states that Block Plans shall be required to include a network of roads that adheres to the conceptual alignment shown on Schedule "E-13". Local roads shown on Schedule E-13 are quite conceptual and only represent a fraction of the local roads that will be developed. Collector and Arteria roads will need to proceed through an EA process to confirm alignments. As such, this policy is too prescriptive. We recommend that it be revised to state, "All Block Plans shall establish a network of roads based on the conceptual collector and arterial road alignments shown on Schedule E-13 of this Plan and the policy direction of Policy 4 e) and f)".

Further, in sub-policy e), it is unnecessary to include the word "Minor", as long as sub-policies i, ii, and iii are met; qualifying minor or major is not necessary. Moreover, the actual alignments of Arterial and Collector Roads will be established through the EA process and not the Block Plan unless it is an integrated EA process.

Moreover, in sub policy f), the words "and may be changed without requiring an amendment to the Official Plan" should be struck. As the policy indicates the local roads shown on Schedule E-13 are conceptual and not intended to represent the entire local street network as such the roads will be changed not may be changed. We

recommend the policy be revised to state, "….the location, number and alignments of Local Roads will be determined and defined through the Block Plan process based on the following parameters:"

Sub policy h) is too limiting on the ability to reduce the widths of local roads to address more compact development objectives, one side roads or other situations that may merit reduction. We recommend the policy be replaced with the following, "Notwithstanding No. 4 g) above, the Township may reduce the minimum right-of-way width of any road under its jurisdiction without requiring an amendment to the Official Plan, subject to the satisfaction of the Township and Director of Engineering".

Sub-policy i) should be expanded to stipulate that access to Arterial "A" Road via a local road is permitted where it can demonstrate there are no adverse impacts to the transportation network capacity through a transportation impact study.

We generally support the intent for local roads to have sidewalks on both sides in sub-policy o); however, some exceptions may be appropriate for window roads, constrained locations, and context-specific circumstances where there may already be an adjacent pedestrian connection.

It should also be noted that sub policy r), and throughout the document, references the Transportation Master Plan, but the Draft Transportation Master Plan is not yet available for review.

Sub-policy p) states that development adjacent to Street "A" should be oriented so that the side lot lines abut Street "A" and the design incorporates appropriate noise mitigation measures. There are two issues with this policy. First, orienting side lot lines to abut Street A requires local roads to access Street A, which we understand are to be limited. Second side yards abutting an arterial road are the more difficult arrangement to mitigate noise into rear yards. We recommend that the policy be revised to say that "Future development adjacent to Street "A" should be oriented to avoid rear lotting and to incorporate appropriate noise mitigation measures such as having houses face Street A along a window street".

Smithville Bypass Road Corridor

Policy 6.11.7.4.5 c) provides a minimum right-of-way width of 31.5 metres which presumes 4 lanes. The number of lanes is not in the scope or recommendation of the Smithville Traffic Assessment and will be determined through a subsequent EA. This policy should be revised to state that the right of way width and design of the roadway will be finalized through a future EA and detailed design process, and that the ultimate right-of-way width should be minimized where possible.

Road Improvements for Block Plan Areas

Policy 6.11.7.4.6 states in each sub-policy that No development in a specific Block Plan Area shall proceed unless or until certain roads are improved or upgraded. In the

consulting team's opinion, these policies are overly prescriptive and unrealistic to stage development and infrastructure this way. As many of these roads are existing municipal roads, the landowners have little control over the timing of these upgrades; nor is it clear if the upgrades are necessitated by existing development or the growth of the greenfield components of the neighbourhood. It is also unclear how the road improvements will be financed and whether there be Development Charge credits.

We recommend that the policy be revised as follows:
"Block Plans undertaken in accordance with Policy 6.11.7.6.1 shall identify through the MESP the timing of the following transportation improvements in relation to the phasing of development within the respective Block Plans:

a) Block Plan Area 2
   i) The segment of South Grimsby Road 5 adjacent to Block Plan Area 2 upgraded to an appropriate urban standard;
   ii) the portion of the road allowance for South Grimsby Road 6 between the CPR rail corridor and the corridor for Street "A" opened and developed to an appropriate urban standard;

b) Block Plan Area 3
   i. The segment of South Grimsby Road 5 adjacent to Block Plan Area 3 upgraded to an appropriate urban standard;
   ii. The segment of Thirty Road adjacent to Block Plan Area 3 has been upgraded to an appropriate urban standard;

c) Block Plan Area 4
   i) The segment of Thirty Road adjacent to that Block Plan Area upgraded to an appropriate urban standard;

d) Block Plan Area 5 or Block Plan Area 6
   i) The segment of Industrial Park Road adjacent to those Blocks upgraded to an appropriate urban standard;

e) Block Plan Area 9, Block Plan Area 10, or Block Plan Area 11
   i) The segment of Smithville Road (Regional Road 14) between South Grimsby Road 6 and Canborough Street upgraded to an appropriate urban standard;
   ii) The segment of Townline Road between Canborough Street and St. Catharines Street (Regional Road 20) upgraded to an appropriate urban standard;

f) Plan Area 12, Block Plan Area 13, or Block Plan Area 14
   i) The segment of Smithville Road (Regional Road 14) between South Grimsby Road 6 and Canborough Street upgraded to an appropriate urban standard; and

ii) The segment of South Grimsby Road 6 between Smithville Road (Regional Road 14) and West Street (Regional Road 20) upgraded to an appropriate urban standard.

Active Transportation and Trail System
In policy 6.11.7.4.7, we recommend adding a new sub-policy that states “The Township may reduce the minimum right-of-way width of any road under its jurisdiction without requiring an amendment to the Official Plan, subject to the satisfaction of the Township and Director of Engineering”.

Community Design and Sustainability
In Policy 6.11.7.5.3 sub policy b) iv), there may be situations where multiple commercial building are located on a lot and not all can abut the street; some may be situated at the rear of the site. As such, the policy should be revised to add “located near the front lot line” after “buildings”.

Block Plans

Although we support the proposed block plan process, some policies set an overly restrictive process for implementing the Block Plans. Draft Plans of subdivision will refine the Draft Plans with greater specificity. However, policies such as 6.11.7.6.1 k) that states “development shall conform” and policy l) i. that requires “dimensions of each land use” are too rigid and do not provide flexibility for the creation of draft plans. If these policies are not changed, developers will be forced to prepare draft plans of subdivision concurrently with any block plan. We recommend that policy k) be revised to say, “generally conform with and implement the approved Block Plan” and policy L) i. be revised to delete "dimensions”.

Master Environmental Servicing Plans

With block plans providing a high level of detail for a relatively small area and being accompanied by an MESP, OPA 63 should clarify that studies required at the draft plan of subdivision stage can be scoped or not required at all including studies such as a transportation study, noise study and stormwater management study all of which are required as part of the MESP.

The preparation of a MESP is a fairly extensive exercise that may not be cost effective at the scale of the block plans. The secondary Plan should be revised to permit a MESP to be prepared for multiple block plan areas.

Development Staging Plan

The policies allow for a change to the order of development without amendment to the policies provided the requirements are addressed through the Block Plan and MESP process. We support the approach of allowing changes to the order to ensure

development is not held up and allow for multiple areas to proceed in tandem where the market permits. Policy d) i. should be revied to also recognize non-participating owners as a rationale for change in the order of development.

Attachment B

Terra-Dynamics Consulting Inc.

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June 20, 2022

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Re: Draft Amendment Number 63 to the Official Plan of the Township of West Lincoln, Comments on Karst Feature Policy

Dear Sirs,

1.0 Executive Summary

The 2022 Draft Amendment Number 63 to the Official Plan of the Township of West Lincoln pertaining to karst hazards and constraint mapping is not consistent with existing policy. This is because it relies on preliminary karst work completed as part of the Smithville Subwatershed Study (SWS), Phases 1 and 2 (Wood PLC, 2021 and 2022). The karst work completed for the SWS can be described as preliminary in nature, comprising of a desktop study and a few site visits. Constraint mapping resulting in development exclusion zones around karst features is premature in nature, and is not compliant with policies outlined by the Niagara Peninsula Conservation Authority (NPCA) (NPCA, 2020) who regulate karst hazards in Niagara Region. Requisite scientific and engineering studies have not been completed that are required to assess karst hazard conditions as per the NPCA's (2020) Karst Hazard Policies for Planning and Regulating Hazardous Sites and to assess whether the karst hazards can be remediated and development can occur, or whether there are constraints to development. In addition to the studies listed by the NPCA, the protocols for such scientific and engineering studies are outlined by the Ministry of Natural Resources (1996) and the Ontario Geological Survey (2013).

2.0 Introduction and Background Information

On behalf of JTG Holdings Ltd., Timberlee Homes and Phelps Homes, Terra-Dynamics Consulting Inc. (Terra-Dynamics) respectfully provide the following comments on the designation of Karst Hazards described in the Draft OPA 63. Our comments are provided with specific reference to *Section 17* of Draft OPA 63 and *Section 4.2, Karst Subsection 4.2.2 Impact Assessment* of the Wood PLC (2002, March 29) Draft Smithville Subwatershed Study – Phase 2: Impact Assessment.

JTG Holdings Inc. owns the property where the karst feature referenced in Draft OPA 63 as Schedule "E-11" (*the medium-constraint karst feature shown on Schedule "E-11" to this Plan)* or karst feature SW-1 from the Wood PLC Subwatershed Studies (Phase 1 and 2).

Timberlee Homes owns the property where the karst feature referenced in Draft OPA 63 as Schedule E-8, Northeast "K" *(the feature located in the area designated "Open Space" to the north of Spring Creek Road)* or karst feature NW-2 from the Wood PLC Subwatershed Studies (Phase 1 and 2).

Phelps Homes owns the property where the karst feature referenced in Draft OPA 63 as Schedule E-11 *(the more northerly of the two features shown on that schedule) or* Karst Feature SW-2 from the Wood PLC Subwatershed Study (Phase 1 and 2). This karst feature is not discussed herein as it is located in a White Elm Mineral Deciduous Swamp Type that is within a Fresh-Moist Shagbark Hickory Deciduous Forestry Type according to the Wood PLC (2022) Draft Phase 2 Subwatershed Study. This feature is protected from development because it is located within an ecologically sensitive area as described above. This karst feature is not discussed any further in this document.

Section 17 of Draft OPA 63 states the following:

"17. Natural Hazards

Lands within the Smithville Master Community Plan (MCP) Area that are subject to flood and erosion hazards are generally included in the Natural Heritage System, either as part of a Core Area or as part of a Conceptual Buffer. Development within the Conservation Authority Regulation Limit will be subject to the approval of the NPCA.

Karst features, which the Provincial Policy Statement, 2020 includes in its definition of "hazardous sites" due to unstable bedrock conditions, are identified on Schedules "E-8", "E-11", and "E-12" using the letter "K". These features are not considered components of the Smithville Natural Heritage System (NHS) but are nonetheless subject to the policies of this section as Natural Hazard features.

Karst features are categorized as high-constraint, medium-constraint, or low-constraint. There are three high-constraint karst features in the Smithville MCP Area: two high-constraint features are shown on Schedule "E-8" (the feature located in the area designated "Open Space" to the north of Spring Creek Road and the feature located south of the railway) and another on Schedule "E-11" (the more northerly of the two features shown on that schedule). The other two karst features identified on the schedules are medium-constraint features. Low-constraint karst features are not identified on the schedules to this Plan.

a) The Natural Hazard policies set out in Section 10.6 of the Township of West Lincoln's Official Plan shall apply to all lands in the Smithville MCP Area.

b) Where an EIS has identified a flood or erosion hazard corridor that is not included as part of the NHS on Schedule "E-12", the corridor may be designated as a Buffer, Linkage Area, or Recommended Restoration Area, as determined by the Township in consultation with the Region and the NPCA and based on the recommendations made in the EIS.

c) Although karst features have not been included as components of the NHS, they may be added using an appropriate designation if an EIS has determined that the karst feature forms part of a key natural heritage feature or water resource feature, or that the karst feature is supportive of the ecological or hydrological functions of a key natural heritage feature or water resource feature.

d) No development or site alteration shall be permitted within 50 metres of:

i. a high-constraint karst feature; or

ii. the medium-constraint karst feature shown on Schedule "E-11" to this Plan.

e) No development or site alteration shall be permitted within 50 metres of a medium-constraint karst feature not identified in No. 17.d) ii above, unless a Karst Hazard Assessment has been completed and has demonstrated that:

i. the proposed development or site alteration will have no adverse impact on the hazard with respect to the control of flooding, erosion, or other hazard-related conditions;

ii. all applicable Provincial standards related to floodproofing, protection works, and access can be met and will be implemented;

iii. people and vehicles have a way to safely enter and exit the area during times of flooding, erosion, and other emergencies;

iv. the proposed development or site alteration will not aggravate an existing hazard or create a new hazard; and

v. there will be no negative impacts on the ecological or hydrological functions of the feature.

f) Any development or site alteration proposed within 50 metres of a karst feature shall be subject to the approval of the NPCA, in accordance with NPCA regulations and policies.

g) Where development or site alteration is proposed within 50 metres of a low-constraint karst feature, the proponent may be required to undertake a geotechnical study, EIS, or similar study, which may make recommendations regarding the removal or by-passing of the feature.

h) Where a karst feature is left to function in the landscape, any development or site alteration within the same drainage area of that feature shall be required to undertake a water balance study to ensure that post-development flows to the feature do not exceed pre-development flows, to the greatest extent possible.

i) All flood control and erosion control measures associated with future development in the Smithville MCP Area shall have regard to the unitary storage and discharge criteria set out in the SWS, unless such criteria have been refined based on the recommendations of an approved EIS or similar study."

Appropriate Schedules showing the Karst Features in mapping format are attached in Appendix 1.

Section 4.2, Karst Subsection 4.2.2 Impact Assessment and Section 5.2 *Summary – Karst* of the Wood PLC (2002, March 29) Draft Smithville Subwatershed Study – Phase 2: Impact Assessment states the following:

"Subsection 4.2.2 Impact Assessment

As noted in Section 2.1.2.4, karst sinkholes have the potential to impact development via bedrock instability and flooding. The PPS (Section 3.1.1[c]) defines "Karst Topography" as having the potential to be a "Karst Hazardous Site" which could impact development. The NPCA regulates karst features under Regulation 155/06 which requires an evaluation of each feature. The NPCA Policy Document (May 2020, Section 7.2.3.1) does not specify setbacks/buffers to all karst features, but those deemed to be a Karst Hazardous Site (KHS) require buffers of 50 m pending further studies.

Of the 7 features mapped within the study area, three have been evaluated as having a high constraint (NW 2, NW 3 and SW 2) based factors such as size, positon in the landscape, and hydrological/hydrogeological role. These are all considered to be KHS's with a requirement to buffer by 50 m. Feature SW 1, although classed as a moderate constraint, should also be considered to be a KHS principally because, although relatively small, is very active having rapidly sloughing, vertical walls leading into the sinkhole's throat which could present a human hazard.

Subsection 5.2 *Summary – Karst*

Hazard constraints have been applied to each feature described in sections 2.1.2 and 4.2.1 as 'high', 'moderate' or 'low' based on qualitative factors associated with size, position in the landscape, and hydrological/hydrogeological function. Section 4.2.2 provides an impact assessment for each of the 6 karst features within the study area (as noted, SE 2 is not considered to be karst) and this informs management options.

Sinkholes NW 3 and SE 2, both defined as Karst Hazardous Sites (KHS), have significant hydrological and hydrogeologial functions and should be buffered by 50 m and left to function within the post-development landscape.

NW 2 is also classified as a KHS due in large part to its position in the landscape, near the local height of land which suggests it could be associated with a paleokarst formed during an earlier period. It is the Study Team's opinion that Smithville Cave, for example, is a paleokarst feature so this is one possibility. Until recently, the sinkhole was loated within an area of natural vegetation which could be restored.

SW 1 is also classed as a KHS. It does not have a significant hydrological/hydrogeological function and has likely formed since deforestation of the area. The primary hazard associated with this feature is its steep, sloughing banks which clearly create a human hazard, particularly to children. Its ecological role is likely minimal as it takes substantial sediment from the surrounding fields along with any herbicides or fertilzers that may be applied. Management options associated with SW 1 include removal (excavation and grouting) or incorporation within the NHS. In the former case, it should be left as some form of open space, as there would still be a potential for structural hazard; in the latter case, it should be vegetated to prevent/minimize further sediment movement.

Sinkhole NW 1 is likely the result of an undersized culvert beneath the rail line. Although not a KHS, it does have the potential to impact drainage on South Grimsby Road 6 and, thus the best management option is to re-size this culvert then the feature can be filled-in.

All of the culverts beneath the rail line are likely undersized – there appears to be significant spring flooding in each– and all should be right sized.

Sinkholes SE 1 and SE 3 do not pose significant structural or flooding hazards and could be left or by-passed.

As noted in Section 2.1.2.5, water balance studies are required for any sinkholes that are left to function in the landscape. Each has a set capacity which if/when exceeded will result in back flooding at the sinkhole. Hence, post-development flows should not exceed pre-development flow to the degree possible."

It is Terra-Dynamics understanding that karst components of the Wood PLC (2002, March 29) Subwatershed Study Phase 2 were used to formulate *Section 17* of Draft OPA 63. As such, we have prepared the following summary table to directly compare the numbering systems between these two documents for clarity. The appropriate Schedules showing the Karst Features in mapping format from Draft OPA 63 are attached in Appendix 1. Figure 4.2.1 from the Wood PLC (2022, March 29) Subwatershed Study, Phase 2 is also presented herein in Appendix 1 and mapping from the Phase 1 Subwatershed Study showing karst features SW-1 and SW-2.

Summary Table of Comparison Of Karst Feature Mapping Information, Subwatershed Study and Draft OPA 63

Subwatershed Study Definition	Draft OPA 63 Definition
Karst Feature NW-2	Schedule E-8, Northeast "K" *(the feature located in the area designated "Open Space" to the north of Spring Creek Road)*
Karst Feature NW-3	Schedule "E-8", Southern "K" (*the feature located south of the railway)*
Karst Feature SW-2	Schedule "E-11", Northern "K" *(the more northerly of the two features shown on that schedule)*
Karst Feature SW-1	Schedule "E-11", Southern "K" (*the medium-constraint karst feature shown on Schedule "E-11" to this Plan)*

3.0 Terra-Dynamics Comments on Draft Amendment Number 63 to the Official Plan of the Township of West Lincoln and the Supporting Smithville Subwatershed Study, Phases 1 and 2

<u>Terra-Dynamics Comment 1.</u> The Use of Karst Constraint Mapping in the Subwatershed Studies and Draft OPA 63 Does Not Comply with the Niagara Peninsula Conservation Authority Conservation Authority Policy of Ontario Regulation 155/06, Karst Hazard Policy

The Niagara Peninsula Conservation Authority (NPCA) regulates karst within their watershed which includes West Lincoln. The NPCA's Hazardous Sites Policy is presented herein in Appendix 2.

It is the undersigned professional opinion in reading the NPCA's Hazard Policy that a site-specific Karst Hazard Risk Assessment, prepared by a karst specialist and a geotechnical engineer, is required before land within the NPCA's watershed can be deemed a development exclusion zone or in terms of the Smithville Subwatershed, Phases 1 and 2 Studies – a High or Medium Constraint Feature. The subwatershed studies did not complete any substantive assessments of:

- Flow monitoring into a karst feature;
- Dye trace studies of the water sinking into a karst feature;
- Geophysical mapping;

- Drilling programs adjacent to a karst feature; or
- Excavation of overburden materials.

This is described in Section 7.0, Subsection 7.1.2 *Defining and Assessing Hazardous Site* of the NPCA Hazard Policy as follows:

"Hazardous sites are considered to be part of the NPCA's regulated areas. Due to the site specific nature of areas of unstable soil or unstable bedrock, it is difficult to identify these hazards without detailed mapping and studies. The potential for catastrophic failures in some areas of unstable soil and unstable bedrock warrant site-specific studies to determine the extent of these hazardous sites, and therefore the appropriate limits of the hazard and regulation limits. The regulated area will be based on the conclusions and recommendations of such studies, to the satisfaction of the NPCA. Accordingly, the limits for hazardous lands, such as leda clays, organic soils and karst formations, shall be determined on a site-specific basis according to the Ministry of Natural Resources Technical Guide for Hazardous Sites (1996) and Understanding Natural Hazards (2001). The policies of this provide additional context and guidance for two specific types of hazardous sites which are known to existing within the watershed:

a) Karst formations; and,
b) Back-dune areas."

In other words, the Subwatershed Studies completed the first 3 of 5 requirements of the *Ministry of Natural Resources Technical Guide for Hazardous Sites (1996)* which are listed below:

1. Information Study;
2. Initial Site Inspection;
3. Reporting of Visual Inspection;
4. Subsurface Investigation; and
5. Analyses and Reporting.

The Subwatershed Study, Phase 1 and Phase 2 reports can be described as a *Phase 1: Preliminary Work – Desktop Study and Initial Site Visit* evaluation as referenced by F. R. Brunton of the Ontario Geological Survey (2013) within the *Proposed Guidelines for Geotechnical Investigations Related to Karst Hazards in Ontario* Section in his paper titled *Karst and Hazards Lands Mitigation: Some Guidelines for Geological and Geotechnical Investigations in Ontario Karst Terrains*. To deem land as a High Constraint for development or a development exclusion zone, as per Brunton (2013), a Phase 2 Investigation is required which Brunton describes as *Field-Based Karst Investigations – Passive to Invasive Investigations* which can include:

(i) Passive Geophysical Mapping;
(ii) Soil Probing or Excavation;
(iii) Rock Drilling and Well Studies; and
(iv) Tracer Studies.

Additional information pertinent to the need for a site-specific Karst Hazard Risk Assessment, prepared by a karst specialist and a geotechnical engineer, in order to develop on, or near a hazardous site is

explicitly stated in Section 7.2 of the NPCA Policy titled Policies for Planning and Regulating Hazardous Sites (Appendix 2).

<u>Terra-Dynamics Comment 2</u>. There is No Scientific or Engineering Support to the Classification of Low, Medium and High Karst Constraint Areas

Similar to the above referenced Terra-Dynamics Comment No. 1, there is no scientific or engineering information on the constraint mapping classification. Specifically,

1. There are no dimensions of sinkholes with respect to width, length and depth;
2. There are no calculations of the surface area of the catchment area of stormwater that drains towards each sinkhole/sinkpoint;
3. There is no quantification of the hazard risk; and
4. As a repeat of Comment No. 1, there are no scientific or engineering studies in which to assess risk.

The types of studies required to assess risk are documented by the Ministry of Natural Resources Technical Guide for Hazardous Sites (1996) and the Ontario Geological Survey (Brunton, 2013). Further quantification of karst hazard risk is described by the BC Resources Inventory Committee (2001) or Zhou et al (2003).

<u>Terra-Dynamics Comment 3.</u> Conflicting Information Pertaining to the Subwatershed Studies Karst Feature SW-1 and the Draft OPA 63 No Development Within 50 m of Karst Feature Shown on Schedule "E-11" (*the medium-constraint karst feature shown on Schedule "E-11" to this Plan)*

Appendix 3 contains a series of PowerPoint presentation slides from the March 3, 2022 presentation by Wood PLC and its subconsultants pertaining to Karst. The Mitigation Alternatives/SW Karst Area the recommendation for Medium Constraint Feature SW-1 is to *"excavate, evaluate and grout can be considered.*"

Phase 2 of the Wood PLC (2022, March 29) Subwatershed Study describes this feature as follows:

"SW 1 is also classed as a KHS (Karst Hazardous Site)*. It does not have a significant hydrological/ hydrogeological function and has likely formed since deforestation of the area. The primary hazard associated with this feature is its steep, sloughing banks which clearly create a human hazard, particularly to children. Its ecological role is likely minimal as it takes substantial sediment from the surrounding fields along with any herbicides or fertilzers that may be applied. Management options associated with SW 1 include removal (excavation and grouting) or incorporation within the NHS* (Natural Heitage System)*. In the former case, it should be left as some form of open space, as there would still be a potential for structural hazard; in the latter case, it should be vegetated to prevent/minimize further sediment movement."*

With reference to Terra-Dynamics Comment 1, the "potential for structural hazard" cannot be determined from a Phase 1: Preliminary Work – Desktop Study and Initial Site Visit evaluation as described by the Ontario Geological Survey, Brunton (2013). It is the professional opinion of the undersigned that a more thorough investigation is required which should consist of dye tracing, excavation and an evaluation of the feature's structure by a geotechnical engineer as per the NPCA's Karst Hazard Policy. It is also the professional opinion of the undersigned that steep sloughing banks

may create a human hazard to children (of note, this feature is presently fenced-off restricting access), however, sloughing banks on the edges of a sinkhole can easily be remedied by reducing the slopes of a sinkhole and more importantly does not preclude site development based on favourable results from additional karst and geotechnical studies.

Terra-Dynamics Comment No. 4. Karst Feature Schedule E-8, Northeast "K" ***(the feature located in the area designated "Open Space" to the north of Spring Creek Road) Does Not Warrant High Karst Constraint Status or Development Exclusion Status Based on Information Presented in the Subwatershed Study Phase 1 and 2 Reports***

Further to Comments 1 and herein, there is not enough information to classify constraints for Karst Feature NW-2 or Schedule E-8, Northeast "K" *(the feature located in the area designated "Open Space" to the north of Spring Creek Road).* Timberlee Homes retained Terra-Dynamics in March, 2021 to complete a karst assessment of the NW-2 sinkpoint. The assessment is a work-in-progress but Sinkpoint NW-2 is an approximate 15 m depression in a farm field that receives less than 1.0 Litre/sec of flow (less than a garden hose flow rate) after significant rain events.

It is the professional opinion of the undersigned that this sinkpoint is likely not hazardous and may represent a pocket of buried tree stumps when the parcel of land was cleared for agricultural purposes in 2018 to 2020. This area warrants excavation and study by a karst specialist and a geotechnical engineer before it can be classified as a hazardous site.

A biographical sketch of the author of this letter is attached in Appendix 4. Please do not hesitate to contact the undersigned if there are any questions.

Respectfully submitted,

TERRA-DYNAMICS CONSULTING INC.

David D. Slaine, M.Sc., P. Geo.
Principal Hydrogeologist & President

c.c. David Deluce, NPCA
Sarah Mastroianni, NPCA
John Georgakakis, JTG Holdings Inc.
Don Manson, Timberlee Homes
Fred VanderVelde, Royal Lepage
Suzanne Mammel, Stantec
David Samis, Phelps Homes
Jowett Lau, Phelps Homes
Barry Myler, Myler Ecological Consulting
Ian Shaw, Soil-Mat Engineers & Consultants

Attachments

Appendix 1 Schedules from the Town of West Lincoln Draft OPA 63 and Maps from the Wood PLC Subwatershed Study Showing the Karst Features
Appendix 2 NPCA Policies for Planning and Regulating Hazardous Sites, 2020
Appendix 3 March 3, 2022 Wood PLC PowerPoint Presentation Slides Pertinent to Karst Features
Appendix 4 Biographical Sketch of David Slaine, M.Sc., P. Geo.

4.0 References

British Columbia Resources Inventory Committee. 2001. Karst Inventory Standards and Vulnerability Assessment Procedures for British Columbia. The Karst Task Force, the Province of British Columbia Publisher, ISBN 0-7726-4488 8, 112 p.

Brunton, F.R. 2013. Karst and Hazard Lands Mitigation: Some Guidelines for Geological and Geotechnical Investigations in Ontario Karst Terrains. In Summary of Field Work and Other Activities 2013, Open File Report 6290, Project 37. Earth Resources and Geoscience Mapping Section. Ontario Geological Survey, Project Unit 08-004, p. 37-1 to 37-24.

Niagara Peninsula Conservation Authority. 2020, May 21. Niagara Peninsula Conservation Authority Policy Document: Policies for Administration of Ontario Regulation 155/06 and the Planning Act, 146 p.

Ministry of Natural Resources & Forestry (MNRF). 1996. Hazardous Sites Technical Guide.

Wood PLC. 2021. Subwatershed Study – Phase 1: Characterization and Integration. Smithville Subwatershed Study and Stormwater Management Plan, prepared for the Township of West Lincoln, 88 p and appendices.

Wood PLC. 2022, March 29. Subwatershed Study – Phase 2: Impact Assessment (Draft). Smithville Subwatershed Study and Stormwater Management Plan, prepared for the Township of West Lincoln, 88 p and appendices.

Zhou, W., Beck, B.F., and A. I. Adams (2003). Sinkhole Risk Assessment along Highway I-70 near Fredrick, Maryland. In Sinkholes and the Engineering and Environmental Impacts of Karst, Proceedings of the Ninth Multidisciplinary Conference, Geotechnical Special Publication No. 122, Editors: Barry Beck and P.E. LaMoreaux & Associates, Inc. p. 591 – 601.

Appendix 1

Schedules from the Town of West Lincoln Draft OPA 63 and Maps from the Wood PLC Subwatershed Study Showing the Karst Features

OPA NO. 63
SCHEDULE "J"

DRAFT

TOWNSHIP OF WEST LINCOLN OFFICIAL PLAN

SCHEDULE "E-8" SMITHVILLE MCP NORTH COMMUNITY AREA LAND USE PLAN

Young Street
STREET A
14
Special Policy Area 1
K
1
2
3
4
Spring Creek Rd
S. Grimsby Rd 6
20
S. Grimsby Rd 5
C.P.R.
West St
Station St
Industrial Park Rd

Legend

- Built-up Area
- Secondary Plan Sub-Area Boundary

Urban Place-Types

- Residential
- Medium Density
- Mixed Use Node
- Commercial
- Open Space
- Community Facility
- Employment
- Restricted Employment

Natural Heritage System

- Natural Heritage System (NHS)
- Conceptual Buffer
- Recommended Restoration Area
- Potential Restoration Area

Other Features

- Karst
- Wetlands for Further Review

Infrastructure/ Corridors

- Future Active Transportation/Trails
- Proposed SWM Facility
- Proposed Sanitary Pumping Station
- Gas Pipeline
- Hydro Corridor
- Existing Rail Corridor

West Lincoln
Your Future Naturally

PLANNING DEPARTMENT

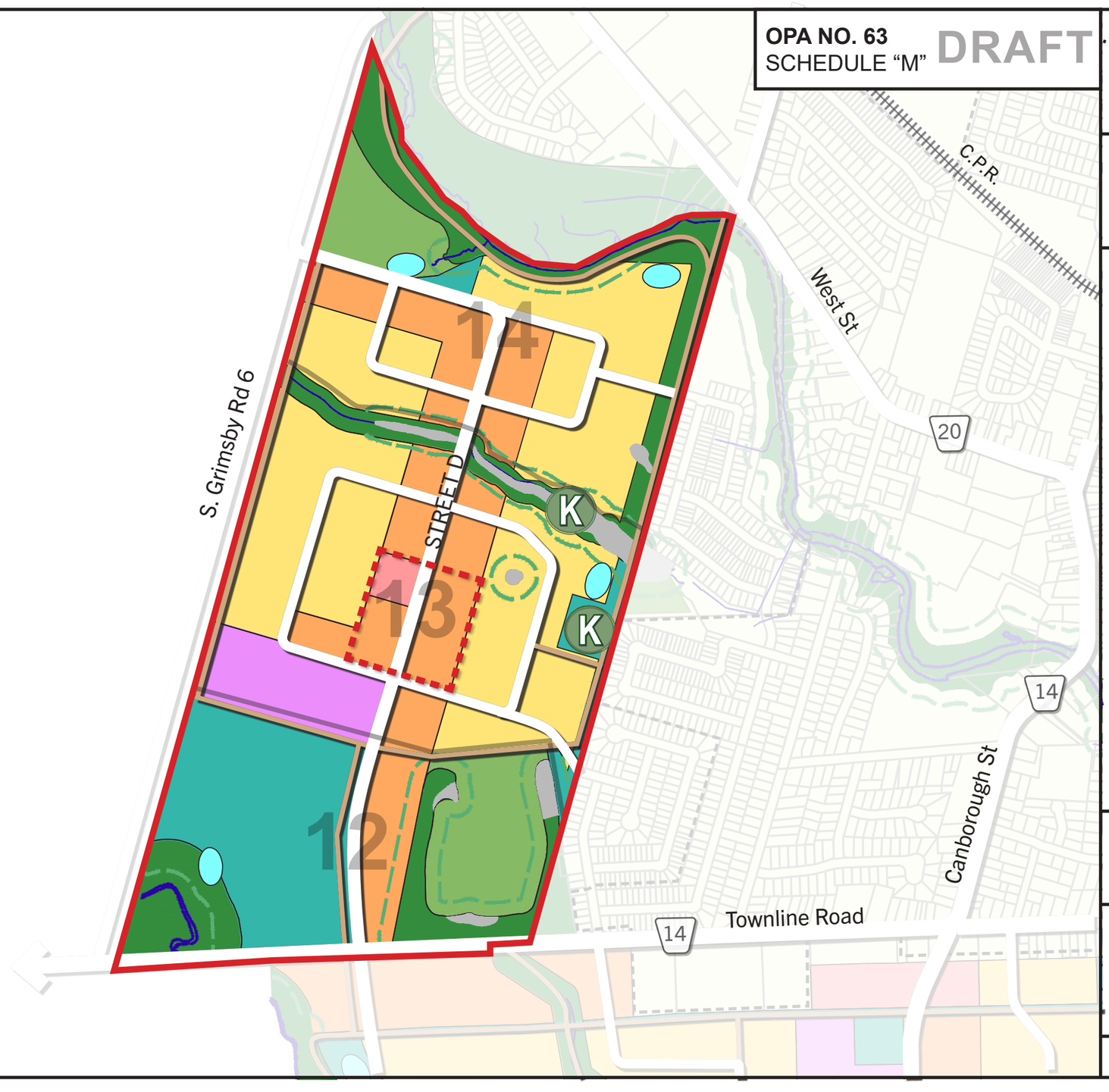
Note:
This Schedule forms part of the Township's Official Plan and must be read in conjunction with the text.

Detail on some features maybe lost at this scale.

Date: May 2022

OPA NO. 63
SCHEDULE "M"

DRAFT



TOWNSHIP OF WEST LINCOLN OFFICIAL PLAN

SCHEDULE "E-11" SMITHVILLE MCP WEST COMMUNITY AREA LAND USE PLAN

Legend

- Built-up Area
- Secondary Plan Sub-Area Boundary

Urban Place-Types

- Residential
- Medium Density
- Mixed Use Node
- Commercial
- Open Space
- Community Facility
- Employment
- Restricted Employment

Natural Heritage System

- Natural Heritage System (NHS)
- Conceptual Buffer
- Recommended Restoration Area
- Potential Restoration Area

Other Features

- Karst
- Wetlands for Further Review

Infrastructure/ Corridors

- Future Active Transportation/Trails
- Proposed SWM Facility
- Proposed Sanitary Pumping Station
- Gas Pipeline
- Hydro Corridor
- Existing Rail Corridor

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PLANNING DEPARTMENT

Note:
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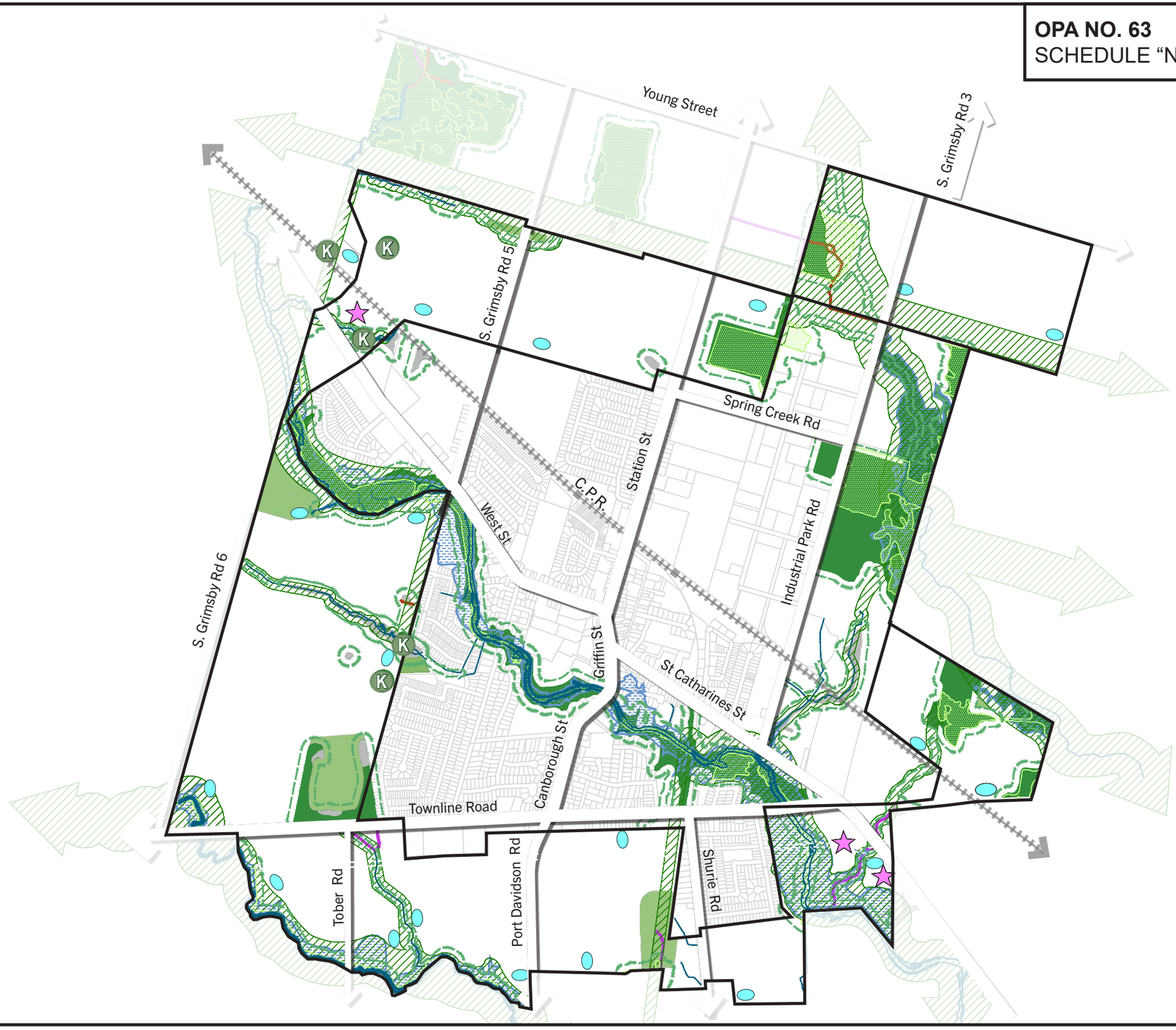
Detail on some features maybe lost at this scale.

Date: May 2022

OPA NO. 63
SCHEDULE "N"

DRAFT



TOWNSHIP OF WEST LINCOLN OFFICIAL PLAN

SCHEDULE "E-12" SMITHVILLE NATURAL HERITAGE SYSTEM

Legend

- Secondary Plan Sub-Area Boundary

Natural Heritage System

- Core Area
- Conceptual Buffer
- Recommended Restoration Area
- Linkage

Other Features

- Karst
- Potential Restoration Area
- Provincially Significant Wetland (MNRF)
- Wetlands for Further Review
- Floodline (NPCA)

Waterbodies

- Watercourse
- HDF Protection
- HDF Conservation
- Proposed SWM Facility

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PLANNING DEPARTMENT

Note:
This Schedule forms part of the Township's Official Plan and must be read in conjunction with the text.

Detail on some features maybe lost at this scale.

Date: May 2022

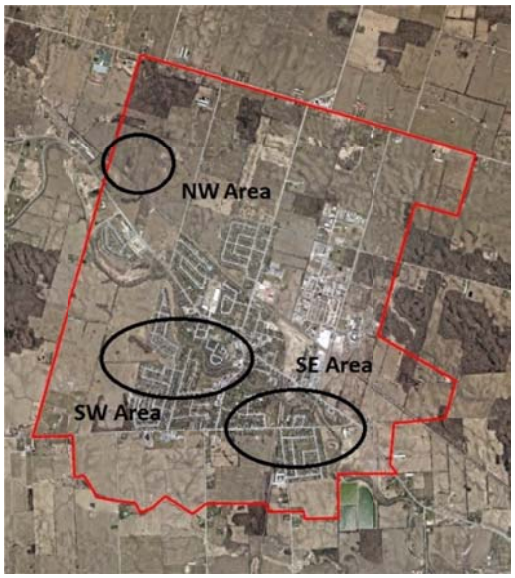


Figure 3.4.1. Karst Areas

Figure 3.4.2. Northwest Karst Features

Figure 3.4.3. Southwest Karst Features

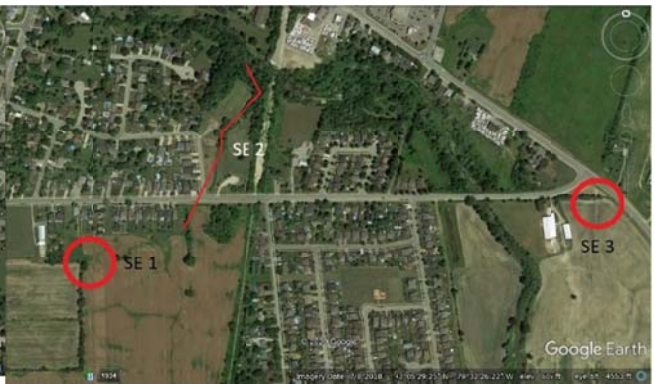


Figure 3.4.4. Southeast Karst Features

Sinkholes range from a very small surface depression taking water from a culvert (SE 3) to a large, significant feature (SW 2) draining an unnamed tributary of Twenty Mile Creek west of Wade Road. This latter feature lies about 440 m due west of SW 4 which is known to drain into the Smithville Cave (Worthington 2002). Most streamsinks and the loosing stream (SE 2) are the result of opportunistic capture either naturally or due to human activities.

Smithville Cave was originally studied and mapped by Young (1981). Worthington (2002) further investigated the cave as part of the CWML site investigations. As part of this work he undertook dye trace investigation at two locations. Figure 3.4.5 shows the approximate location of the cave, 2 dye-traced flowpaths and an inferred flow path (this study). The major and minor joint orientations are also provided in an insert joint rose diagram prepared by Novakowski et al. (2000).

Smithville Cave is oriented approximately parallel to minor joint set "V" and each of the 3 flowpaths lie within the range of orientations of major joint set "I". These joint orientations are for the Eramosa Formation but are similar to those in the underlying Guelph Formation.

Sinkholes SW 2 and SW 3 and spring SW 5 (Figure 3.4.3) are all on the trend of the inferred flow pathway. As noted, known connections between the cave and the spring and sinkhole SW4 and the spring have been identified by dye tracing. It is important to note that the traced connections (and the inferred

Due to lack of access, the sinkhole could not be described or measued in detail but it's essential data are as follows:

- Description – a large closed depression in the order of 30 m or so diameter and a depth in the order of 7 to 8 m;
- Constraint level – high;
- UTM Coordinates (interpreted) – 617300/4474250;
- HDF stream reach – TM4(5)2; and
- Distance from Twenty Mile Creek – 349 m.

Figure 4.2.1. Updated Map of NW Karst features with Addition of the Sinkhole located at NW 3

4.2.2 Impact Assessment

As noted in Section 2.1.2.4, karst sinkholes have the potential to impact development via bedrock instability and flooding. The PPS (Section 3.1.1[c]) defines "Karst Topography" as having the potential to be a "Karst Hazardous Site" which could impact development. The NPCA regulates karst features under Regulation 155/06 which requires an evaluation of each feature. The NPCA Policy Document (May 2020, Section 7.2.3.1) does not specify setbacks/buffers to all karst features, but those deemed to be a Karst Hazardous Site (KHS) require buffers of 50 m pending further studies.

Of the 7 features mapped within the study area, three have been evaluated as having a high constraint (NW 2, NW 3 and SW 2) based factors such as size, positon in the landscape, and hydrological/hydrogeological role. These are all considered to be KHS's with a requirement to buffer by 50 m. Feature SW 1, although classed as a moderate constraint, should also be considered to be a KHS principally because, although relatively small, is very active having rapidly sloughing, vertical walls leading into the sinkhole's throat which could present a human hazard.

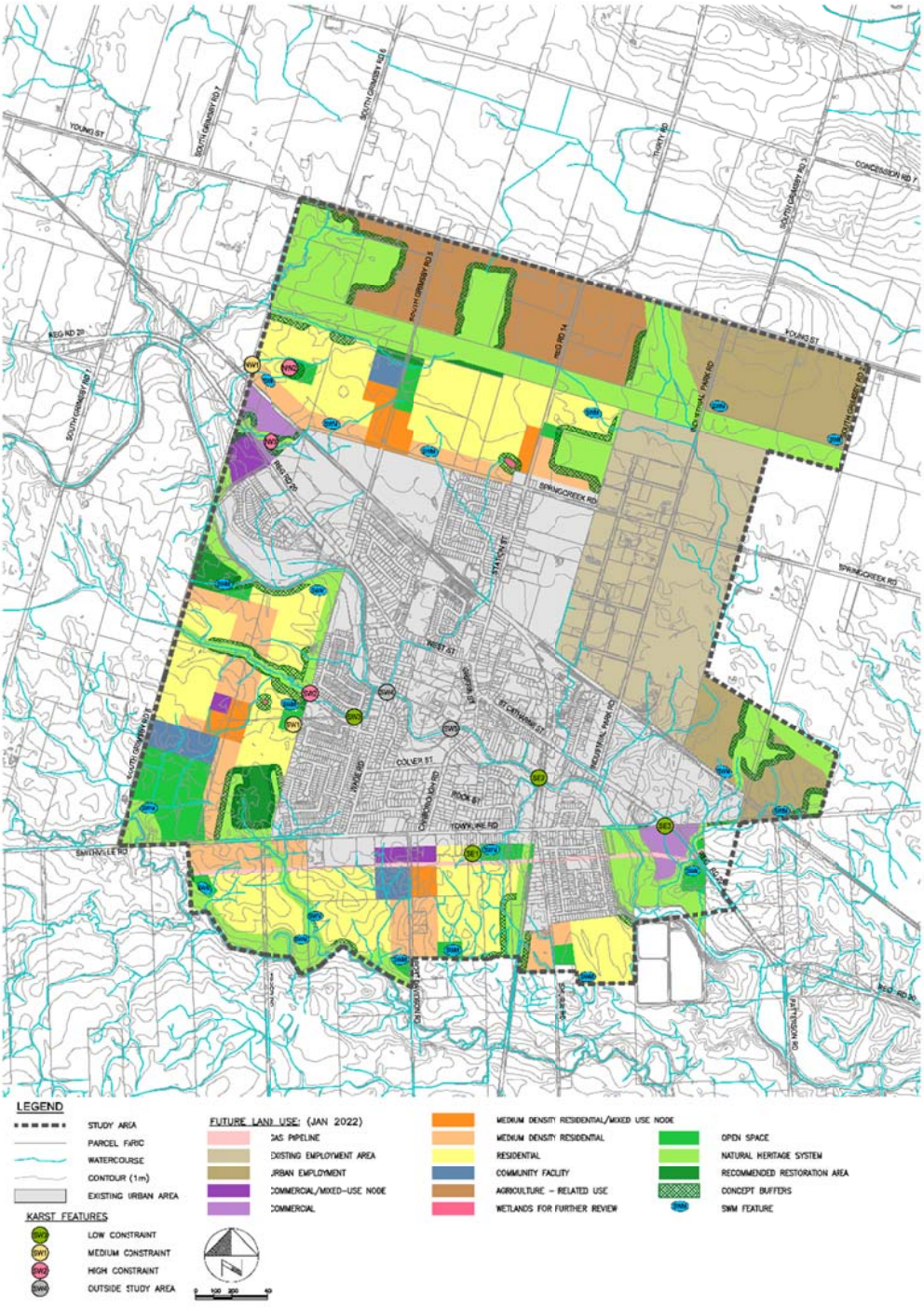
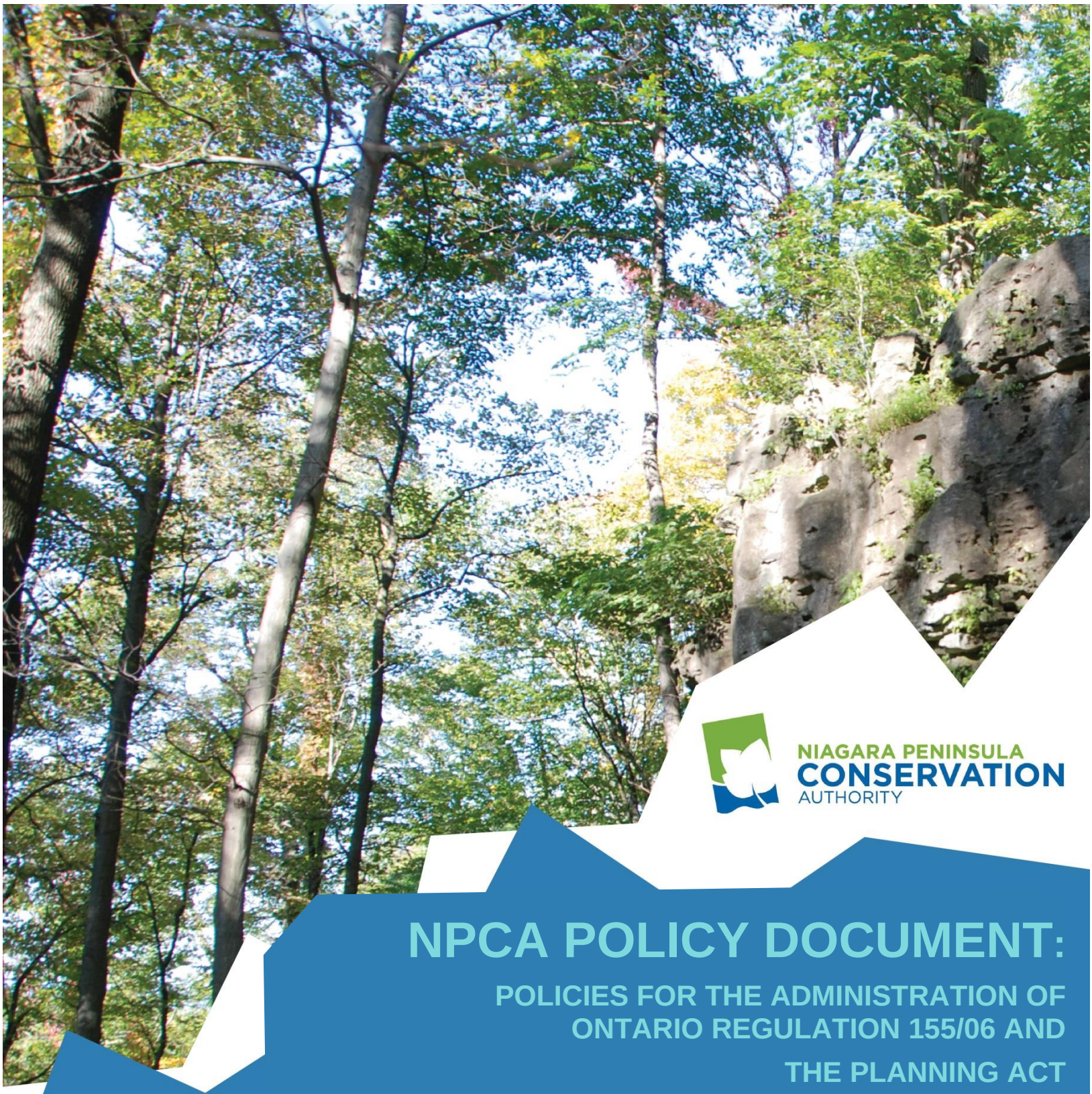


Figure 3.1.1. Revised Preliminary Preferred Concept Plan – Land Use

The revised Preliminary Preferred Concept Plan was then used to test management alternatives and develop a recommended environmental and stormwater management plan for the future development area in the community of Smithville, and to complete the Phase 2 Impact Assessment for the Subwatershed Study.

Appendix 2

NPCA Policies for Planning and Regulating Hazardous Sites, 2020



NIAGARA PENINSULA CONSERVATION AUTHORITY

NPCA POLICY DOCUMENT:

POLICIES FOR THE ADMINISTRATION OF ONTARIO REGULATION 155/06 AND THE PLANNING ACT

May 21, 2020 Consolidation

7.0 HAZARDOUS SITES

7.1 WHAT ARE HAZARDOUS SITES?

7.1.1 Hazardous Sites and Hazardous Lands

The Provincial Policy Statement defines hazardous sites as lands that could be unsafe for development due to naturally occurring hazards. These may include unstable soils (sensitive marine clays [leda], organic soils) or unstable bedrock (karst topography). The Conservation Authorities Act uses a similar term, referring to hazardous lands, which are lands that are unsafe to development due to naturally occurring processes. Naturally occurring processes includes flooding, erosion, dynamic beaches and unstable soils. In the context of the Conservation Authorities Act, the term hazardous lands is used as a general term, referring to a full range of natural hazards (i.e. flooding, erosion, unstable soils) . Earlier chapters in this document address hazardous lands associated with flooding (Chapter 4), dynamic beaches (Chapter 5), erosion and unstable slopes (Chapter 6). The following chapter provides guidance for hazardous lands associated with unstable soils, such as sensitive marine clays (leda clays), organic soils and unstable bedrock, such as karst formations (such as sinkholes and caves). The term hazardous

site is used in this chapter to refer to naturally occurring hazards associated with unstable soils and unstable bedrock (similar in definition to the term hazardous sites which is used in the PPS to describe a similar feature). This chapter also provides guidance for unstable soils associated with back-dunes areas.

7.1.2 Defining and Assessing Hazardous Site

Hazardous sites are considered to be part of the NPCA's regulated areas. Due to the site specific nature of areas of unstable soil or unstable bedrock, it is difficult to identify these hazards without detailed mapping and studies. The potential for catastrophic failures in some areas of unstable soil and unstable bedrock warrant site specific studies to determine the extent of these hazardous sites, and therefore the appropriate limits of the hazard and regulation limits. The regulated area will be based on the conclusions and recommendations of such studies, to the satisfaction of NPCA. Accordingly, the limits for hazardous lands, such as leda clays, organic soils and karst formations, shall be determined on a site-specific basis according to the Ministry of Natural Resources Technical Guide for Hazardous Sites (1996) and Understanding Natural Hazards (2001). The policies of this provide additional context and guidance for two specific types of hazardous sites which are known to existing within the watershed:

a) Karst formations; and,
b) Back-dune areas.

7.1.3 Karst Formations

Karst is a landform that develops on or in limestone, dolomite, or gypsum by dissolution and is characterized by the presence of features such as sinkholes, underground (or internal) drainage through solution-enlarged fractures (joints) and caves. Karst formations can be significant geologic hazards. Sudden collapse of an underground opening of a sinkhole can cause surface subsidence that can severely damage overlying structures such as buildings, bridges or highways. Improperly backfilled sinkholes are prone to both gradual and sudden subsidence and similarly threaten overlying structures. Sewage, animal wastes and agricultural, industrial and ice control chemicals entering sinkholes as surface drainage are conducted directly and quickly into the groundwater/surface water systems.

There are at least five known locations within the watershed with Karst formations:

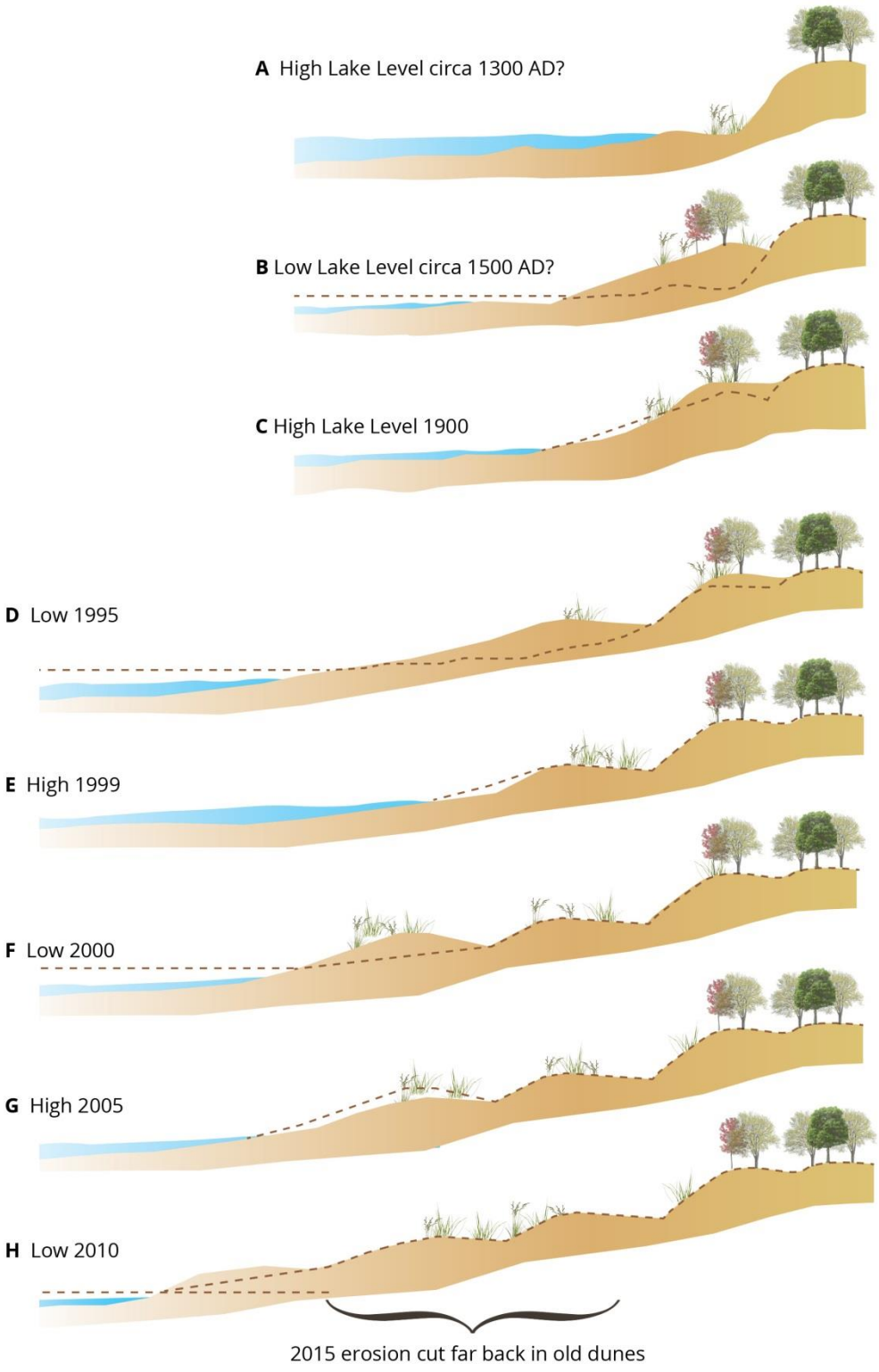
a) The Stoney Creek "Mountain" Area;
b) The Smithville Area;
c) The Gavora Drain and Balls Falls Area in Vineland,
d) The Brow of the Niagara Escarpment Area; and
e) The Onondaga Escarpment Area.

(Geologic Hazard Mapping Study, Karst Topography, Phase I, NPCA Watershed Area, Terra Dynamics, 2006)

7.1.4 Back-Dune Areas

There are a number of back-dune areas located in-land from shorelines of Lake Erie and Lake Ontario. Back dune areas are considered to be a natural hazard, as these are locations which may be susceptible to slope failure and erosion, but may not be part of an apparent valleyland or part of the shoreline hazard area (as overtime they receded beyond the extent of the shoreline area). Back dunes form as a result of long term changes of lake levels and a gradual recession of dune areas from the shoreline area. **Figure 7.1** illustrates back-dune formation. The NPCA will evaluate the potential risks associated with development on back-dunes on a case by case basis.

Figure 7.1: Back-Dune Formation



Adapted from Olson, J.S., 1958d. Dune development 3: lake-level, beach, and dune oscillations. J. Geol. 66, 473 – 483

7.2 POLICIES FOR PLANNING AND REGULATING HAZARDOUS SITES

7.2.1 Objectives

The objectives of the hazardous sites policies are to:

a) Prevent the loss of life;
b) Minimize property damage;
c) Reduce the potential for incurring public cost associated with the impacts of hazardous sites; and,
d) Manage existing risks and reduce the potential for future risks.

7.2.2 Development Regulation on Hazardous Sites

Generally, development and/or site alteration shall not be permitted on or near hazardous sites, including but not limited to karst formations, back-dune areas and other areas where unstable soils/bedrock is known to exist. However, development may be permitted subject to the completion of a geotechnical study completed by a qualified engineer which demonstrates that all hazards and risks associated with the site have been addressed. An EIS may also be required to ensure that there are no negative impacts on the ecological function of natural features. In addition, development and/or site alternation may be permitted on or near hazardous sites where the effects and risk to public safety are minor and can be mitigated by addressing the following items:

a) Applicable provincial standards related to floodproofing, protection works and access can be met and are implemented;
b) Vehicles and people have a way of safely entering and exiting the area during times of flooding, erosion and other emergencies;
c) Existing hazards are not aggravated;
d) New hazards are not created;
e) There are no negative impacts on ecological features or functions; and,
f) All other relevant site development concerns are addressed to the satisfaction of the NPCA.

7.2.3 Development within 50 metres of a Hazardous Site

7.2.3.1 Development within 50 metre of a Hazardous Site

Development and/or site alteration shall not be permitted within 50 metres of a hazardous site unless it can be demonstrated that there are no adverse impacts to the hazard with respect to the control of flooding, erosion, dynamic beaches, pollution and conservation of land. The NPCA may require a geotechnical study. An EIS may also be required to demonstrate that there are no negative impacts on the natural features or their ecological function.

7.2.4 Prohibited Uses

Notwithstanding the policies of this section, the following uses are prohibited within hazardous lands:

a) Sensitive uses, such as hospitals, nursing homes, day-cares/pre-schools and schools;
b) Emergency services facilities;
c) Uses associated with the disposal, treatment, manufacturing/processing or storage of hazardous substances;
d) Any other use or development deemed to be inappropriate based on the objectives stated in policy 7.2.1.

7.2.5 Infrastructure

Notwithstanding the policies of this section, infrastructure approved through an environmental assessment may be permitted within hazardous lands associated with unstable soil or bedrock, where it has been demonstrated to the satisfaction of the NPCA that the five tests under the Conservation Authorities Act have been addressed. Infrastructure approved through an environmental assessment process shall require a work permit to develop from the NPCA.

7.2.6 Water Wells

No water wells shall be installed within 50 metres of a karst feature. The NPCA may require an assessment of the draw down impact of the well on the water table and may decline approval where the draw down has the potential to destabilize karst topography.

7.2.7 Policy Considerations for Developing on or Near Karst Areas

The following issues must be addressed when developing on karst:

a) Storm water drainage: When the amount of paved surface is increased in developments, the rush of extra water gathered over the area can cause flooding.
b) Utilities: Buried utility lines can serve as a focus for sinkhole development, as they provide a break in the bedrock for storm water to enter and slowly dissolve it.
c) Groundwater contamination: Because water moves rapidly through karst, and undergoes little filtration, groundwater in karst areas is easily polluted. If contaminants are introduced into a karst system, they will spread quickly.
d) Flooding: Sinkholes and conduits may become blocked with debris and litter, resulting in back-up and flooding. Sinkholes are often used as a convenient place to place trash.

7.2.8 Lot Creation in Hazardous Sites

Lot creation may be permitted in those portions of hazardous lands and hazardous sites where the effects and risk to public safety are minor, could be mitigated in accordance with provincial standards, and where all of the following are demonstrated and achieved:

a) development and site alteration is carried out in accordance with floodproofing standards, protection works standards, and access standards;
b) vehicles and people have a way of safely entering and exiting the area during times of flooding, erosion and other emergencies;
c) new hazards are not created and existing hazards are not aggravated; and
d) no adverse environmental impacts will result.

Appendix 3

March 3, 2022 Wood PLC PowerPoint Presentation Slides Pertinent to Karst Features

wood.

West Lincoln
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Smithville Subwatershed Study and Stormwater Management Plan for the Community of Smithville

TAC Meeting #7
March 3, 2022

woodplc.com

Agenda

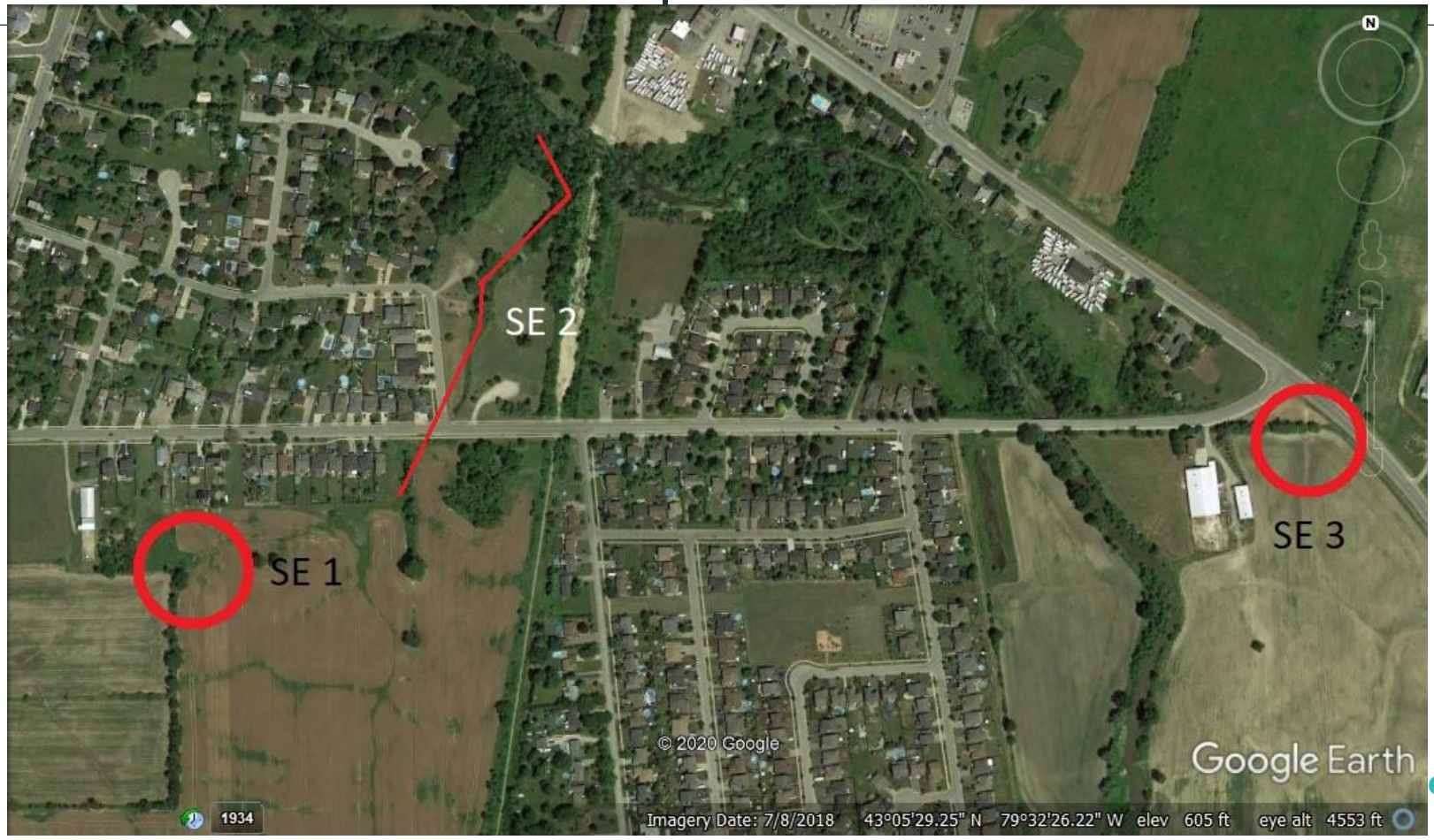
1. Introductions
2. Process Overview and Update
3. Presentation of Impact Assessment (Phase 2)
   - Overview (Wood)
   - Groundwater (Blackport/Matrix)
   - Karst (Cowell)
   - Surface Water (Wood)
   - Stream Morphology (Matrix)
   - Aquatic and Terrestrial Ecology (NRSI)
   - Climate Change Considerations (Wood/NRSI)
4. Next Steps and Schedule
5. Discussion

3. Presentation of Impact Assessment

Karst: **Key Input from Phase 1 Characterization**

3. Presentation of Impact Assessment

3. Presentation of Impact Assessment



3. Presentation of Impact Assessment

Karst

Findings from Phase 2a Impact Assessment

A) General

- Development from agriculture to urban will result in increased run-off within subwatersheds.
- Sinkholes have a set capacity to drain surface water via bedrock conduits.
- All 7 sinkholes within the study area reach capacity and overflow at least during spring freshet.
- As a result, post-development surface flow should not exceed pre-development flow.

3. Presentation of Impact Assessment

Karst

Findings from Phase 2a Impact Assessment

B) Sinkhole Specific

- Under Ontario Regulation 155/06, NPCA does not specify automatic setbacks/buffers to all sinkholes (Policy Doc. May 2020, Section 7.2.3.1) – rather each requires assessment.
- If the feature is defined as a *Karst Hazardous Site,* then a 50 m buffer is applied pending further study.
- Our assessment identified three 'high constraint' features as requiring 50 m buffers - NW 2, NW 3 and SW 2. These are formally KHS's under NPCA's policies.
- We also recommend that medium constraint sinkhole SW 1 be designated a KHS based on its active sloughing and near vertical walls.

3. Presentation of Impact Assessment

Karst

Findings from Phase 2a Impact Assessment

In the case of KHS's, NPCA's Development Regulation (Section 7.2.2) requires mitigation based on the following:

a) Applicable provincial standards related to floodproofing, protection works and access can be met and are implemented;

b) Vehicles and people have a way of safely entering and exiting the area during times of flooding, erosion and other emergencies;

c) Existing hazards are not aggravated;

d) New hazards are not created;

e) There are no negative impacts on ecological features or functions; and

f) All other relevant site development concerns are addressed to the satisfaction of the NPCA.

3. Presentation of Impact Assessment

Karst

Mitigation Alternatives/NW Karst Area

- NW 1 (M): Re-size culvert beneath rail line;
- NW 2 (H): leave as is and buffer by 50 m;
- NW 3 (H): Leave as is and buffer by 50m.

3. Presentation of Impact Assessment

Karst

Mitigation Alternatives/SW Karst Area

- SW 1 (M): Excavate, evaluate and grout can be considered.

- SW 2 (H): Key hydrogeological component to Smithville Cave system - leave as, determine flow capacity and flooding limits then buffer accordingly.

3. Presentation of Impact Assessment

Karst

Mitigation Alternatives/SE Karst Area

- SE 1 (M): Can be bypassed (no on-going flow).
- SE 3 (L): Can be bypassed (no on-going flow).

Appendix 4

Biographical Sketch, David Slaine, M.Sc., P. Geo.

Biographical Sketch of David Slaine, M.Sc., P. Geo.

David Slaine, M.Sc., P. Geo., Principal Hydrogeologist & President of Terra-Dynamics, is a native of Hamilton, ON and attended elementary and secondary school in Grimsby, ON. He graduated in 1978 with a B.Sc. (Hons) in Physical Geography (Geomorphology) from the University of Guelph followed by an M.Sc. in Hydrogeology from the University of Waterloo in 1983. He is a licensed Professional Geoscientist in Ontario (No. 365) and the States of Delaware (No. 1143), Florida (No. 1943), New York (No. 248) & Tennessee (No. 3641). He has worked as an environmental consultant his entire 39-year career. Mr. Slaine is a Federally and Provincially-recognized expert in hydrogeology. He has many years of experience in interacting with all levels of government regulators and officials.

His career started at Gartner Lee Limited of Markham, ON where he worked on numerous projects in Canada, the nuclear industry in Switzerland and Germany, and for the US NAVY and US ARMY geophysically mapping sites as part of Base remedial programs. Mr. Slaine spent at total of 14 years in the USA where during the time frame of 1994 to 2001 he was a Principal, and later a Vice President, of Geomatrix Consultants Inc. in San Francisco, CA which was ranked the 98th largest engineering consulting firm in the USA at that time. He started Terra-Dynamics Consulting Inc. in 2001 when he was one of the main contaminant hydrogeology consultants for Waste Management Inc. of Houston, TX. In this capacity he worked at landfill sites in 5 Provinces, 30 States and the US Territory of Guam. He worked on karst investigation and remediation projects at landfill sites in Florida and Tennessee and a large dye tracing project in Delaware.

Since returning to the Hamilton/Niagara area in 2001, he became the lead hydrogeological consultant for land developers in Hamilton in addition to nurseries, farms, Niagara wineries and two large chemical plants in Niagara. He was the hydrogeological peer reviewer for Bruce County of the potential contamination associated with the proposed Deep Geologic Repository for low and intermediate level radioactive waste at the Ontario Power Generation facility near Kincardine, ON. Mr. Slaine has completed over 30 karst assessments in the Hamilton area and in conjunction with geotechnical engineers, has successfully remediated over a dozen sinkholes that were permitted by the Hamilton Conservation Authority or Conservation Halton.

Attachment III: Memo on Smithville Master Community Plan March 11, 2022

SGL Planning & Design Inc.

1547 Bloor Street West
Toronto, Ontario M6P 1A5
☎ (416) 923-6630
✉ info@sglplanning.ca

Memorandum

DATE:	March 11, 2022	Project ID: UE.WL
TO:	Richard Vandezande	
	Cc: Steve Wever	
	Brian Treble	
	Tony Miele	
FROM:	Paul Lowes and Raymond Ziemba	
RE:	**Smithville Master Community Plan – Draft Key Policy Directions**	

On behalf of the Smithville Landowners Group, SGL Planning & Design Inc. (SGL) has reviewed the material presented at the February 24, 2022, TAC meeting regarding the Smithville Master Community Plan. We have reviewed the presentation with and have received comments from the Smithville Landowners Group. Based on that review, we provide the following comments and recommendations.

Community and Employment Area Land

The Preferred Concept Plan continues to show the triangle parcel in the southeast corner as Employment Areas whereas the Region's mapping shows it as Community Area, refer to **Figures 1** and **2**.

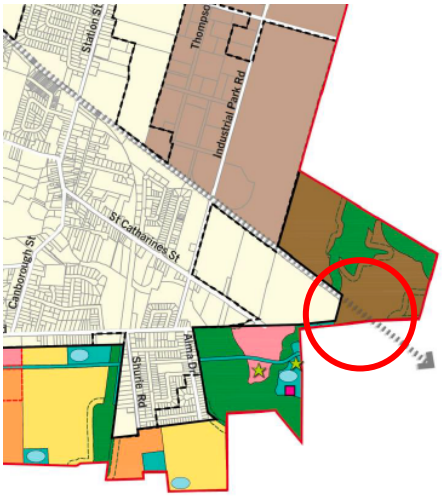


Figure 1: Township Preferred Concept – February 2022

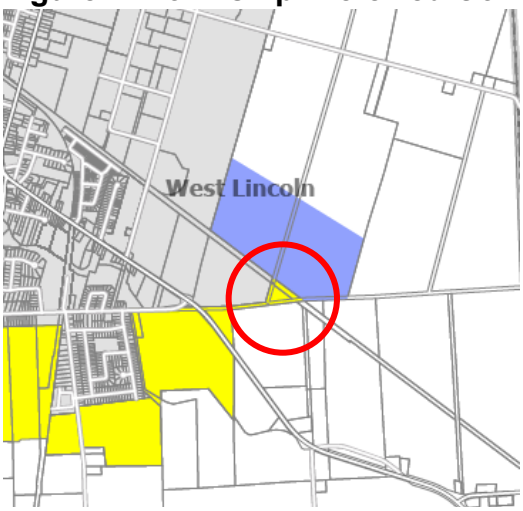


Figure 2: Niagara Region Urban Expansion Recommendation – March 2022

With the Region's Planning and Economic Development Committee meeting on March 9 to endorse the Urban Settlement Area Boundary recommendations, the Township's and Region's land use distribution should be consistent. We understand from speaking with Steve Wever (GSP Group.), this will be addressed, and the Region's mapping will be consistent with Townships.

Lands Uses

SWMP

We understand through meeting with Steve Wever that the stormwater management ponds (SWMP) and park locations are conceptual locations and a policy will be added to that effect. Nonetheless, our landowners have received input from their engineers that they recommend different locations for SWMPs. The location and planning for SWMPs needs to take into consideration the significant number of non-participants in

the plan area, which could significantly constrain development if there is no flexibility in the location of SWMPs. We request a separate TAC meeting to discuss the appropriate location of SWMPs. We also urge that the final OPA not delineate the location of the SWMPs but rather contain locational policies and refer back to the locations in the subwatershed study for guidance.

Mixed Use Areas
We request flexibility in the location of the mixed-use nodes so that they can be moved along the road spines in which they are located. We also need to understand the policies and permitted uses for Mixed-use as some are shown with commercial and others are not.

Medium Density
We note that the concept plan no longer provides for medium density uses along the northern by-pass. We request that the medium density arrangement of land uses be rethought in this regard. We are happy to provide you with the thoughts of our landowners in the arrangement of the low and medium density land use distribution.

Parks
We understand from discussion with Steve Wever that the Town is looking into better defining the parkland hierarchy of parkettes, neighbourhood parks etc. We would like to understand how that work will be incorporated into the OPA and when.

Where possible parks should be paired with elementary school sites to provide for synergies and reduce the size of school sites where possible.

In the south, the proposed parks are not proposed to be centrally located to serve the residents of this new neighbourhood and are not co-located with the school. A large park is shown is across the road from the existing 10.4 acre Rock Street park which does not provide for an equitable distribution of parks through the community.

Natural Heritage System

The Natural Heritage System continues to include features without proper justification of significance.

Restoration Areas
The Landowners Group continues to strongly object to the approach applied to the identification and mapping of the Recommended Restoration Areas as set out in our earlier correspondence based on the same criteria previously presented.

The landowners note that the most recent SWS NHS mapping identifies a newly identified restoration to replace an area of woodland that falls outside of the NPCA Regulated Area and was removed under the Agricultural Exemption in the Regional Woodland Conservation By-law.

This area already contains a Storm Water easement servicing a significant portion of the development to the east of the proposed restoration area. The easement, registered in favour of the Township, occupies a large portion of the abandoned Rail Road lands and goes south to North Creek, approximately 400 metres. Requiring restoration of this area would hinder the functionality of the stormwater outlet and conflict with the easement. Moreover, the owner and tenant farmer applied under the above mentioned authorities having jurisdiction, the clearing of the lands to improve said drainage. To disrupt that by restoration would hinder the drainage for the development to the east. Therefore, the additional restoration area is not appropriate nor justified. In addition, if required we can provide the language of the easement that is registered.

If the municipality continues to insist on these Recommended Restoration Areas, the Landowners Group will continue to oppose the adoption of any Official Plan Amendment containing restoration areas and insist that the municipality purchase the lands for the restoration areas at market rate.

Buffers

The concept plan continues to show conceptual 30-metre buffers that have not been justified through the consultant team's Sub Watershed Study. We note that the Region's Draft Regional Official Plan policies do not specify any minimum buffer requirements in settlement areas but rather requires the buffers to be determined through detailed environmental studies at the time of development application based on the significance of each ecological feature. It is also important to note that the draft Region OP does not require a consistent 30 metre buffer even outside of Settlement Areas.

In addition, it should be noted that the NPCA has confirmed that NHS buffer is not required along the old railroad track for the lands south of Townline Road, which creates an opportunity for a multi-use trail that can improve the connectivity within the community. A linkage is also not necessary in this location.

Wetlands

We note that the concept plan now denotes "Wetlands For Further Review". This change is an improvement over their initial depiction of candidate provincially significant wetland, but it remains that some of these wetlands are very small and possess only low quality cultural wetland vegetation (e.g. Reed Canary Grass), with limited form and function. As such, it is uncertain what "further review" would be required. Nonetheless, we need to understand what this review means and when it occurs. Are corrections to the mapping completed through an EIS at the draft plan of subdivision basis or are there other policies or mechanisms to revise the erroneous mapping?

Linkages

The Landowners Group continues to object to the depiction and location of linkages for the reasons set out in our previous correspondence.

Karst
There are Karst features shown in the plan and are designated Natural Heritage System. As we have consistently indicated in numerous communications, Karst features are not natural heritage features but rather natural hazards and should be identified accordingly. Daryl Cowell indicated that there are sinkholes that probably should and will be removed at development, so it should certainly not be shown as part of the Natural Heritage System. The northern features north of the railway should also be removed (NW1 and NW2). We recommend that it be shown in a similar way as the wetlands as a Karst for further review with policies guiding that review.

Karst sinkhole features and their NPCA policy 50 metre hazard setback should be distinctly mapped as *natural hazards,* not as part of the Natural Heritage System.
In the opinion of the landowners, the protection of these additional lands – restoration areas, wetlands, linkages, karst - without justification will lead to significantly higher housing costs attributed to the remainder of the lands.

Transportation

The concept plans show the "Future Arterial Street/Complete Street" road typology traversing the west and south portions of the Study Area. These roads would more appropriately achieve a complete street design as a collector road.

The Concept plan provides for a lack of connectivity to Grimsby Road 6 south of the Creek. Please explain why there are not more connections.

In addition, we note that the Transportation Network is overlaid onto an older land use concept.

Residential Densities
We understand from discussion with Steve Wever that the residential densities discussed in the presentation are gross densities that include local roads and stormwater ponds but exclude schools and parks. Based on that understanding, the net density considering residential lots only be 23 to 30 units per net ha for residential and 30 to 50 units per net ha for medium density. In the residential designation, that is not high enough to permit townhouses despite being permitted, and in the medium density designation, it is not high enough to permit stacked townhouses or back to back townhouses let alone low rise apartments. We recommend considerably higher density ranges in order to support a mix of building typologies.

We also recommend consideration of a high density designation that would permit mid-rise buildings in the range of 6 plus storeys.

There is no density provided for mixed use. The policy directions refer to Medium Density Mixed Use Nodes. Is the medium density range to be applied in mixed-use nodes? If so, it will not be high enough to allow for mixed use. Please clarify.

Servicing and Phasing Plan

We understand through discussion with Steve Wever (GSP Group.), that the phasing plan shown on page 22 of the presentation is intended to be an incremental phasing plan. The Landowners Group has significant concerns with this phasing plan and approach.

We understand that Phase 1 may be the easiest to serve at this point but that ignores that there may be other infrastructure solutions that could be brought on quickly through a landowner front ending. As well, This phasing plan breaks the expansion area into numerous small blocks. Many of these blocks are held by non-participating landowners. If the phasing has to wait for non-participant landowners, considerable delay in the production of housing could ensue, which will further exacerbate the existing housing supply crisis.

In addition, A. J. Clarke and Associates Ltd. has identified that there may be more efficient drainage strategies for some of the blocks. We request further discussion on the possible servicing plans.

Rather than a phasing plan, we recommend an infrastructure staging plan that identifies the required internal and external infrastructure required to service each large block. A landowner can then decide if they want to front end the external infrastructure required to service the entire block. This approach would allow each block to proceed independently rather than based on a specific sequence with sub staging identified within each block based on a block plan. This approach can be implemented through front-ending agreements.

We note that the City of Brantford adopted a similar staging plan to implement the 800 ha settlement expansion in their newly approved Official Plan and urge you to consider their approach.