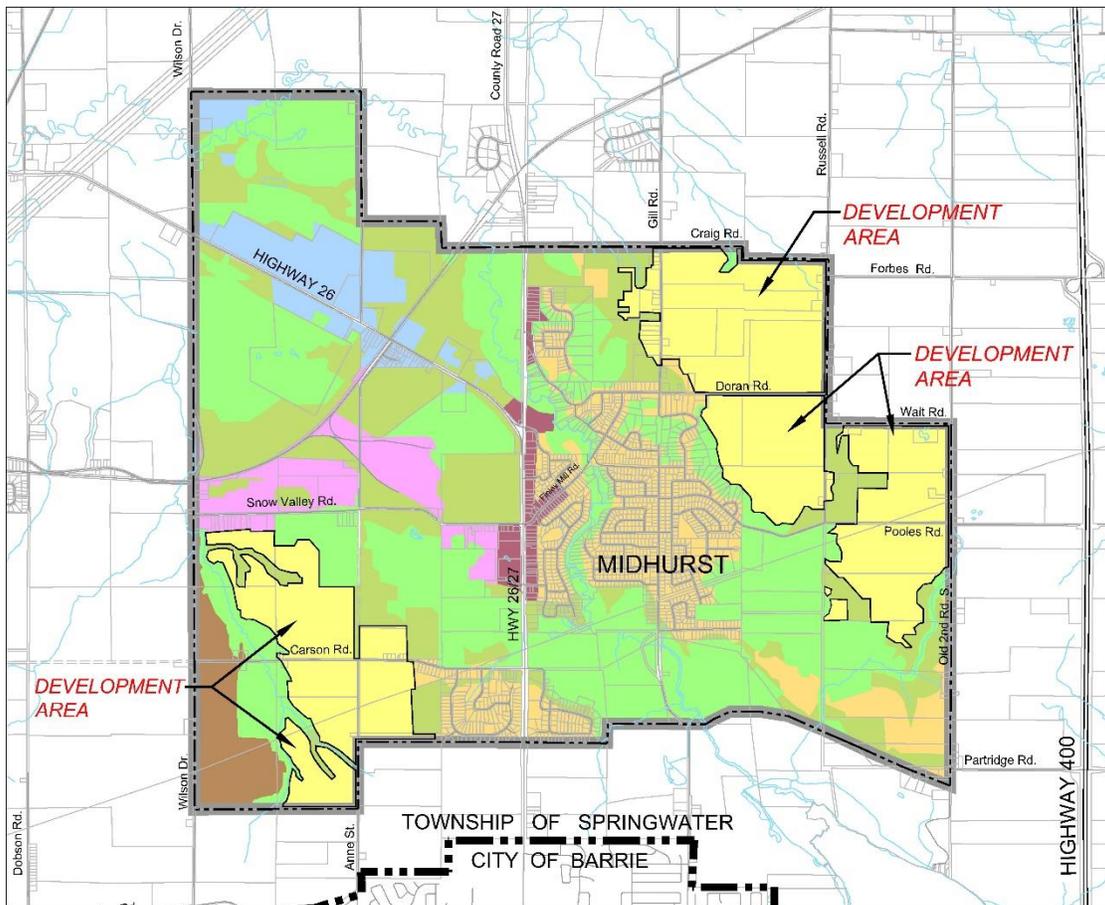




Township of Springwater Midhurst Water, Wastewater & Transportation (Phase 3 and 4) Environmental Study Report



File: 113027
March 2020

**Volume 2 of 6
Appendix A to H**

Ainley Group
Consulting Engineers and Planners
280 Pretty River Parkway
Collingwood, ON, L9Y 4J5
Telephone: 705-445-3451
www.ainleygroup.com

APPENDIX 'A'

Ministry of Attorney General Letter

**Ministry of the
Attorney General**

Legal Services Branch
Ministry of
Municipal Affairs and Housing

16th Floor, 777 Bay Street
Toronto, Ontario M5G 2E5

Tel: (416) 585-6514
Fax: (416) 585-4003
Writer's Direct Line: (416) 585-6543

**Ministère du
Procureur général**

Direction des services juridiques
Ministère des Affaires
municipales et du Logement

16^e étage, 777, rue Bay
Toronto, Ontario M5G 2E5

Tél: (416) 585-6514
Télééc: (416) 585-4003
Ligne directe du rédacteur: (416) 585-6543



November 28, 2012

Mr. Ryan Co
Case Coordinator
Ontario Municipal Board
655 Bay Street, 15th Floor
Toronto, ON M5G 1E5

Dear Mr. Co:

**Re: Appeal to the Ontario Municipal Board
Township of Springwater Official Plan Amendment No. 38
OMB No.: PL111181**

The purpose of this letter is to withdraw the appeal by the Minister of Municipal Affairs and Housing (the "Ministry") in respect of part of Township of Springwater Official Plan Amendment No. 38 ("OPA 38").

This letter sets out relevant background information, identifies those parts of OPA 38 that are subject to the partial withdrawal, and identifies those parts of OPA 38 that remain under appeal.

Background

The County of Simcoe (the "County") is the approval authority for official plan amendments adopted by the Township of Springwater (the "Township"). Over the last decade, the County and Township have engaged in land use planning exercises for the community of Midhurst. Prior to carrying out secondary planning for Midhurst the County and Township confirmed the boundary of the existing Midhurst settlement area.

The Township adopted OPA 38, being the Midhurst Secondary Plan, on November 3, 2008, and submitted it to the County for its approval on November 12, 2008. The County approved a modified version of OPA 38 on October 12, 2011. By Notice of Appeal dated October 28, 2011, the Ministry appealed OPA 38 to the Ontario Municipal Board (the "Board").

On January 19, 2012, Amendment No. 1 to the Growth Plan came into effect providing new policies for the Simcoe Sub-Area. These policies generally require lower-tier municipalities to use Schedule 7 population and employment forecasts to plan and manage growth. However, certain exceptions permit development beyond the Schedule 7 forecasts.

The Ministry is in receipt of and relies upon a letter dated November 27, 2012 in which County staff have confirmed that: (i) those parts of OPA 38 being approved conforms with the "Simcoe Sub-Area" policies of the Growth Plan; (ii) 300 hectares (of the approximately 756 ha proposed to be re-designated "Urban") meet the criteria set out in paragraphs 5.6 (1) 1 to 5 inclusive and subsections 5.6 (2) and (4) of Ontario Regulation 311/06; (iii) the lands remaining under appeal are not re-designated at this time; and, (iv) some or all of the lands remaining under appeal may be resolved in accordance with (c) below.

Partial Withdrawal of OPA 38 Appeal

With the exception of those parts of OPA 38 identified in *Attachment 1 – OPA 38 Policies and Lands Remaining Under Appeal* to this letter, the Ministry hereby withdraws its appeal of OPA 38.

Parts of OPA 38 Remaining Under Appeal

The Ministry maintains its appeal of those parts of OPA 38 identified in *Attachment 1 – OPA 38 Policies and Lands Remaining Under Appeal*.

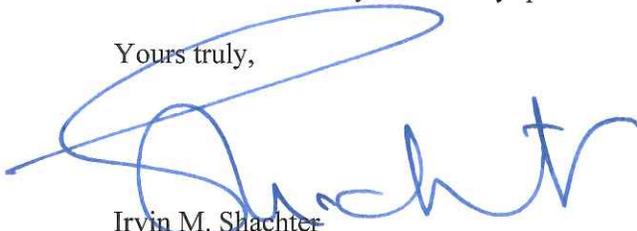
The basis for the Ministry maintaining its appeal of those parts of OPA 38 in *Attachment 1* is:

- (a) The threshold issue identified by the Ministry for the OPA 38 lands and policies that remain under appeal is the growth allocation necessary to permit the re-designation of the lands that remain under appeal.
- (b) The Ministry relies upon the County and the Township to make decisions that conform with the Growth Plan, when/if addressing possible future growth allocations to deal with the lands that remain under appeal.
- (c) There are Growth Plan policies that could potentially be applied by the County and Township through future municipal planning exercises to resolve the MAH threshold issue: (a) through Growth Plan Policy 6.3.2.2; and/or, (b) subject to possible future amendments to Growth Plan forecasts, through the application of Growth Plan Policies (including 5.4.2.2(a)).

The Ministry requests that its appeal relating to the parts of OPA 38 that remain under appeal be adjourned *sine die*.

Please contact me if you have any questions.

Yours truly,



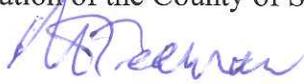
Irvin M. Shachter
Senior Counsel

Enclosure: Attachment 1 – OPA 38 Policies and Lands Remaining Under Appeal

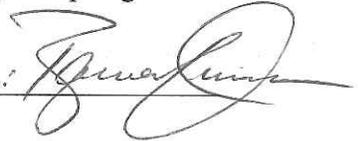
cc: Ms. Brenda Clark, Clerk, County of Simcoe

The following parties concur,

The Corporation of the County of Simcoe

Per: 

The Corporation of the Township of Springwater

its Solicitors,
Per: Wear Foulds LLP per: 

Carson Road Development Inc.

Per: 

Midhurst Development Doran Road Inc.

Per: 

Midhurst Rose Johns Inc.

Per: 

Midhurst Rose Alliance O'Brien Inc.

Per: 

Midhurst Rose Alliance Cooney Inc.

Per: 

Midhurst Rose Alliance Inc.

Per: 

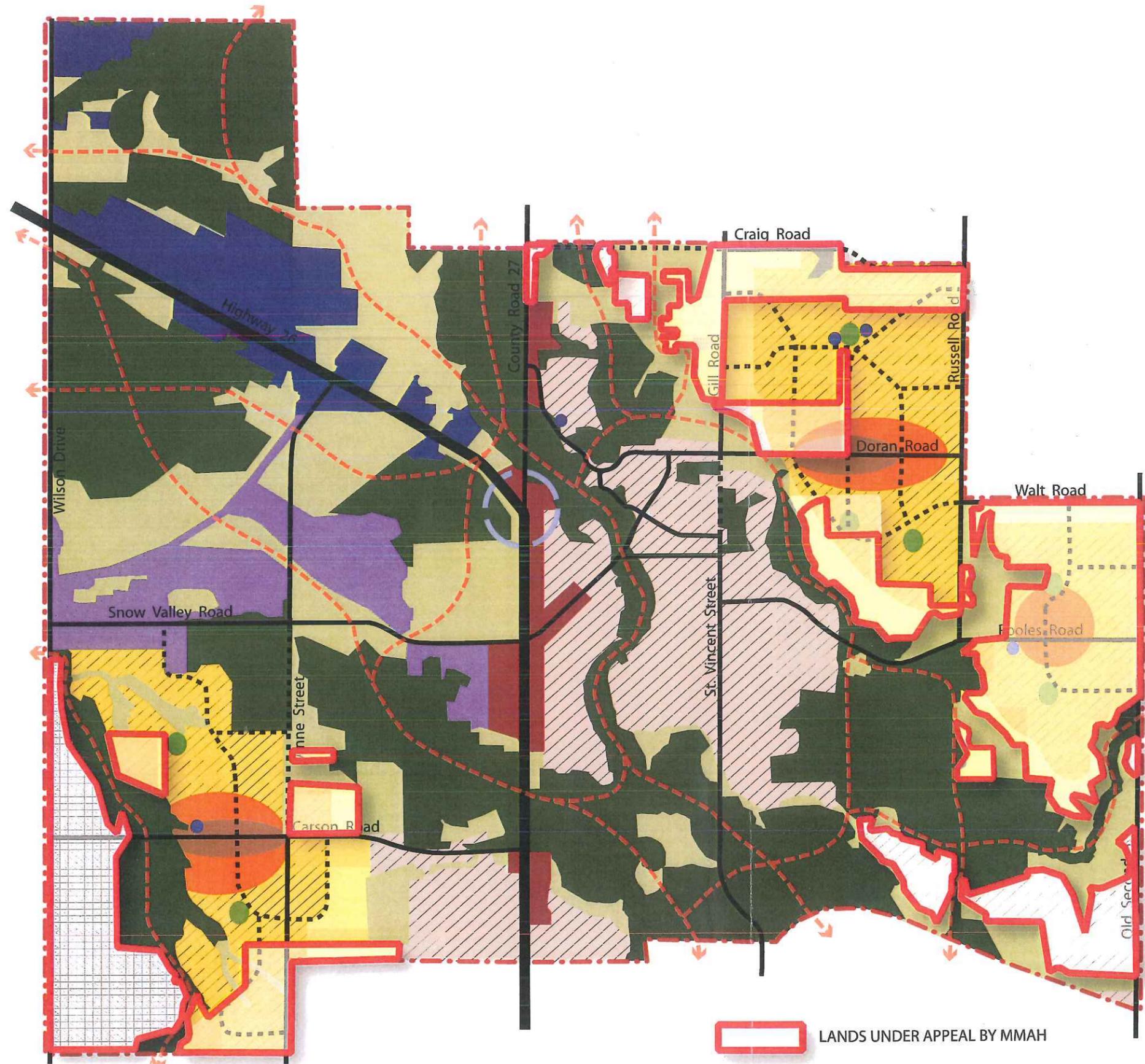
Attachment 1 – OPA 38 Policies and Lands Remaining Under Appeal

1	Section 2.0, PRINCIPLES - A Complete and Sustainable Community, New Neighbourhoods, First Bullet: The word “ three ” remains under appeal.
2	Section 2.0, PRINCIPLES - A Complete and Sustainable Community, New Neighbourhoods, Third Bullet: The word “ three ” remains under appeal.
3	Section 2.0, PRINCIPLES - A Complete and Sustainable Community, New Neighbourhoods, Fourth Bullet: The word “ three ” and “ Neighbourhood 3 – 35 persons and/or employees per hectare ” remain under appeal.
4	Section 2.0, PRINCIPLES - A Complete and Sustainable Community, New Neighbourhoods, Fifth Bullet: The word “ three ” remains under appeal.
5	Section 2.0, PRINCIPLES - A Complete and Sustainable Community, Neighbourhood Centres, First Bullet: The word “ three ” remains under appeal.
6	Section 4.1, GENERAL LAND USE POLICIES, b), xi): The words “ Future Development Potential Designation ” remain under appeal.
7	Section 5.6, MIDHURST VILLAGE DESIGNATION, a): The words “ additional areas that may accommodate a range of ground-related housing and ” remain under appeal.
8	Section 5.11, FUTURE DEVELOPMENT POTENTIAL DESIGNATION, a) and b): The entirety of these sub-sections remain under appeal.
9	Section 5.12, PARKS SYMBOL, c), i): The word “ three ” remains under appeal.
10	Section 9.2, GROWTH MANAGEMENT/DEVELOPMENT PHASING, f): This sub-section remains under appeal only as it pertains to the lands on Schedule ‘A’ – Land Use and Schedule ‘B’ - Neighbourhood Structure & Road Network/Trails shown as “Lands Under Appeal by MMAH”.
11	Section 9.5.2, Hold Zoning, b): This section remains under appeal only as it pertains to the lands on Schedule ‘A’ – Land Use and Schedule ‘B’ - Neighbourhood Structure & Road Network/Trails shown as “Lands Under Appeal by MMAH”.
12	Schedule ‘A’ – Land Use: Lands identified as “ Lands Under Appeal by MMAH ” in attached Schedule ‘A’ remain under appeal.
13	Schedule ‘B’ - Neighbourhood Structure & Road Network/Trails: Lands identified as “ Lands Under Appeal by MMAH ” in attached Schedule ‘B’ remain under appeal.

MIDHURST SETTLEMENT AREA SECONDARY PLAN

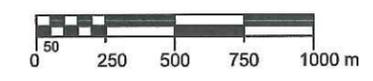
TOWNSHIP OF SPRINGWATER
October 29, 2008

Schedule A - Land Use



- Commercial / Mixed Use
- Administration / Government
- Employment
- Environmental Protection Area I
- Environmental Protection Area II
- Midhurst Village
- Midhurst Transition Residential
- Midhurst Low Density Residential
- Midhurst Medium Density Residential
- Midhurst High Density Residential / Mixed Use
- Future Development Potential
- Park
- School / Institutional
- Provincial Highway
- Primary Road
- Potential Primary Road
- Settlement Area Boundary
- Environmental Connections / Potential Trails
- Future Intersection Improvements

LANDS UNDER APPEAL BY MMAH

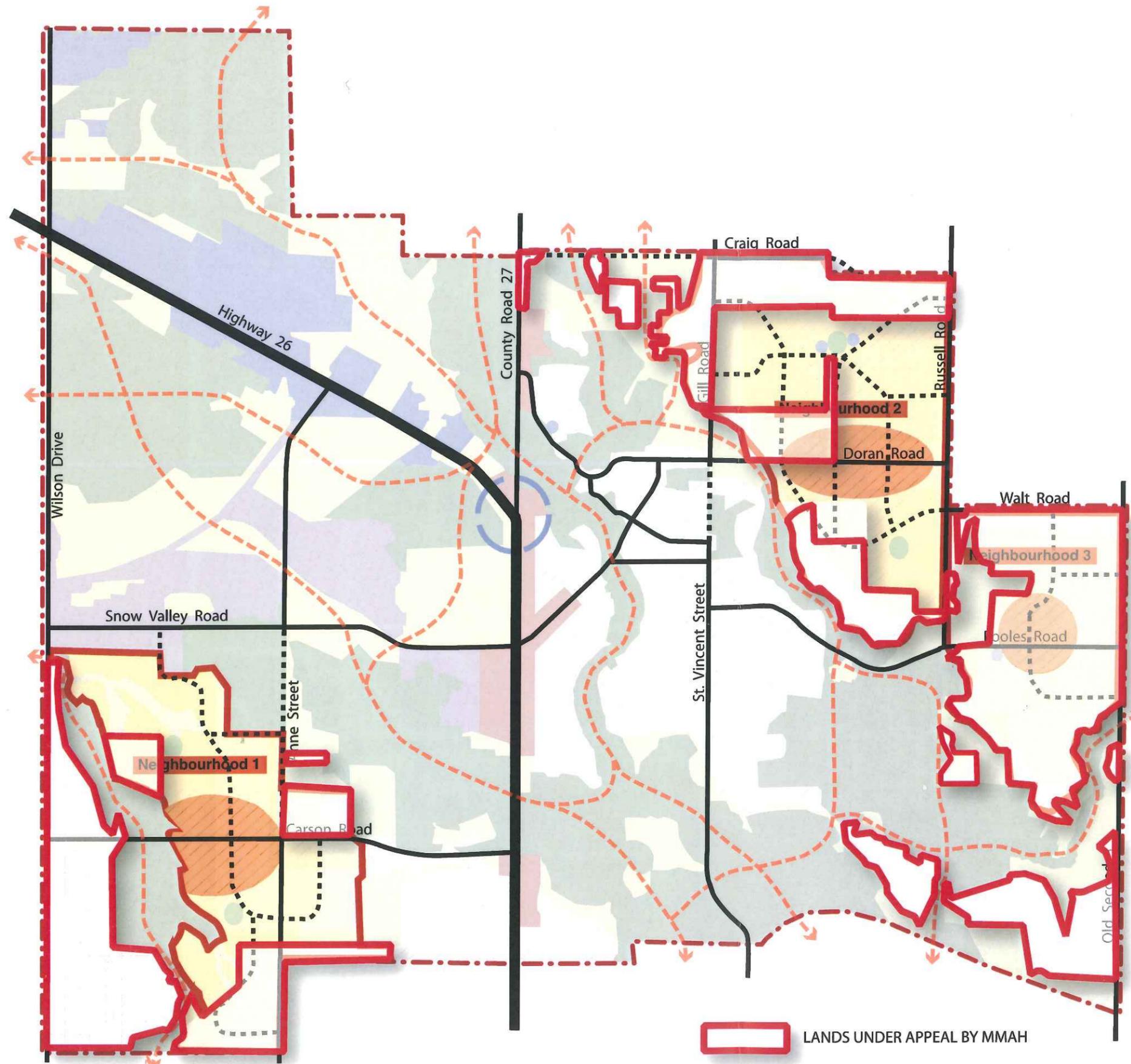


November 27, 2012

MIDHURST SETTLEMENT AREA SECONDARY PLAN

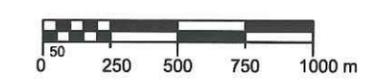
TOWNSHIP OF SPRINGWATER
October 29, 2008

Schedule 'B' - Neighbourhood Structure & Road Network/Trails



-  Neighbourhood Boundaries
-  Neighbourhood Centres
-  Provincial Highway
-  Primary Road
-  Potential Primary Road
-  Settlement Area Boundary
-  Environmental Connections / Potential Trails
-  Future Intersection Improvements

 LANDS UNDER APPEAL BY MMAH



APPENDIX 'B'

Minutes of Steering Committee Meetings and Agency Meetings

PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: Wednesday April 17, 2013

LOCATION: Township Offices, Midhurst

TIME: 9:00 AM

ATTENDEES: Linda Collins - Mayor, Township of Springwater
Brad Sokach - Township of Springwater
Brent Spagnol - Township of Springwater
Shauna Dudding - Geranium Corporation
Alex Troop - Alliance Homes Ltd.
Joe Mullan - Ainley Group
Reid Mitchell - Ainley Group

PURPOSE: Steering Committee Meeting # 1 – Initiation of Class EA Phase 3 & 4

1. Welcome and Introductions

a. **Municipality's Representatives**

The Township's representatives for this Class EA planning process will be Mayor Linda Collins, Ward 5 Councillor Jack Hanna and possibly Ward 4 Councillor Sandy McConkey. Staff members will be Bard Sokach and Brent Spagnol.

b. **Ainley Representatives**

Joe Mullan is the overall Project Manager for Ainley and he will be assisted by various technical staff members including Gary Scott, Mike Ainley, Mike Neumann and Reid Mitchell, or others as deemed necessary.

c. **Midhurst Developer Group's Representatives**

The Midhurst Developer Group will be represented by Shauna Dudding and Alex Troop.

d. **Recording of Meeting Minutes**

Ainley will record and distribute minutes of all meetings. Steering Committee members were encouraged to review and provide comment on the minutes which will form part of the Class EA documentation.

Action by Ainley

2. Confirm Status of Class EA Terms of Reference

J. Mullan noted that the Class EA Terms of Reference for the Midhurst Class EA planning process had been circulated to all parties in late Feb and that the latest version, incorporating all comments, was re-circulated on Mar 10, 2013. However, J. Mullan further noted that the Class EA Terms of Reference will need to be further updated to reflect the format and makeup of the

Residents Liaison Committee, which was discussed at the March 18, 2013 Council Meeting. It was noted that R. Brindley (Township CAO) is currently working on the Terms of Reference for the Residents Liaison Committee and that subsequent to that process being completed, the Class EA Terms of Reference can be updated.

Action by All

It was agreed that all other items within the Class EA Terms of Reference, that were circulated on Mar 10, 2013 were acceptable.

3. Make-up of Committees

a. Steering Committee

As noted in Item 1a above, the Steering Committee will be made up of members of Council, Township staff, Midhurst Developers Group and Ainley staff.

b. Resident Liaison Committee

A Residents Liaison Committee will be formed and will meet separately from the Steering Committee. In accordance with the March 18, 2013 Council meeting, the Resident Liaison Committee will be comprised of:

- Three (3) members of Council;
- Three (3) members of Midhurst Ratepayers Association;
- Three (3) Springwater residents at-large;
- The CAO and other Township staff as deemed necessary;
- Representatives of the Midhurst Landowners Group;
- A representative from Ainley (Joe Mullan).

As noted in Item 2 above, R. Brindley is developing the Terms of Reference for the Residents Liaison Committee, which will formalize the purpose and the mandate of the committee. B. Sokach also noted that in conjunction with preparing these Terms of Reference, R. Brindley is also preparing a Notice that will be published in the local newspaper asking for volunteers to sit on the Residents Liaison Committee. It was noted that this Notice will be published in conjunction with the "Notice of Study Commencement" (see Item 9).

The purpose and the mandate of the Residents Liaison Committee was briefly discussed and it was noted that as per the discussions at the Mar 18, 2013 Council meeting, the committee could be discussing Planning matters relating to the growth in Midhurst, in addition to matters relating to the Class EA process. The Developers noted concerns with this, given that their Draft Plans are at the Board and therefore it would not be possible for them (and possibly even the Township) to get involved with discussions relating to the Draft Plans that could prejudice their future position at the Board. In light of these comments, the Developers were requested to provide the Township with a letter detailing their concerns by Fri Apr. 18, if possible.

Action by Township & Developers

4. Communication Protocols

- a. It was agreed that all internal communications between the Township and Ainley will be coordinated by Brad Sokach, Brent Spagnol and Joe Mullan;
- b. The issue of communications between the Steering Committee and the Resident Liaison Committee was deferred until after the formalization of the Terms of Reference for the Resident Liaison Committee;
- c. Communications on behalf of the Steering Committee to outside Agencies, interested groups and members of the Public will be handled by Ainley, following review by the Steering Committee, when appropriate;
- d. The Contact List that was utilized for the Master Plan Phase 1 & 2 in 2008/09 will be reviewed and updated as necessary. As such it was agreed that Ainley will circulate a Draft to the Committee for review and comment. The Developers noted that they have had extensive communication with the First Nations communities on other Simcoe County projects and that they will ensure the contact list is up to date.

It was also noted that the Township have a list of interested parties that have registered with the Township to receive updates on the Midhurst Secondary Plan as they become available. Therefore it was noted that the Township will circulate all Notices relating to this Class EA, to these individuals that have previously registered.

Action by All

5. Future Meeting Schedule

a. Steering Committee Meetings

Tentative dates for the Steering Committee meetings were highlighted on the Draft Gantt Chart provided by Ainley for review by the Committee. It was noted that the dates shown on the Gantt chart are approx. dates only. It was agreed that at each meeting, or immediately thereafter, the dates for the following two Steering Committee meetings would be confirmed. It was also agreed that the meetings will be held in the afternoon (1:30pm) and that Ainley will coordinate and confirm the future meeting dates.

Action by Ainley

b. Residents Liaison Committee Meetings

It was agreed that the Residents Liaison Committee meetings should be held in the evenings and 6:30 to 9:00 was suggested. As noted earlier the Township is in the process of developing the Terms of Reference for the Residents Liaison Committee which will outline the meeting schedule; however, it is anticipated that the schedule for the meetings will closely follow the Steering Committee schedule.

Action by Township

c. Agency Meetings

Tentative dates for Agency meetings were also highlighted on the Draft Gantt Chart provided by Ainley for review by the Committee. It was noted that the NVCA will be much more involved in this Class EA process than they were in the previous Master Plan process.

6. Population Projections & Design Criteria

a. **Review & conformation of Population Projections & Design Criteria from Phase 1 & 2**

For overall Class EA purposes, the populations and design criteria from Phases 1 & 2 will be retained for Phases 3 and 4. These are outlined in the Executive Summary within the Phase 1 and 2 Document.

It was also noted that the Ministry's Nov 2012 decision to permit 300 hectares (out of 768 hectares) to proceed to development needs to be correlated with the Official Plan, which identified the first Phase as being 3,850 units. As such the Developers were asked to provide details on the number of units contemplated within the 300 hectares including percentage splits between the Carson Road development area and the Dobson Road/Craig Road Development area along with how this would have regard for the Official Plan.

Action by All

It was noted that the results of recent studies of the flows (7Q20) in Willow Creek, will be used to confirm effluent criteria for the wastewater treatment plant. The Developers will provide an undated Report.

Action by Developers

b. **Identification of approved Phase 1 Lands**

Detailed mapping will be required to clearly show the exact limits of the "approved" 300 ha. The Developer Group will provide assistance to Ainley. It is important that the Steering Committee explain to the public that the Class EA must consider infrastructure requirements for the full build out of planned development and that the initial Phase has been "approved" for 300 hectares. The treatment works (water and sewage) will be designed to service the initial Phase and be easily expanded in the future to accommodate subsequent Phases of Development. Pipelines, however, will be constructed for the ultimate use. Transportation needs for Phase 1 are to be discussed.

Action by All

c. **Discuss the Staging of works for Phase 1 and future phases**

The Developers are to provide details on their anticipated staging of Phase 1 development, including percentage splits between the Carson Road development area and the Dobson Road/Craig Road Development area.

Action by Developers

7. Background Reports and Status of Supporting Reports

It was noted that all of the Phase 1 and 2 background reports are applicable to Phases 3 and 4. However, if the location of any of the proposed infrastructure works is revised in a major way, new background reports may be necessary. These include Archeological, Heritage, Natural Environment and Geotechnical.

Action by Developers

A wellhead protection program will be required from the Developers.

Action by Developers

The 7Q20 report on the flows in Willow Creek is to be provided by the Developers. It is understood that the Report will confirm the low annual flow figure and that the proposed effluent limits will not result in degraded water quality in the Creek, as set out in Phases 1 & 2 of the Class EA.

B. Sokach noted that in a recent meeting with the NVCA, they informed him that they have implemented a Phosphorous trading program for a project in Tottenham and that they will be looking at a similar program for the Midhurst area. In conjunction with this it was noted the Township have explicitly told the existing residents of Midhurst that they will not be required to connect to the new Municipal wastewater system and therefore the phosphorous benefits of converting existing septic systems over to full municipal services cannot be assumed within a trading program. However, it was acknowledged that a phosphorous trading program could provide significant net-benefits, but that the whole program will need to be investigated in much more detail as part of this Class EA.

Action by All

It was noted that well water locations will generally be as noted in Phases 1 and 2. Test wells have been developed and test reports are available. The Developers noted that they are considering proceeding with the drilling and development of Municipal supply wells, however, after a brief discussion it was suggested that this not be completed until after the completion of the Class EA process.

It was noted that Ainley will be looking for an evaluation of treatment options (wastewater and water) as part of the report submissions.

Action by Developers

The staging of transportation upgrades was discussed in general terms and it was noted that the development of Craig Road in Phase 1 would be costly in comparison to the number of lots that will be created. It was also noted that the cost of Craig Road may already be included in the County DC credits but this needs to be confirmed. It was also noted that the final alignment of the new Craig Road needs to be finalized based on topographic assessment.

Action by Developers

Further discussion will be necessary to confirm the initial transportation works. It may also be prudent to consider initial construction route requirements in addition to than development roadway requirements. A construction route plan is a condition of Draft Plan Approval and will be addressed by the Developers. It was noted that Wilson Road is now a County Road. It was agreed that staging of road works will be challenging and that a special meeting may be required. The Developers are to submit a comprehensive staging plan for discussion.

Action by Developers

8. Project Schedule

a. Review and Discuss Draft Project Schedule

Ainley provided a Draft Gantt chart for review and comment. It was suggested that the Committee could commit to the dates for the next two meetings as outlined in the Schedule – Wednesday June 19 and Wednesday September 11. However, these dates need to be confirmed. The Steering Committee meetings will commence at 1:30 pm.

Action by Ainley

It was suggested that the date for the first Open House should be Tuesday May 14 (revised from Schedule); however, this is to be confirmed.

Action by All

It was suggested that meeting dates be confirmed through www.doodle.com website. J. Mullan will look into this.

Action by Ainley

Post Meeting Note: The aforementioned Class EA Open House has been postponed until May 29 as the Township is proposing to host Public Open House related to the Midhurst Secondary Plan on May 14.

9.

10. **Draft Notice of Study Commencement**

a. **Review of Draft Notice of Study Commencement**

Ainley provided a Draft Notice of Study Commencement for review purposes. Ainley will confirm the Township Logo and will expand the wording to stress the intent of the Class EA planning process – to determine infrastructure servicing. The Notice will also advise the Public of the first “Open House” to be held in May 2013.

Action by Ainley

b. **Distribution, including publication of Notice of Study Commencement**

The Notice will be placed in the Springwater News – April 25 & May 2 editions. Ainley will submit the final Notice to the newspaper on April 22. Therefore, it is imperative that comments on the Draft Notice be received by Ainley by April 19. A list of other publications and or websites will be provided by the Township.

Action by Township and Developers

Ainley will circulate the Notice to the standard Contact List being developed.

Action by Ainley

c. **Discuss date for Class EA Open House**

The date of the first Class EA Open House was tentatively set May 14, 2013, however, this is to be confirmed by Ainley/Township by April 22.

Action by Township & Ainley

Post Meeting Note: The aforementioned Class EA Open has been postponed till late May or early June as the Township is proposing to host Public Open House related to the Midhurst Developments on May 14 or other date in mid-May.

11. Other Business

The Mayor stressed that in order to minimize public concern, all members of the Steering Committee must use clear wording for all public Notices and during Open Houses.

B. Spagnol advised the meeting that the Township is working on producing standardized construction mitigation plans for new development projects. After a brief discussion it was agreed that these construction mitigation plans would be kept separate from this Class EA process and would follow the Township's standard when they are finalized. Ainley noted that they could assist with the development of these plans, independent of the Class EA process.

In relation to the above it was acknowledged that Ainley, within the Class EA, will consider a high level of construction mitigation plans the works proposed under the Class EA.

Action by Township & Ainley

12. Adjournment

The meeting adjourned at 11:20 am.

Any errors and/or omissions from these Minutes should be reported to the undersigned as soon as possible.

Minutes prepared by R. Mitchell and finalized by:



J. A. Mullan, P. Eng.
Ainley & Associates Limited

S:\113027\Minutes & Agendas\Minutes\Steering Committee\113027 - Midhurst EA - Steering Comm Mtg No 1 Minutes (Apr 17 2013).doc

PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Monday, June 10, 2013**

LOCATION: Township Offices, Midhurst

TIME: 2:00pm

ATTENDEES: Mayor Linda Collins - Township of Springwater
Councillor Jack Hanna - Township of Springwater
Councillor Sandy McConkey - Councillor, Township of Springwater
Brad Sokach - Township of Springwater
Shauna Dudding - Geranium Corporation
Mario Giampietri - Geranium Corporation
Alex Troop - Alliance Homes
Joe Mullan - Ainley Group
Gary Scott - Ainley Group
Reid Mitchell - Ainley Group

ABSENT: Brent Spagnol - Township of Springwater

PURPOSE: Steering Committee Meeting # 2 – Discuss Initial Open House

1. Confirm Status of Terms of Reference

- a. Terms of Reference for Residents Liaison Committee – Status Update

The Township advised that nominations for Committee members have been received and that interviews would be completed this week. It is anticipated that the first Residents Liaison Committee meeting would be held before the end of June.

- b. Make-up of Residents Liaison Committee – Names?

The names of the Residents Liaison Committee will be released by the Township next week.

Action by Township

2. Communication Protocols

- a. Contact List.

As a result of the initial Notice, numerous requests have been received to be added to the Class EA Contact List. Ainley will update the List as necessary throughout the planning process.

Action by Ainley

3. Notice of Study Commencement Issued April 25, 2013

In response to the Notice of Study Commencement, the following correspondence was received:

- a. MOE letter dated May 13, 2013 – Numerous requirements.

This letter outlines standard items that will need to be addressed as part of the Class EA. It was noted that some of the items are new or modified from previous MOE standard form letters on other Class EAs that have been completed by Ainley in the past few years. Specifically:

- Noise and odour assessment requirements at treatments plants have been outlined in more detail
- Environmental monitoring requirements seem to have been increased

Ainley will arrange a meeting with the MOE to discuss all of the requirements. It was noted that there is a chicken farm near the development area that produces strong odours. These odours must not be attributed to the future wastewater treatment plant. The Developer Group advised that Black & Veatch would be providing the necessary background reports and technical memos relating to the noise and odour assessments including mitigation at the both treatment plants (water and wastewater).

Action by Ainley and Developer Group

- b. MTO email dated May 22, 2013

This email from Peter Dorton identifies a number of items that need to be investigated, documented and submitted to the MTO for review and approval.

In addition to responding to this email Ainley will arrange a meeting with the MTO to discuss all of the requirements.

Action by Ainley

- c. Alderville First Nation letter dated May 9, 2013

The letter from Dave Simpson asks for further information relating to environmental site assessments, site selection studies and Daft plan of subdivisions, as well as all applicable reports (Stage 1 – 3) of archaeological assessments. M. Simpson also asked about the economic benefits to Alderville Nation members, such as employment opportunities etc.

It was agreed that Ainley prepare a response for the Committees review and discussion.

Action by Ainley

In addition, other responses were received, mainly asking to be added to the Contact List or revising the contact person. Ainley will maintain the Contact List accordingly.

Action by Ainley

- S. Dudding requested copies of the aforementioned letters/emails.

Action by Ainley

4. Open House No 1 (May 29, 2013)

- a. Brief Summary of Open House and Comments received to date.

The May 29, 2013 Open House was held to provide a “refresher” for all interested parties as to the conclusions reached in Phases 1 and 2 of the Class EA Process. Although 57 persons signed in, it was observed that perhaps more than 70 members of

the public attended the Open House. It was noted that the Comment Period was not over yet and to date a total of 14 Comment Sheets have been received. The Township noted that they will forward of Comment Sheets that are received.

Action by Township

Ainley will prepare a Comment Summary Table complete with suggested responses were necessary, for Committee review. A Steering Committee meeting may be necessary to discuss the comments and the responses.

It was suggested that a typical Comment/Response Summary Table, when completed, could be added to the Township web site.

Action by Ainley and Township

It was agreed that any comments dealing with the Secondary Plan, should be discussed by the Residents Liaison Committee (Township CAO to organize).

Action by Township

The issue of treating pharmaceuticals in sewage wastewater was discussed (verabll comment received at May 14 Public Meeting) and it was noted that this is a world-wide challenge and that US EPA has a varying opinions on the matter and how to deal with it appropriately. Ainley will research this as part of a response. It was agreed that the seriousness of the comments should be prioritized and a mutually agreeable response should be prepared for each significant comment. All comments should be answered simultaneously.

Action by All

J. Hanna advised that he heard the following comments at the Open House:

- Construction of Craig Road (from County Rd. 27 to Russell Rd) should be undertaken in conjunction with Phase 1;
- Trails should be provided linking all parts of Midhurst;
- Paved shoulders should be provided to allow for bicycles; and
- Park lands should be part of the Development Plans.

Trails (as part of active transportation) will be considered at a high level in the Class EA and will be finalized at Draft Plan stage.

It was agreed that the timing of Craig Road should be reassessed. However it was also noted that the Township does not own the western portion of the proposed road alignment. Therefore, a revised alignment may need to be determined. It was also noted that the topography of the area will be a challenge to road design and land may need to be expropriated. The route will be determined as part of the Class EA.

Action by Ainley and Developer Group

The Township will consider looking at ways to permit Craig Road to be constructed in conjunction with Phase 1 of the Development. One of the possible ways would be the inclusion of the project in the Township's Development Charges. It was agreed that any relocation of the Craig Road alignment will not impact the approved Secondary Plan (300 ha. Approved). M. Giampietri noted that the Secondary Plan was being reviewed by the OMB for one reason only – implementation, not infrastructure. Ultimately the timing for Craig Road will be a Council decision and it was noted that there will be challenges related to topography, expropriation and funding.

Action by Township

J. Hanna suggested that consideration be given to rerouting trunk watermains and sewage forcemains away from established roadways in Midhurst (Finlay Mill Rd. in particular). It was noted that the option of putting the services along the proposed Craig Road (in lieu of coming through the Community) was not one of the servicing options in Phase 1 & 2 and after a brief discussion it was agreed that Ainley would complete a high analysis of this option and determine if it should be formally considered as a viable option.

Action by Ainley

M. Giampietri stated that it is important to provide a balanced community – residential with employment and tax base opportunities. He noted employment development on Hwy 26 and Snow Valley Road will require services. Employment interests will require full municipal servicing and an affordable work force to be viable.

The importance of development phasing and staging was stressed and in that regard, the Developer Group agreed to provide information to Ainley and the Township on phasing including unit numbers and distribution. At the previous Steering Committee, Phase 1 would to be 5,000 equivalent residential units in total including employment allocation.

5. Population Projections & Design Criteria

- a. Require detailed population projections, including staging, for the 300 hectares including percentage splits between the East and West development areas;

As noted previously, the Developer Group will provide.

Action by Developer Group

- b. Require detailed mapping showing the exact limits of the 300 Hectares;

S. Dudding agreed to provide a more detailed map of the exact limits of the approved 300 ha.

Action by Developer Group

The remaining lands within the Secondary Plan will be developed based on demand triggers/thresholds and will be staged based on logical break points.

B. Sokach asked about the status of an increase in development population (to 32,750 persons) as noted on page 28 of the Phase 1 and 2 EA Document. S. Dudding advised that any modifications to the numbers will be dealt with through Draft Plan.

S. McConkey noted that a limited population increase had been outlined for Springwater, excluding Midhurst. She expressed concern that growth throughout the Township may impact traffic in Midhurst. A 1.4% increase in traffic from outside areas in the township was considered in the Traffic Study. It was noted that the Midhurst population projection is independent from the rest of the Township. Ainley/Township will provide a written response to S. McConkey on this issue.

Action by Township & Ainley

The Developer Group was asked to provide “absorption schedules”.

Action by Developer Group

6. Background Reports and Status of Supporting Reports

- a. Status;

Older Reports will be reviewed by the Developer Group to determine need for additional studies. A list of new Reports will be provided and will they will be prepared collectively by the Developer Group.

Action by Developer Group

b. Wellhead Protection Plan;

This is perhaps one of the most important issues related to the Class EA. The Source Water Protection Plan has been generally approved for Simcoe County (waiting on SLSCA input). Therefore, all new municipal wells in the Midhurst area will be subject to this Plan. The Developer Groups hydrogeologists will address this issue. It was noted that the new wells will be deep (aquifer A3 which is confined) and therefore, there will not be any interaction with the surface.

Action by Ainley & Developer Group

c. Operating cost analysis;

An operating cost analysis for all infrastructure will be prepared and provided by the Developer Group.

Action by Developer Group

d. Noise Impact Assessment – Related to Traffic;

Traffic numbers may be revised from Phases 1 and 2 and therefore, noise impacts may be different. The MOE criteria is to be reviewed. It was noted that there are existing complaints about traffic noise from residents that back onto Hwy 26 in the Carson Road area. However, this is an existing problem and Hwy 26 is controlled by the MTO.

It was also noted that if Craig Road was implemented early in the process it may reduce traffic and associated noise impacts in existing core streets in Midhurst.

Action by Developer Group

e. Air Quality & Noise Impact Assessments (As per MOE Letter)

As noted previously, there are new requirements with respect to odour and noise as outlined in the MOE letter. These issues will be addressed in background reports to be prepared by the Developer Group.

Action by Developer Group

f. 7Q20 Report – Status;

The meeting was informed that the 7Q20 Report will be available soon. The Report will be presented to the MOE, the NVCA for review and comment.

Action by Ainley & Developer Group

g. Phosphorous credits – Net-benefit assessment;

The NVCA has verbally requested that phosphorous credits be considered in order to lower overall total phosphorous (TP) loading to Willow Creek from several sources. Following the approval of the 7Q20 assessment for Willow Creek, Ainley will propose effluent criteria which will need to be reviewed by the MOE. In conjunction with this the viability of phosphorous credits will be reviewed and discussed with the NVCA. The Developers Group have noted that Greenland Engineering has been retained to assist with this issue. It was also noted that the temperature of the effluent and its impact on the Minising wetlands would also be addressed in the Class EA process. These issues will be documented by the Developer Group in Technical Memoranda.

Action by Developer Group

- h. Evaluation of water supply treatment options;

Based on the chemistry of the water from the selected well sites, the Developer Group will propose water treatment options for Ainley review, which will include either iron sequestration or filtration. However it was noted that the filtration will most likely be the preferred alternative given the ultimate size of the Water Treatment Plant.

Action by Developer Group

- i. Evaluation of wastewater treatment options;

Once the effluent criteria and the viability of TP credits have been established, the Developer Group will propose wastewater treatment options for review.

Action by Developer Group

- j. Phasing of proposed Development;

As noted previously, the Developer Group will provide information on Phase 1.

Action by Developer Group

7. Project Schedule

- a. Review Draft Project Schedule

Ainley provided an updated Project Schedule for review. One additional Steering Committee meeting is to be added to the Schedule to discuss comments and responses from the May 29, Open House.

Action by All

8. Future Meeting Schedule

- a. Steering Committee Meetings – set date for next meeting;

The date for the next Steering Committee meeting will be arranged by Ainley for the week of June 17 – 21.

Action by Ainley

- b. Residents Liaison Committee Meetings – set date for initial meeting

The Township will arrange the first Residents Liaison Committee meeting once the Committee has been selected.

Action by Township

- c. Agency Meetings – (MOE & NVCA) tentative dates

Ainley will arrange meetings with the MOE, NVCA and the MTO in the near future.

Action by Ainley

9. Other Business

B. Sokach stated that he was in the process of reviewing the Phase 1 and 2 Document to determine any other issues that need to be addressed as part of Phases 3 and 4.

Action by Township

10. Adjournment

The meeting adjourned at 4:05 pm.

Minutes prepared by R. Mitchell and finalized by:



J. A. Mullan
Ainley & Associates Limited

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PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Thursday, June 20, 2013**

LOCATION: Township Offices, Midhurst

TIME: 2:00pm

ATTENDEES: Mayor Linda Collins - Township of Springwater
Councillor Jack Hanna - Township of Springwater
Councillor Sandy McConkey - Councillor, Township of Springwater
Brad Sokach - Township of Springwater
Shauna Dudding - Geranium Corporation
Vimal Patel - Geranium Corporation
Alex Troop - Alliance Homes
Joe Mullan - Ainley Group
Reid Mitchell - Ainley Group

ABSENT: Brent Spagnol - Township of Springwater

PURPOSE: Steering Committee Meeting # 3 – Review and Discuss Open House
Comments and Draft Responses

1. May 29, 2013 Open House

a. Brief Summary of Open House and Comments received to date.

The May 29, 2013 Open House was held to provide a “refresher” for all parties as to the conclusions reached in Phases 1 and 2 of the Class EA Process. Although 57 persons signed in, it was observed that perhaps more than 70 members of the public attended the Open House. As of June 20, 2013, a total of 16 Comment Sheets, 9 emails and 4 letters have been received.

b. Review of Comments and Proposed Draft Responses

Ainley prepared and distributed a Draft Summary Table containing all of the Comments Response received and Draft Responses for Steering Committee review. It was noted that the Summary Table should be kept confidential as it includes the names and phones number of the individuals that submitted comments and these will be blacked out in the final Report, in accordance with the Freedom of Information Act.

It was also noted that Ainley would prepare and issue formal letters to the individuals or companies that submitted Comment Sheets or Letters and that email responses would be sent to the individuals or companies that submitted comments via email.

Each of the Draft response comments were discussed and at the request of the Committee a number of revisions were made. On the majority of the comments it was agreed that Ainley would proceed to prepare and issue the revised responses. However, for a few of the Comments, it was agreed that Ainley would re-circulate updated Responses for further review and comment by the Committee.

Action by Ainley

2. Adjournment

The meeting adjourned at 4:05 pm.

Minutes prepared by R. Mitchell and finalized by:



J. A. Mullan
Ainley & Associates Limited

S:\113027\Minutes & Agendas\Minutes\Steering Committee\113027 - Midhurst EA - Steering Comm Mtg No 3 Minutes (Jun 20 2013).doc

PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Tuesday, May 20, 2014**

LOCATION: Township Offices

TIME: 10:00am

ATTENDEES: Mayor Linda Collins - Township of Springwater
Councillor Jack Hanna - Township of Springwater
Councillor Sandy McConkey - Township of Springwater
Brad Sokach - Township of Springwater
Shauna Dudding - Geranium Corporation
Vimal Patel - Geranium Corporation
Joe Mullan - Ainley Group
Gary Scott - Ainley Group
Mike Neumann - Ainley Group
Reid Mitchell - Ainley Group

ABSENT: Alex Troop - Alliance Homes
Brent Spagnol - Township of Springwater

PURPOSE: Steering Committee Meeting # 4 – Status of Background Reports

1. Status Update since last Steering Committee Meeting (Jun 20, 2013)

- a. It was noted that a number of “Draft” Reports were received from our Sub-Consultants in Dec 2013;
- b. Further to the review of the review of the aforementioned reports a technical meeting was held with the Sub-Consultants on March 5, 2014 to review and discuss the reports;
- c. A meeting was held with the MTO on April 24, 2014;

The meeting with MTO was arranged to discuss the previous comments received from MTO regarding the Class EA and in particular the need/justification for the proposed Hwy 400/Pooles Road Interchange. A number of key individuals from MTO attended the meeting and after a brief overview of the status of the Midhurst Secondary Plan and the Transportation Reports associated Phase 1 & 2 Class EA completed in 2009, we had a discussion about what the MTO will require to be completed to justify the proposed Hwy 400/Pooles Road Interchange.

Subsequent to the aforementioned meeting, Ainley received an email from the MTO identifying that macro-modelling of the Hwy 400, from south of Barrie to north of Midhurst, would have to be completed and that the modelling would have to justify the need for the proposed interchange. After the identification of these requirements it was noted that Ainley have spoken to URS, who completed the background transportation

work for Ainley in Phase 1 & 2 about the macro modelling as URS are currently preparing a updated macro model for a large section of Highway 400 north and south of Barrie on behalf of the MTO. Therefore, Ainley have received a quote from URS to undertake the modelling and as such recommended to the Committee that this additional work be completed as part of this Class EA. The modelling would take approximately 8 weeks and cost approx. \$30,000 to complete. It was also noted that due to the other ongoing components of the Class EA and particularly the Well Drilling, that if this additional work is authorized within the next couple of weeks that it would not impact the schedule for the completion of the Class EA. As such, it was agreed that Ainley will forward the work plan and estimated fees to the Township and the Developer's Group for review and authorization. Once the macro modelling is completed, the MTO will require Ainley/URS to make a presentation on the overall justification to the MTO's Engineering Committee which are held once each month and requires scheduling in advance.

Action by Ainley

It was asked if the interchange may be needed for existing traffic, however it was noted that the previous analysis identified the need for the interchange, only as a result of proposed future development. It was also asked if the model can be used to prove that the MTO should be contributing to the cost of the interchange. Ainley noted that the MTO specifically stated at the aforementioned meeting that they will not pay any cost for the interchange if it is agreed that it is required.

The macro model will prove that the need for the interchange is a result of future growth. It was noted that environmental impacts associated with the interchange will be identified and assessed as part of the Class EA planning process. A discussion took place regarding the possibility of upgrading the existing St. Vincent Street (should the Pooles Rd interchange be rejected by the MTO). This is not the preferred solution as it would result in additional work on St. Vincent Street (including significant natural and socio-environmental impacts) as well as a challenging upgrade to the existing road.

Subsequent to the completion of the modelling and confirmation by MTO that the proposed interchange is needed, Ainley will investigate at what point the Pooles Rd. interchange is required based on development staging. Ainley will also determine if there is a need for further environmental studies associated with the interchange site and will advise the Committee in due course. It was noted that one of the reasons for the proposed interchange is to lessen the impacts of future traffic. This will be stressed to the public at the next PIC.

Action by Ainley

The MTO advised that they will support roundabouts at key intersections subject to function/impact assessment and evaluation.

Action by Ainley

- d. Updated Draft Technical Memos were received in April 2014;
- e. Meeting with NVCA on Apr 28 and May 15, 2014 regarding Stormwater Master Drainage Plan, however, we also discussed phosphorus loading to Willow Creek;

It was noted that Ainley on behalf of the Township are completing a Stormwater Master Drainage Plan for the Midhurst Secondary Plan and that Report is independent of the Class EA, however, there will be information exchange between the two processes. In particular it was noted that meetings have been held with the NVCA regarding, among

other things, a detailed investigation into the cumulative impacts of phosphorus loading on the downstream Creeks and ultimately the wetland. The requirement of this specific process is “zero net increase” in phosphorus loading to the Creeks. This analysis will look at the current amounts of phosphorus coming off the lands today (i.e. existing conditions) and then look at the post development condition of both the phosphorus loading from the Wastewater Water Treatment Plant and Stormwater Management Ponds to the Creeks subsequent to which an offsetting strategy will be proposed and implemented to obtain a “zero net increase” in phosphorus loading. The NVCA will be integral to these discussions and the Tottenham example will be assessed. A monitoring plan will be outlined and the offsetting strategy can be adjusted to address any impacts that are noted.

Action by Township/Ainley/Developers

2. Forth Coming Reports

Water

a. Hydrogeological Report on Proposed Water Supply

In the previously completed Phases 1 and 2 work, 6 well sites were identified to provide the required 200 L/s water supply. The recently adopted Clean Water Act (source water protection) has resulted in the need to find some new well sites. The Committee was informed that Golder Associates is in the process of completing hydrogeological testing of a number of sites including the gravel pit on Snow Valley Road. The results of the 72 hour pumping tests will be provided in June/July and the final report should be available soon after.

Action by Developers

Once the well sites are known, a re-evaluation of the interconnecting piping will be undertaken.

Action by Ainley

b. Technical Memo/Report RE: Design Alternatives for the Water Treatment Plant, Pumping Stations, Storage and Trunk Distribution System

c. Technical Memo/Report RE: Potential Use of Sprinkler Systems in Residential Units

An assessment of the feasibility/necessity of installing sprinklers in individual homes is being completed by the Developer Group for Township review.

Action by Developers

Wastewater

d. Willow Creek Receiving Water Assessment;

The Willow Creek Assimilation Report (including analysis of low flows in the Creek) will be presented to the MOE in the near future. The purpose of the meeting is to discuss both wastewater and stormwater impacts on the Creek and to obtain MOE agreement on effluent criteria and phosphorus offsetting plans such that there is no net increase in TP – post development. It is likely that the MOE will require post implementation monitoring of the offsetting program to ensure compliance. The Developer group has experience in that regard.

Action by Township/Ainley/Developers

As noted earlier the NVCA are also being consulted regarding the cumulative impacts of

all discharges to the Willow Creek watershed in the Midhurst area and to discuss a TP offsetting strategy. The strategy will consider things such as creek bank stabilization and additional vegetation along the Creek, etc. However it was noted that some Total Suspended Solids concentration is required in the Creek to provide habitat. It was reiterated that the goal of the studies will be looking for a “zero net increase” in phosphorus loading to the Creek.

Action by Township/Ainley/Developers

- e. Technical Memo/Report RE: Wastewater Treatment Design Alternatives to Meet Different Effluent Criteria

Once the effluent criteria has been determined, the Class EA will consider treatment options for the wastewater. Consideration will be given to both capital and operating costs.

- f. Technical Memo/Report RE: Design Alternatives for the Wastewater Treatment Plant, Pumping Stations and Trunk Collection System

It was noted that pumping stations will be equipped with stand-by power units. It was also noted that a review of the forcemains (and trunk water mains) will be undertaken to determine if it is feasible and more environmentally preferable to route the pipes away from Finlay Mill Drive (such as along Craig Road extension).

Action by Township/Ainley

Transportation

- g. Technical Memo/Report RE: Possibility of using Roundabouts;
Developers to provide for Township review.

Action by Developers

- h. Technical Memo RE: Alternatives and evaluation criteria for the Extension of Craig Road;
Ainley is to provide alignment alternatives for Township review.

Action by Ainley

- i. Technical Memo RE: Alternatives for Wilson Drive;

The County is to be consulted and is to be advised that one culvert along the proposed 4-lane section needs to be addressed since the guiderail is leaning and is in poor condition. Ainley will consider active transportation options along Wilson Dr. (County normally provides fully paved shoulders). It was noted that active transportation options are to be included throughout the Midhurst community to provide connectivity. Developers have a plan.

Action by Township/Ainley /Developers

- j. Technical Memo & Model RE: Highway 400/Pooles Road Interchange Needs and Justification;

A Technical Memo will be prepared once the MTO is satisfied with the macro modelling.

Action by Ainley

3. Future Schedule (Main Points Only)

Phase 3

- Finalize Background Reports
- Further Technical Meetings regarding Updated Technical Memo/Reports;
- Once we receive the updated technical water, wastewater and transportation reports we will:
 - Arrange meetings with the various Agencies including the Ministry of Environment (MOE), Ministry of Transportation (MTO), Nottawasaga Valley Conservation Authority (NVCA), City of Barrie & County of Simcoe to discuss the reports; (It was noted that communication with the City of Barrie is related to Class EA materials and not the specific Draft Plans).
 - Arrange the formal Phase 3 Public Information Centre (PIC) whereby the Public and interested parties will be invited to review the technical material and provide comments; (It was noted that several meetings will be held with the Steering Committee, the Resident Liaison Committee and with Council prior to the PIC in order to finalize the PIC presentation material).
- Comments from Agencies and/or the Public will be reviewed in detail and any necessary adjustments to the reports will be made;
- Preparation of the Draft Phase 3 Class EA Report and submit to Steering Committee for internal review;

Phase 4

- Prepare Draft Environmental Study Report (ESR) and submit to Steering Committee for internal review;
- Review and update Draft Environmental Study Report based upon Steering Committee comments and submit to MOE for review. In conjunction with this a meeting would be arranged with MOE to review and discuss any comments on Draft ESR;
- After addressing any comments from the MOE, publish the "Notice of Completion & Open House No. 2." This Notice of Completion initiates the formal 30 Day Public Review Period; (It was noted that an Open House is to be held during the 30-day review period).
- Arrange Open House No. 2; whereby the Public and interested parties will be invited to review the Environmental Study Report and provide written comments;
- Review, assess and respond to any written comments received during the 30 day Review Period;
- Finalize the Environmental Study Report and submit to the Township, along with issuing a Memo to MOE.

4. Future Meeting Schedule

- a. Steering Committee Meetings – set date for next meeting (June 18 2014 commencing at 2:00 pm);

5. **Other Business**

None

6. **Adjournment** – 11:35 am.

Minutes prepared by R. Mitchell and finalized by:

J. A. Mullan
Ainley & Associates Limited

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PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Friday, Aug. 01, 2014**

LOCATION: Township Offices

TIME: 9:30am

ATTENDEES:

Mayor Linda Collins	-	Township of Springwater
Councillor Jack Hanna	-	Township of Springwater
Councillor Sandy McConkey	-	Township of Springwater
Brad Sokach	-	Township of Springwater
Shauna Dudding	-	Geranium Corporation
Vimal Patel	-	Geranium Corporation
Alex Troop	-	Alliance Homes
Joe Mullan	-	Ainley Group
Reid Mitchell	-	Ainley Group

PURPOSE: Steering Committee Meeting # 5

1. Review of Minutes of May 20, 2014 Steering Committee Meeting

It was noted that during the May 20, 2014 meeting there was a discussion around the need for the extension of Ann Street, but that is not referenced in the Minutes. Therefore, it was agreed that the Minutes would be revised and re-issued noting that the need for the extension of Ann Street would be accessed during the Phase 3 & 4 of the EA.

Action by Ainley

2. Updates since last Steering Committee Meeting (May 20, 2014)

Transportation

a. Technical Report & Modelling RE: Highway 400/Pooles Road Interchange Needs and Justification;

MTO (URS) is currently assessing traffic conditions on Hwy 400 from Hwy 88 north to the split at Hwy 11. URS (working for Ainley) has received approval from the MTO to use the model to assess future traffic conditions north of the split, up to Horseshoe Valley Road which will include the proposed future interchange at Pooles Road. The analysis by URS should be available in early Sept.

However, it was noted that in addition to the study being done on Hwy 400 by URS, that another study is being undertaken by IBI for MTO related to the Simcoe Area Multi-modal Transportation Strategy and these two models have different assumptions. As such the MTO have hinted that we should wait until the two MTO models have been reviewed and ratified by MTO.

In response to this Ainley noted that the differences are minor and as such any changes that may be required in the future would be minor and could be completed within a few weeks. It was also noted that it could take months for the MTO to agree upon the specifics of the two different models.

Therefore, it was agreed to instruct URS to proceed with the analysis using the model that they currently have.

Action by Ainley

It was noted that the MTO during these recent discussions have reiterated that the Province will not pay for any portion of the future Pooles Road interchange. Ainley and the Township did not agree with the MTO at this time and it is anticipated the funding negotiations can take place in the future between all parties.

Action by Ainley and Township

b. Technical Report RE: Viability of Roundabouts;

A Report has been recently received by Ainley and will be reviewed in the near future.

Action by Ainley

c. Alternatives for the Extension of Craig Road;

Alignment options for the extension of Craig Road have been identified and will be reviewed with the Township.

Action by Ainley and Township

d. Alternatives for Active Transportation;

An assessment of Active Transportation opportunities is necessary to provide interconnectivity to existing trails in Midhurst and the City of Barrie and to improve safety for pedestrians and cyclists. The Township's goal is to provide a "Certified Area" as an extension of the Barrie trail system. A discussion with City staff is necessary. It was also noted that traffic calming measures need to be built into the traffic options including possible movable speed bumps, the provision of a future municipal transit system and other traffic calming measures.

Action by Ainley and Township

A discussion took place on the opportunity to provide a municipal public transit system. It was noted that the provision of such a system is usually precipitated by public request and is provided on the understanding that it must be subsidized (County and or/Municipal). Although the "Places To Grow Act" does not specifically mandate public transportation systems as part of development, it was agreed that for the purposes of this Class EA, an effort should be made allow for a future transit system that could possibly connect with the City's transit system. It was also suggested that it might be good planning to allow for buses now in the design of any roadways (such as laybys and bus stop pads). It was acknowledged that operating costs would be high at the outset when there are no riders and that financial planning will need to be undertaken to allow for a future municipal transit system if deemed necessary.

Action by Ainley and Township

Water

e. Hydrogeological Report on Proposed Water Supply;

The Hydrogeological Report (Golder) should be completed shortly. The Developers will provide a copy to Ainley as soon as possible.

Action by Developers

Based on verbal information provided by Golder, it was noted that there seems to be an equal water supply available from either side of Midhurst

Action by Ainley

Councillor McConkey asked if the newly identified (and tested) well site located west of Snow Valley would have any hydrological impact on the Minesing Wetland. She was advised that the well would be in the third aquifer and would not have any hydrogeological connection to surface waters. She also asked about treatment for manganese and was informed that filtration methods will be considered to remove iron and manganese.

Action by Ainley and Developers

f. Technical Report RE: Design Alternatives for the Water Treatment Plant, Pumping Stations, Storage and Trunk Distribution System;

A Tech Memo will be prepared which will outline options for water treatment, pumping and water storage needs. This Memo will be completed following review of the Golder Hydrogeological Report.

Action by Ainley & Developers

g. Technical Report RE: Alternatives for the routing of the Trunk Watermains between the east & west communities;

Once the preferred water supply/treatment solution is determined, an updated analysis of trunk main routes will be completed.

Action by Ainley

h. Technical Memo/Report RE: Potential Use of Sprinkler Systems in Residential Units

The Developer Group is in the process of preparing a Tech Memo on the need for residential sprinklers. The completion of this Tech Memo will not delay the Class EA planning process.

Action by Developers

Wastewater

i. Willow Creek Receiving Water Assessment;

The Hutchinson Report on the assimilative capacity of Willow Creek will be reworded slightly in the near future for presentation to the MOE. A meeting with the MOE will be arranged to discuss the Report, define effluent criteria, discuss treatment options and finalize the Zone of Influence in the Creek.

Action by Ainley and Developers

j. Technical Memo/Report RE: Cumulative Assessment of Phosphorous Loading to the Willow Creek;

It was agreed that the Class EA documentation (ESR) must stress that the current condition of Willow Creek is degraded such that it is classified by the Province as a Policy 2 water course (no further degradation is allowed with respect to phosphorus loading). In that regard, two possible options were suggested with respect to wastewater treatment for the Midhurst Secondary Plan Area. The first option is to treat wastewater effluent to a concentration of 0.03 mg/L Total Phosphorus (TP) for the full buildout of the Midhurst Secondary Plan. The current TP concentration in the Creek is about 0.035 mg/L and therefore, no further degradation would result under this option. However, a level of 0.03 mg/L is considered to be onerous requiring a very high initial capital cost and complicated, expensive annual operation.

It was noted that the proposed development provides all parties (Township, Developers, NVCA, MOE, residents and farmers) with a good opportunity to improve the water quality in the Creek by taking measures to reduce phosphorus loadings from some historical contributors (erosion, sedimentation from stormwater runoff and agricultural practices). Therefore, a second treatment option was suggested which would treat the effluent to a concentration of 0.05 mg/L TP using state of the art technology at a reduced capital cost resulting in less annual operating and maintenance costs. The cost savings would be invested in reducing other sources of phosphorus generated from stormwater runoff, erosion/sedimentation and from agricultural practices. The goal would be to not only maintain the status quo but to improve the water quality in Willow Creek at full buildout of the Midhurst Secondary Plan. It is considered that a cumulative analysis of phosphorus sources is the best method to ensure no net increase (and possible decrease) of total phosphorus in the Creek with a resulting benefit to the Minesing Wetlands.

S. McConkey asked who would control the “offsetting” program? The NVCA would control, administer and police the phosphorus program.

A. Troop noted that the second option is a positive, precedent setting approach.

S. Dudding stated that the reduction in cost may also lead to more affordable housing. She also noted that Little Lake is also a contributor of TP into the Willow Creek system and perhaps the NVCA could improve the water quality in the Lake as part of the TP offsetting program.

Mayor Collins noted that agricultural interests will need to be included in the discussions since there may a loss of productive agricultural lands in order to put the mitigating measures into place. The Township will rely on the NVCA experts to mitigate historical TP contributing sources.

It was agreed that further discussion relating to these two options should be presented and discussed with the MOE and the NVCA before including them in the Class EA planning process.

Action by Ainley and Township

k. Technical Memo/Report RE: Wastewater Treatment Alternatives to Meet Effluent Criteria;

This Tech Memo will be reviewed and may need to be revised in the future to address the effluent criteria that are approved by the MOE.

Action by Ainley

l. Technical Memo/Report RE: Design Alternatives for the Wastewater Treatment Plant, Pumping Stations and Trunk Collection System;

A Tech Memo will be provided in the future to address these issues.

Action by Ainley

m. Technical Report RE: Alternatives for the routing of the Forcemain(s) between the east & west communities;

A Tech Memo will be provided in the future to address this issue.

Action by Developer

3. Future Schedule (Main Points Only)

Phase 3

- Further Technical Meetings regarding Updated Technical Memo/Reports;

Ainley and the Developer Group will continue to hold meetings to discuss and review Technical Memos. The final memos will be used to prepare information boards for the next Public Information Centre.

Action by Ainley and Developer

- Upon completion of the Technical Reports regarding water, wastewater and transportation we will:

- Arrange meetings with the various Agencies including the Ministry of Environment (MOE), Ministry of Transportation (MTO), Nottawasaga Valley Conservation Authority (NVCA), City of Barrie & County of Simcoe to discuss the reports;

- The following general dates were mentioned:

MOE and NVCA – September 2014

MTO – ask for September dated but more likely October

City of Barrie – September

County of Simcoe - September

- Arrange the formal Phase 3 Public Information Centre (PIC) whereby the Public and interested parties will be invited to review the technical material and provide comments;

- It was suggested that in order to ensure that all members of the public who attend the PIC are presented with the same information, the Township may wish to retain professional assistance (Communication Expert or third party moderator) to oversee a question and answer session as part of the PIC. It was suggested that the format of the PIC needs to be modified (from the previous PIC). This will be discussed between Township Staff and Ainley will be advised. It was also noted that there is no benefit in rushing the date of the PIC. All information must be presented to new Councillors first and therefore, the PIC may be delayed until the New Year.

Action by Township

- Comments from Agencies and/or the Public will be reviewed in detail and any necessary adjustments to the Technical reports will be made;
- Preparation of the Draft Phase 3 Class EA Report and submit to Steering Committee for internal review;
- It was noted that the Hine's Emerald dragonfly, which is an endangered species, has been documented in and around Minesing wetland and that the MNR may be bringing out new legislation related to this.

Phase 4

- Prepare "Draft" Environmental Study Report (ESR) and submit to Steering Committee for internal review;
- Review and update the "Draft" Environmental Study Report (ESR) based upon Steering Committee comments and submit to MOE internal for review. In conjunction with this a meeting would be arranged with MOE to review and discuss any comments on "Draft" Environmental Study Report (ESR);
- After addressing any comments from the MOE, publish the "Notice of Completion & Open House No. 2." This Notice of Completion initiates the formal 30 Day Public Review Period;
- Arrange Open House No. 2; whereby the Public and interested parties will be invited to review the Environmental Study Report (ESR) and provide written comments;
- Review, assess and respond to any written comments received during the formal 30 day Review Period;
- Finalize the Environmental Study Report and submit to the Township, along with issuing a Memo to MOE.

4. Future Meeting Schedule

- a. Steering Committee Meetings – set date for next meeting;

It was agreed that the date for the next Steering Committee meeting would be set following all review agency meetings (MOE, NVCA, City and County) in order to be more informed on the various issues outlined in these minutes.

Action by Ainley

5. Other Business

No other business was discussed.

6. Adjournment

11:10 am

Minutes prepared by R. Mitchell and finalized by:

J. A. Mullan
Ainley & Associates Limited

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PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Thursday, Mar. 05, 2015**

LOCATION: Township Offices

TIME: 4:00pm

ATTENDEES:

Mayor Bill French	-	Township of Springwater
Deputy Mayor Don Allen	-	Township of Springwater
Councillor Sandy McConkey	-	Township of Springwater
Robert Brindley	-	Township of Springwater
Mario Giampietri	-	Geranium Corporation
Shauna Dudding	-	Geranium Corporation
Vimal Patel	-	Geranium Corporation
Philipp Wilden	-	Geranium Corporation
Alex Troop	-	Alliance Homes
Joe Mullan	-	Ainley Group
Brad Kalus	-	Ainley Group

UNABLE TO ATTEND

Councillor Jack Hanna - Township of Springwater

PURPOSE: Steering Committee Meeting # 6

1. General Review and Update

Ainley reported the following key points as a general update since the last Steering Committee Meeting held on August 1, 2014:

A presentation to Council on the background and status of the Class EA study, including a public question and answer session, was made on January 7, 2015. The presentation was well received by both the new Council and members of the public in attendance. The public was encouraged to contact the Township and/or Ainley should they have any further questions or concerns as the Study moves forward.

Following the January 7, 2015 Council presentation, Ainley received a few emails from interested members of the community requesting clarification and/or information on site specific questions. Those inquiries have been responded to.

It was noted the Township received two letters (dated December 15, 2014 and January 13, 2015) from Ecojustice, Counsel for the Midhurst Ratepayers Association (MRA). A response to these letters was sent to Ecojustice by the Township's Solicitor on January 27, 2015.

The Township has also received a follow up letter from Ecojustice dated February 20, 2015. A response to this letter will be issued by the Township's Solicitor within the next few days.

The Township noted that dialogue with the MRA continues to take place. It was further noted the outcome of the last meeting with the MRA was positive and it was felt that the letters from Ecojustice were somewhat counterproductive to the process.

It was noted that during the May 20, 2014 Steering Committee meeting there was a discussion around the need for the extension of Ann Street, but that is not referenced in the Minutes. Therefore, it was agreed that the Minutes, for this meeting would acknowledge the need for the extension of Ann Street to be further analyzed during the Phase 3 & 4 of the EA.

Action by Ainley

2. Technical Update - Transportation

Ainley provided the following update on the technical transportation studies:

2.1 Hwy 400/Pooles Road Partial Interchange

A Technical Needs and Justification report, including detailed traffic modeling data was prepared and submitted to MTO in support of the proposed partial interchange.

The partial interchange is recommended in order to provide access to/from Hwy 400 for Midhurst traffic destined for Barrie and/or Toronto. The interchange will alleviate congestion, capacity and level of service deficiencies on existing Twp. arterial and collector roads, including those that extend into the City of Barrie (i.e. Bayfield Street and St. Vincent Street).

MTO has reviewed the technical report and provided a response outlining a number of concerns relating to the need for the partial interchange. Ainley is currently completing additional traffic analysis and preparing a detailed response to the MTO comments and will be following up with MTO shortly.

The outcome of the follow up discussion with MTO will be presented at a future Steering Committee Meeting.

Action by Ainley

2.2 Craig Road Extension

A number of design concepts, including alternative horizontal alignments and vertical profiles have been developed for the extension of Craig Road from Russell Road to County Road 27.

Each design option has unique and common challenges, the most significant of which is the steep topography at the west end prior to connecting to County Road 27. In this area, the terrain drops between 30 to 40 metres.

Each design option will require acquisition of property to accommodate sections of the preferred new road alignment which are located outside of the existing unopened road allowance.

Further details on the alternatives including the evaluation process and selection of a

preliminary preferred design concept will be presented at a future Steering Committee Meeting.

Action by Ainley

2.3 Roundabouts

The Technical Report on the viability of roundabouts, as an alternative to conventional traffic signals, at each major intersection that was identified during Phase 1 & 2 as requiring operational improvements to accommodate future traffic conditions, is on-going.

From the preliminary findings a few of the 11 site locations are good candidates for a roundabout, however, further analysis is required. Locations deemed unsuitable are due to geometric design impacts on the surrounding land uses, including private property and environmentally sensitive features.

The results of the Technical Report, including roundabout location and configuration recommendations will be presented at a future Steering Committee Meeting.

Action by Ainley

2.4 St. Vincent Street Extension

The extension of St. Vincent Street, which is approximately 300 metres, between Park Trail and Belmont Cresc., through the existing unopened municipal road allowance, is required to improve north – south traffic flow.

Design concepts being considered include 2 lane rural cross section and 2 lane urban cross section, complete with sidewalks.

Due to the hilly topography, the road profile will be relatively steep, but within acceptable design standards. Grading of the road platform and fill embankments will generally fit within the existing road allowance (which varies from 34 m to 60 m). Any minor grading encroachment beyond the existing right-of-way will be mitigated using retaining walls and/or toe walls.

It was noted that St Vincent Street Extension is a Schedule “B” Class EA project and therefore does need to be included in with the Phase 3 & 4 (Schedule “C”) projects, however given it provides a key link within the community, Phase 3 & 4 will review and determine the appropriate timing for the proposed construction of St Vincent Street.

Action by Ainley

2.5 Active Transportation (Trails and Bike Lanes)

Expansion of existing trail systems within Midhurst, is anticipated to be completed over time in accordance with the County of Simcoe Trails Management Plan (TMP) and the Midhurst Secondary Plan.

Provisions for trail connections from the three development communities to the existing / future external trail network are included in the draft plan of subdivisions through the dedicated ‘green field’ blocks.

Construction of the new development communities will include trail connections to the

existing and / or future external trail system.

Development of the trail network outside of the development community boundaries will be considered during the planning and design of future municipal road rehabilitation /reconstruction projects. The external trails may be designed as on-road and/or off-road facilities depending on available property and other environmental constraints.

Further study is required to examine opportunities and constraints associated with construction of trails and bike lanes within existing municipal road allowances.

Options for bike traffic and cyclist, including a 1.8 m wide bike lane adjacent to the curb line, sharing of the vehicle driving lane and/or an off road multi-use trail, will be developed further. Design standards for bike lanes will conform to the Ontario Traffic Manual Book 18.

Further details, including preliminary recommendations, will be presented at a future Steering Committee Meeting.

Action by Ainley

The Township noted the importance of the local snowmobile trails to the Midhurst residents. Ainley will contact snowmobile clubs and associations to confirm the location of the local snowmobile trails and review potential impacts and/or opportunities to marry the future active transportation trail system with the existing snowmobile trail network.

Action by Ainley

The Township noted their Trails Master Plan (TMP) is currently being updated. Following the meeting the Township will confirm when the updated TMP will be completed and will advise Ainley accordingly so this new background information can be considered during the completion of the EA study.

Action by Township

2.6 Transit

The existing City of Barrie transit (bus) routes were reviewed in conjunction with an assessment of opportunities to provide bus service to Midhurst residents.

Opportunities exist to provide a bus service connection to City of Barrie primary routes, those being Bayfield Street and St. Vincent Street. Such a bus service initiative could be a Township operated system and/or a joint venture Agreement between the Township and the City of Barrie for the extension of the existing Barrie transit service. Notwithstanding, a detailed transit study would need to be completed in the future to confirm ridership, economic feasibility, routes and service criteria. Moving forward with such a study would be at the discretion of the Township Council.

3. Technical Update - Water

To accommodate full build out of the Midhurst Secondary Plan, a municipal water supply, which is collectively capable of providing approximately 200 litres per second (L/s), is required. Ainley reported the drilling program has been completed but that the preparation of the hydrogeological study is on-going. To date the Draft information is identifying four potential well sites, with a total of approximately 206 L/s as noted below:

- i) The Alliance property north of Doran Rd (with two 45L/s. wells);
- ii) The Coutts property south of Pooles Rd and east of Russell Rd (with two 20L/s wells);
- iii) The McColgen pit on Snow Valley Rd, east of Wilson Dr (with one 36L/s well);
- iv) The Snow Valley area, west of the ski resort (with two 20L/s wells);

Once the drilling and hydrogeological study is complete, Ainley will advance the evaluation of alternatives for the location of water treatment facilities, water storage reservoirs, pumping stations and trunk watermains and provide recommended design solutions, including staging plans and cost estimates.

Action by Ainley

4. Technical Update - Wastewater

Ainley noted that the 7Q20 flow (the 7 day average low flow with an expected 20 year return period) of 460 L/s has been established for Willow Creek (at the proposed discharge point) based on 9 years of flow data and in consultation with MOE and NVCA. This flow rate is important as it is used to determine the effects of the effluent from the Wastewater Treatment Plant on Willow Creek.

Ainley also noted that NVCA have stipulated that there can be no cumulative net increase in Phosphorus loading within the downstream receiver (i.e. Willow Creek). Therefore, 'best available' treatment technology and filtration systems at the Wastewater Treatment Plant, in conjunction with the implementation of low impact development measures (LID) within the new developments, and possibly Offsetting within the watershed will be required in order to achieve the "no net increase" objective. Currently the wastewater effluent criteria for Phosphorus being proposed is 0.03 mg/L Design objective and 0.05mg/L Compliance limit.

Ainley reported the preparation of the technical study reports, including the Willow Creek Assimilative Capacity Study and Cumulative Assessment of Phosphorus Loading to Willow Creek, are on-going. Once these studies are completed, the evaluation of design alternatives for waste water treatment facilities, pumping stations, trunk collection systems and trunk forcemains will be carried out and recommended design solutions, along with staging plans and cost estimates, will be presented to the Steering Committee.

Action by Ainley

5. Next Steps

Ainley provided the following summary of the next steps in the EA study:

Phase 3

- Continue preparing and finalizing the background Technical Reports and the evaluations of all Water, Waste Water and Transportation Design Alternatives;
- Arrange meetings with the various Agencies, including MOECC, MTO, NVCA, City of Barrie and County of Simcoe to discuss the reports;
- Host the Phase 3 Public Information Centre to present the findings of the Technical Reports, design concepts, evaluation criteria, selection of the preliminary preferred design concepts for Water, Waste Water and Transportation, receive comments and respond to questions;
- Complete the evaluation of all Alternatives, taking into consideration all comments received from the Agencies and / or public; complete any necessary amendments to the Technical Reports and finalizing the selection of the preferred design concepts for

Water, Waste Water and Transportation in consultation with the Township and Steering Committee.

Phase 4

- Prepare draft Environmental Study Report (ESR) to document planning and consultation process;
- Submit draft ESR to MOECC for review;
- Meet with MOECC to review comments on draft ESR;
- Finalize ESR in consultation with Township and Steering Committee;
- Post ESR on public record for mandatory 30 day public review period;
- Arrange Public Open House during review period to provide opportunity for public to review ESR and ask questions;
- Respond to comments received during review period; and
- Subject to no Part II Order requests, finalize ESR and submit to Township and MOECC along with Environmental Clearance letter

6. Other Business

Township noted a Fire Response Study is being completed which may bring forward a recommendation to extend Anne Street to Snow Valley Road as an alternative to an emergency service connection through the future subdivision. The outcome and implications of this new background report, once completed, will be considered during the completion of the EA study.

Geranium noted they have completed background traffic studies and modeling that may be beneficial to the study. Geranium to provide this additional background information to Ainley following the meeting.

Township requested Ainley to provide an updated Gantt Chart at the next meeting to summarize the timelines for the completion of the EA.

7. Next Meeting

The next Steering Committee Meeting (#7) is scheduled for Thursday, May 7, 2015 starting at 4:00 p.m. at the Township office.

Any errors and/or omissions from these minutes should be reported to the undersigned as soon as possible.

8. Adjournment

5:50pm

Minutes prepared by B Kalus and finalized by:



J. A. Mullan
Ainley & Associates Limited

PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Thursday; May 7, 2015**

LOCATION: Township Office

TIME: 4:00pm

ATTENDEES:

Mayor Bill French	-	Township of Springwater
Deputy Mayor Don Allen	-	Township of Springwater
Councillor Jack Hanna	-	Township of Springwater
Councillor Sandy McConkey	-	Township of Springwater
Robert Brindley	-	Township of Springwater
Mark Archer	-	Township of Springwater
Shauna Dudding	-	Geranium Corporation
Vimal Patel	-	Geranium Corporation
Alex Troop	-	Alliance Homes
Mike Neumann	-	Ainley Group
Joe Mullan	-	Ainley Group

PURPOSE: Steering Committee Meeting # 7

1. Approval of Minutes of March 5, 2015 Steering Committee Meeting

No comments were provided on the minutes and therefore they are approved as printed.

Action by Ainley

2. General Updates since last Steering Committee Meeting (Mar 5, 2015)

It was noted that there has been no general updates since the last meeting.

3. Technical Updates since last Steering Committee Meeting (Mar 5, 2015)

3.1 Transportation

Pooles Road Partial Interchange

- a. It was noted that we continue to prepare an Updated Draft Technical Report & Modelling RE: Highway 400/Pooles Road Interchange Needs and Justification for submission to the Ministry of Transportation (MTO).

It was also noted that although the updated report is not complete yet, the preliminary analysis indicate that the proposed interchange is not needed for the Phase 1 (300 ha) developments, but that it is required for the development of the full Midhurst Secondary Plan.

Action by Ainley

Craig Road Extension

- b. It was noted that we have identified four (4) possible alternatives for the alignment of Craig Road Extension and that the analysis of these alternatives is still ongoing. It was also noted that all alternatives will require the purchase of property from the end of the existing unopened road allowance to County Rd 27.

Mayor French noted that Craig Road Extension should not be part of the Township wide Development Charges, but instead should be in an area specific Development Charge for the Midhurst Secondary Plan. After some further discussion about the need for Craig Road Extension and if it would provide a benefit to existing development or not, it was acknowledged that the issue of whether Craig Road Extension should be in a Township Wide DC or an Area Specific DC is not an issue that needs to be resolved within the Class EA.

It was also noted that two large vacant properties fronting on to County Rd 27 are currently for sale and that two of the four alternatives being considered run through these properties.

Action by Ainley/Township

Roundabouts

- c. It was noted that the preparation of the Technical Report regarding the viability of Roundabouts is ongoing and that the report is analyzing a total of 11 intersections. These intersections which were identified in the Phase 1 & 2 Class EA Report are external to the proposed development areas and require intersections improvements.

Action by Ainley

St Vincent Street Extension

- d. It was asked why St Vincent Street Extension was part of this Phase 3 & 4 EA, as this project was identified as a Schedule "B" Class EA in the 2009 Master Plan. In response it was acknowledged that this project was a Schedule B project; however it was noted that the timing of this connection could be important to the overall community. Therefore; staging analysis will be completed in Phase 3 & 4 to identify when St. Vincent Street connection should be constructed.

In response to a question regarding the limits for construction of St. Vincent Street it was noted that within the Phase 1 & 2 it was identified that St. Vincent Street would be reconstructed between Belmont Crescent and City of Barrie limits. It was further noted that the portion between Belmont and the community boundary would have an urban standard and the portion between the community boundary and the City of Barrie limits would have a rural section.

In response to a question regarding to the timing for the urbanization of the existing St. Vincent Street and the extension of St. Vincent Street, it was noted that these two components could either be completed together as one construction contract or separately as two independent construction contracts, noting that there would be advantages and dis-advantages to each.

It was further noted that both the urban and rural sections of St. Vincent Street would have a sidewalk or walking trail.

Action by Ainley/Township

Active Transportation (Trails & Bikes lanes)

- e. It was noted that the analysis of the existing and proposed active transportation options is ongoing.

Also, as noted earlier, the Active transportation alternatives being considered will include a sidewalk or trail along St. Vincent Street, to the City of Barrie limits.

Action by Ainley

Transit

- f. It was noted that the Phase 3 & 4 Class EA will ensure that the main arterial and/or collector road systems can accommodate future transit. However, a detailed transit study, which is outside the scope of the Class EA, would need to be completed in the future before the implementation of a transit system to confirm ridership, economic feasibility, routes etc.

It was asked if the types of transit being considered within the analysis was full-size transit buses and it was noted that yes they are. It was also asked if there is any maximum distance between transit pickup points and core residential areas. In response it was noted that we do not believe there are any guidelines on the maximum distance, as it would normally be a function of ridership and available finances; however Ainley will check the accessibility standards act.

Action by Ainley

After the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre;

3.2 Water

- a. It was noted that development of the overall Midhurst Secondary Plan will require approximately 200 L/s of new Municipal water and that the preliminary hydrological investigation has identified four well sites with up to 6 wells which will provide approximately 206L/s capacity. However; we are still awaiting the submission of the Hydrogeological Report confirming these details.
- b. It was noted that subsequent to the submission of the Hydrological Report, we will be re-evaluating alternatives for the location(s) for the Water Treatment Facility, Storage Reservoirs, Pumping Stations and Trunk Watermains.

In particular, it was also noted that in Phase 1 & 2 we had identified the preferred alternative as being one Water Treatment Plant located in the Doran Road area, however this was based upon all the proposed municipal wells being on the east side of Midhurst. Now that we will be having municipal wells on each side of Midhurst we will be re-evaluating that decision to determine if it is better to have two Water Treatment Plants (one in the East and one in the West), which could reduce the Life Cycle costs by avoiding the double pumping of water.

After the completion of these evaluations, Recommended Design Solutions and Staging Plans will prepared for presentation at the Phase 3 Public Information Centre for:

- Water Treatment Facility (including the treatment process).
- Storage Reservoirs & Water Pumping Stations;
- Trunk Watermains (including specific routes).

3.3 Wastewater

- a. It was noted that we are still awaiting will the submission of the Report confirming the 7Q20 flow (the 7 day average low flow with an expected 20 year return period) for Willow Creek, in the vicinity of Highway 26;
- b. Preparation of the Technical Reports regarding the Design Alternatives for the following items are ongoing
 - i. Wastewater Treatment Plant (including proposed treatment processes and effluent discharge criteria).
 - ii. Willow Creek - Assimilative Capacity Study;
 - iii. Pumping Stations, Trunk Collection System and Trunk Force mains;
 - iv. Cumulative Assessment of Phosphorous Loading to the Willow Creek. This is being prepared in conjunction with the Nottawasaga Valley Conservation Authority (NVCA) and includes an assessment of the Pre & Post Phosphorous loading of the stormwater runoff from the proposed developments.

The question was asked about why the Cumulative Assessment of Phosphorous Loading Report was part of the Class EA process. In response it was noted that although this is a requirement of the Midhurst Secondary Plan, the report will be very beneficial to the Class EA process in proving that the development of the Midhurst Secondary Plan will not have a detrimental effect on Willow Creek. In particular it was noted that this analysis will look at the proposed lands in a Pre-Development condition versus Post-Development condition along with the proposed loads from the Wastewater Treatment Plant. There was a question regarding the science behind this analysis and it was noted that the model being used was developed and approved by the Province specifically for the Lake Simcoe Protection Plan. In addition, the NVCA have taken the model used in the Lake Simcoe Protection Plan and further refined it for use within the NVCA watershed.

There was also a question about the possible need for phosphorous offsetting and how this could be achieved. In response it was noted that there are various methods for achieving offsetting within the rural and urban environments. It was also noted that the NVCA is currently working with local community groups in Beeton, to undertake a cleanup of the local creek, which will have a significant benefit to the local environment.

After the completion of these Reports all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be will be prepared for presentation at the Phase 3 Public Information Centre.

Action by Ainley

4. Future Schedule (Main Points Only)

Phase 3

- Continue preparing and finalizing the background Technical Reports and the

evaluations of all Water, Wastewater & Transportation Alternatives;

- Arrange meetings with the various Agencies including the MOECC, MTO, NVCA, City of Barrie & County of Simcoe to discuss the Class EA;
- Host the Phase 3 Public Information Centre. A formal Notice would be advertised in the local newspapers and posted on the Township website, advising of the Phase 3 Public Information Centre.
- At this Public Information Centre, the Project Team will present the findings of the Phase 3 including the evaluation criteria along with the Recommended Water, Wastewater & Transportation Alternatives.
- Continue with the evaluations of all Alternatives, taking into consideration all comments received from the Agencies and/or the Public and any necessary adjustments to the Technical reports will be made;

Phase 4

- Prepare "Draft" Environmental Study Report (ESR) and submit to the MOECC for internal review. In conjunction with this a meeting would be arranged with MOECC to review and discuss any comments on "Draft" ESR;
- After addressing any comments from the MOECC, publish the "Notice of Completion & Open House No. 2." This Notice of Completion initiates the formal 30 Day Public Review Period;
- Arrange Open House No. 2; whereby the Public and interested parties will be invited to review the ESR and provide written comments;
- Review, assess and respond to any written comments received during the formal 30 day Review Period;
- Finalize the Environmental Study Report and submit to the Township, along with issuing a Memo to MOECC.

A brief overview of the attached Gantt chart was provided and it was noted that the dates within this Gantt chart are approximately only and if any of the completion dates for initial reports get delayed then other items would also be delayed. It was also noted that the Gantt chart shows Steering Committee meetings in 2016; however these have not been formally finalized yet and as such are approximately only.

A question was asked about the purpose of the Phase 3 Public Information Centre and if comments are received would they be responded to it. In response, it was noted that the purpose of the Phase 3 Public Information Centre is to present the findings of the Class EA process and then obtain written comments from interested parties. Further all written comments would be responded to, either collectively or individually through the Class EA process.

Action by Ainley

5. Other Business

A question was asked about when the Developers might anticipate breaking ground on their developments and it was noted that pending the satisfactory completion of the Class EA in 2016, that the Developers would like to proceed as soon as possible and therefore could anticipate breaking ground in 2016/2017. During this discussion it was noted that the Developers do not have any of the 150± Drfat Plan Conditions formally cleared yet.

It was also noted that the Township may want a brief update on the Class EA be provided to Council in June 2015. As it was agreed that the Township would advise Ainley accordingly.

Action by Ainley/Township

6. Next Meeting

- a. Steering Committee Meeting set for Thurs June 4, 2015 @ 4pm;

7. Adjournment

The meeting was adjourned at approximately 5:15pm

Minutes prepared and finalized by:



J. A. Mullan
Ainley & Associates Limited

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PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Thursday July 2, 2015**

LOCATION: Township Office

TIME: 4:00pm

ATTENDEES:

Deputy Mayor Don Allen	-	Township of Springwater
Councillor Sandy McConkey	-	Township of Springwater
Robert Brindley	-	Township of Springwater
Mark Archer	-	Township of Springwater
Vimal Patel	-	Geranium Corporation
Alex Troop	-	Alliance Homes
Brad Kalus	-	Ainley Group
Joe Mullan	-	Ainley Group

UNABLE TO ATTEND: Mayor Bill French,
Councillor Jack Hanna,
Mario Giampietri,
Shauna Dudding

PURPOSE: Steering Committee Meeting # 8

1. Approval of Minutes of May 7, 2015 Steering Committee Meeting

No comments were provided on the minutes and therefore they are approved as printed.

2. Non-Technical Updates since last Steering Committee Meeting (May 7, 2015)

It was noted that there were no non-technical updates to report to the group from the last meeting.

3. Technical Updates since last Steering Committee Meeting (May 7, 2015)

3.1 Development Phasing & Staging Projections

Mr. Mullan provide an overview of the “Draft” Development Phasing & Staging Projections which were developed based upon the Developer’s “Draft” Phasing Plan dated May 2015. It was noted that the projections will be utilized to determine the staging of the required Water, Wastewater & Transportation Infrastructure.

It was suggested by the group to revise the staging table to include 3,850 units so that it matches the Township Secondary Plan.

The committee also suggested that the map be updated to show the existing community plus

the employment lands along Hwy 26.

Ainley will update the development phasing plan and circulate copies to the committee for their further review and discussion at the next meeting.

Action by Ainley

3.2 Transportation

a. Pooles Road Partial Interchange

It was noted that reported the Updated Technical Report & Modelling RE: Highway 400/Pooles Road Interchange Needs and Justification was recently completed and was submitted to the Ministry of Transportation (MTO) for review and comment earlier today.

It was further noted that the updated report confirms the proposed interchange is not needed for the Phase 1 (300 ha) developments, but that it is required for the development of the full Midhurst Secondary Plan.

After a brief discussion it was agreed the report would be provided to the steering committee members first and then after the next meeting made available to the public. This will ensure that the Steering committee can review and discuss it at the next meeting if necessary, before it is made available to the public.

Action by Ainley & Steering Committee

b. Craig Road Extension

Mr. Mullan reported there are no new updates to report since the last Steering Committee Meeting as the analysis of the alternative alignments for Craig Road extension is ongoing.

Action by Ainley

c. Roundabouts

Mr. Mullan reported the technical analysis regarding the viability of Roundabouts is now complete. All of the 11 intersections that were identified in Phase 1 & 2 as requiring intersection improvements were analyzed to determine if a Roundabout would be viable having regard for local environmental constraints, property impacts, traffic operations and cost. The long list of intersection locations was short listed to 3 well suited locations and 2 moderately suited locations. The next step will involve a detailed evaluation and selection of a preliminary preferred intersection configuration for each location. A Technical Brief will then be prepared to summarize the approach, findings, conclusions and recommendations for improvements at each of the 11 intersections.

It was suggested by the group to solicit input from the Township Fire Department and Roads Department to obtain their thoughts on the challenges (or benefits) that roundabouts may present to their work operations.

Action by Ainley

d. St Vincent Street Extension

Mr. Mullan noted there were no new updates to report since the last Steering Committee Meeting.

e. **Active Transportation (Trails & Bikes lanes)**

Mr. Mullan noted there were no new updates to report since the last Steering Committee Meeting.

f. **Transit**

Mr. Mullan noted there were no new updates to report since the last Steering Committee Meeting.

Mr. Mullan advised that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation to the steering committee, for review and input, prior to the Phase 3 Public Information Centre.

Action by Ainley

3.3 Water

a. Mr. Mullan advised the Draft Hydrogeological Report has recently been received confirming the location and capacities for potential Municipal Wells. The Report identifies four potential well sites, with a combined capacity of approximately 240 Litres per second (L/s), as noted below:

- (i) The Alliance property north of Doran Rd (with two 45L/s wells);
- (ii) The Coutts property south of Pooles Rd and east of Russell Rd (with two 20L/s wells);
- (iii) The McColgen pit on Snow Valley Rd, east of Wilson Dr (with two 36L/s wells);
- (iv) The Snow Valley area, west of the ski resort (with two 20L/s wells);

Note: The Development of the full Midhurst Secondary Plan only requires a capacity of approximately 210 L/s.

In response to questions put forth by the committee, Mr. Mullan confirmed the following details:

- The proposed well fields will not impact existing private water wells as they will draw water from a much deeper aquifer;
- The proposed well fields are not anticipated to impact adjacent municipal wells in the Township and adjacent Municipalities;
- All requirements of the Source Water Protection Guidelines will be met.

Similar to the earlier report, it was agreed that this report would be provided to the Steering committee members first and then after the next meeting made available to the public.

Action by Ainley & Steering Committee

b. It was noted that there is no new updates to present since the last Steering Committee Meeting on the Technical Reports regarding the Design Alternatives for the following items:

- i. Water Treatment Plant(s) (including proposed treatment processes).
- ii. Storage Reservoirs & Water Pumping Stations;
- iii. Trunk Watermains (including specific routes).

It was further noted that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation to the steering committee, for review and input, prior to the Phase 3 Public Information Centre.

Action by Ainley

3.4 Wastewater

- a. It was noted that the Draft Report regarding the 7Q20 flow (the 7 day average low flow with an expected 20 year return period) for Willow Creek, in the vicinity of Highway 26 has been received and is being submitted to Ministry of Environment & Climate Change (MOECC) for review and discussion, before being finalized and published;

Mr. Mullan noted that, based on the 9 years of data available for Willow Creek at Highway 26 the report recommends that a 7Q20 flow of 405 Litres per second (L/s) be adopted as a conservative value for assimilation modelling in support of the Class EA process.

It was also clarified that, at full build out of the Midhurst Secondary plan, the peak discharge flows from the plant to Willow Creek will be 140L/s. In contrast, Willow Creek has an estimated yearly peak flow rate of over 20,000 L/s.

Similar to the earlier reports, it was agreed that this report would be provided to the Steering committee members first for review and then after the next steering committee meeting made available to the public.

Action by Ainley & Steering Committee

- b. It was noted there are no new updates to report since the last Steering Committee Meeting on the Technical Reports regarding the Design Alternatives for the following items:
- i. Wastewater Treatment Plant (including proposed treatment processes and effluent discharge criteria).
 - ii. Willow Creek - Assimilative Capacity Study;
 - iii. Pumping Stations, Trunk Collection System and Trunk Force mains;
 - iv. Cumulative Assessment of Phosphorous Loading to the Willow Creek. This is being prepared in conjunction with the NVCA and includes an assessment of the Pre & Post Phosphorous loading of the stormwater runoff from the proposed developments;

Mr. Mullan advised that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation to the steering committee, for review and input, prior to the Phase 3 Public Information Centre.

Action by Ainley

4. Future Schedule

Mr. Mullan noted there are no new updates to report since the last Steering Committee Meeting. However, in response to a general question from the committee relating to the overall project completion schedule, Mr. Mullan noted the current schedule identified PIC 3

tentatively taking place in October 2015 and completion of Phase 4 of the study, including filing of the ESR on the public record in April of 2016. However, these timelines will most likely need to be extended based on when MTO comments are received and the ultimate resolution of the Pooles Road interchange design proposal with MTO.

The current project schedule will be reviewed and updated for discussion purposes at the next steering committee meeting.

Action by Ainley

5. Other Business

No other business items were tabled for discussion.

6. Next Meeting

Mr. Mullan confirmed the next Steering Committee Meeting is set for Wed Sept. 9, 2015 @ 4pm;

7. Adjournment

The meeting was adjourned at approximately 5:45 p.m.

Minutes prepared and finalized by:



J. A. Mullan
Ainley & Associates Limited

S:\113027\Minutes & Agendas\Minutes\113027 - Midhurst EA - Steering Comm Mtg No 8 Minutes (July 2 2015).doc

PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Thursday September 9, 2015**

LOCATION: Township Office

TIME: 4:00pm

ATTENDEES:

Mayor Bill French	-	Township of Springwater
Councillor Sandy McConkey	-	Township of Springwater
Councillor Jack Hanna	-	Township of Springwater
Robert Brindley	-	Township of Springwater
Mark Archer	-	Township of Springwater
Shauna Dudding	-	Geranium Corporation
Alex Troop	-	Alliance Homes
Brad Kalus	-	Ainley Group
Joe Mullan	-	Ainley Group

UNABLE TO ATTEND: Deputy Mayor Don Allen,
Mario Giampietri,
Vimal Patel

PURPOSE: Steering Committee Meeting # 9

1. Approval of Minutes of July 2, 2015 Steering Committee Meeting

No comments were provided on the minutes and therefore they are approved as printed.

2. Non-Technical Updates since last Steering Committee Meeting (July 2, 2015)

It was noted that there were no non-technical updates to report to the group from the last meeting.

3. Technical Updates since last Steering Committee Meeting (July 2, 2015)

3.1 Development Phasing & Staging Projections

Mr. Mullan provided an overview of the “Draft” Development Phasing & Staging Projections which was updated based upon the comments received at the last Steering Committee Meeting. Mr. Mullan noted that a Development Analysis chart was added to the Draft Phasing Plan which provides a breakdown of the contemplated housing product types and unit projections for each stage of development. A minor typo was noted in the last column of the Development Analysis chart. Reference to Carson Road in Stage V should read Doran Road. The table will be revised accordingly.

Action by Ainley

Mr. Mullan noted the revised staging table includes the approved development ‘trigger point’

of 3,850 units in the Phase 1 - Stage iv, to match the trigger in the Official Plan.

Mr. Mullan reminded the group the projections will be utilized to determine the staging of the required Water, Wastewater & Transportation Infrastructure and not as a Planning tool.

In response to a question from Councillor McConkey with regard to employment projections and why it wasn't on both the Carson and Doran developments, Mr. Mullan noted that the employment projections are specifically related to the designated employment lands in the Carson Road area (Snow Valley Road). Mr. Mullan further noted that this is not meant to cover home based employment or localized commercial that would be throughout both communities, as this is dealt with under residential allocation.

3.2 Transportation

a. Pooles Road Partial Interchange

Mr. Mullan advised that, following the submission of the updated Technical Needs and Justification Report in June 2015, review comments from MTO were received, on September 4, 2015. It was noted that MTO's position has not changed and that they remain unsupportive of a proposed partial interchange at Pooles Road and Hwy 400. However, in their response, MTO noted that further clarifications and traffic analysis are required to demonstrate that the interchange is warranted. Mr. Mullan noted that the MTO cited a number of concerns with the proposed interchange, including that it may preclude a future transportation corridor and interchange options for the Barrie By-pass. On this particular point Mr. Mullan noted that a future Barrie By-pass in the vicinity of Pooles Road would involve significant impact to the local environment, including acquisition of numerous existing residential homes in Midhurst and as a result didn't believe that the particular area would be a realistic option for the MTO to consider, in the future if and when the possibility of Barrie By-Pass comes back to the table.

Action by Ainley

Mr. Mullan advised that a follow up meeting with MTO, to discuss the recent comments, has been requested. The intent is to meet with MTO within the next few weeks and attempt to resolve a mutually acceptable solution with respect to a future connection to Hwy 400. Mr. Mullan will advise the group, including Geranium's traffic consultant (BA Group) of the meeting date and time.

Action by Ainley

Mr. Mullan further advised that, should the discussions with MTO Technical Staff fail to reach a favourable solution; an option could be go to the MTO Executive Review Committee and request their approval, against the recommendation of the Technical Staff; however, this would not be a desirable situation. It was noted that that if MTO does not accept the future Pooles Road interchange, it will be necessary to re-evaluate other the Transportation alternatives, including those that were reviewed as part of the Phase 1 & 2 Master Plan.

It was agreed the Draft Pooles Road / Hwy 400 Interchange Needs and Justification report will be made available to the Resident Liaison Group, for information purposes. A disclaimer will be added stating the report is Draft and as such is subject to change as the study evolves and advances towards completion. The Draft report will be made

available to each member of the Resident Liaison Group via email and a Drop Box link. A digital (pdf) copy can also be provided by the Township upon request.

Action by Ainley

b. Craig Road Extension (including Forbes Road Connection)

Mr. Mullan reported there are no new updates to present since the last Steering Committee Meeting as the analysis of the alternative alignments for Craig Road extension is ongoing.

Action by Ainley

c. Roundabouts

Mr. Mullan reported there are no new updates to present since the last Steering Committee Meeting as the analysis of the alternatives for each of the 11 intersections that were identified in Phase 1 & 2 of the Class EA study as requiring capacity and operational improvements is ongoing.

Action by Ainley

d. St Vincent Street Extension

Mr. Mullan noted there were no new updates to present since the last Steering Committee Meeting.

Action by Ainley

e. Active Transportation (Trails & Bikes lanes)

Mr. Mullan noted there were no new updates to present since the last Steering Committee Meeting.

Action by Ainley

f. Transit

Mr. Mullan noted there were no new updates to present since the last Steering Committee Meeting.

Action by Ainley

Mr. Mullan advised that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by Ainley

3.3 Water

a. Mr. Mullan noted there were no new updates to present since the last Steering Committee Meeting regarding the Draft Hydrogeological Report which identifies four potential well sites, with a combined capacity of approximately 240 Litres per second for potential Municipal Wells.

It was agreed the Draft Hydrogeological Report will be made available to the Resident Liaison Group, for information purposes. A disclaimer will be added stating the report is draft and as such is subject to change as the study evolves and advances towards completion. The Draft report will be made available to each member of the Resident Liaison Group via email and a Drop Box link. A digital (pdf) copy can also be provided by the Township upon request.

Action by Ainley

- b. Mr. Mullan noted there were no new updates to present since the last Steering Committee Meeting on the Technical Reports regarding the Design Alternatives for the following items:
 - i. Water Treatment Plant(s) (including proposed treatment processes).
 - ii. Storage Reservoirs & Water Pumping Stations;
 - iii. Trunk Watermains (including specific routes).

It was further noted that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by Ainley

3.4 Wastewater

- a. Mr. Mullan noted there were no new updates to present since the last Steering Committee Meeting regarding the Draft 7Q20 Flow Report.

It was agreed the Draft report regarding the 7Q20 flow will be made available to the Resident Liaison Group, for information purposes. A disclaimer will be added stating the report is draft and as such is subject to change as the study evolves and advances towards completion. The Draft report will be made available to each member of the Resident Liaison Group via email and a Drop Box link. A digital (pdf) copy can also be provided by the Township upon request.

Action by Ainley

- b. Mr Mullan noted there were no new updates to present since the last Steering Committee Meeting on the Technical Reports regarding the Design Alternatives for the following items:
 - i. Wastewater Treatment Plant (including proposed treatment processes and effluent discharge criteria).
 - ii. Willow Creek - Assimilative Capacity Study;
 - iii. Pumping Stations, Trunk Collection System and Trunk Force mains;
 - iv. Cumulative Assessment of Phosphorous Loading to the Willow Creek. This is being prepared in conjunction with the NVCA and includes an assessment of the Pre & Post Phosphorous loading of the stormwater runoff from the proposed developments;

Mr. Mullan advised that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by Ainley

4. Future Schedule

Mr. Mullan noted the last official Schedule identified the mandatory Phase 3 Public Information Centre (PIC) taking place in the fall of 2015 followed by the completion of the

Phase 4 Environmental Study Report (ESR) in early 2016. However, the pending follow-up discussions with MTO regarding the Pooles Road/Hwy 400 partial interchange has a direct impact on the schedule, as the Phase 3 PIC cannot be arranged until this matter is resolved. As a result, the Schedule will need to be updated once a resolution on the Pooles Road /Hwy 400 partial interchange is reached with MTO.

Action by Ainley

5. Other Business

No other business items were tabled for discussion.

6. Next Meeting

It was agreed that an interim meeting with the Steering Committee would be arranged if deemed necessary, after the meeting with MTO to review the outcome of the discussions concerning the Pooles Road/Hwy 400 partial interchange proposal.

Mr. Mullan confirmed the next formal Steering Committee Meeting is set for Thursday November 5, 2015 @ 4pm;

7. Adjournment

The meeting was adjourned at approximately 5:10 p.m.

Minutes prepared and finalized by:



J. A. Mullan
Ainley & Associates Limited

S:\113027\Minutes & Agendas\Minutes\Steering Committee\113027 - Midhurst EA - Steering Comm Mtg No 9 Minutes (Sept 9 2015).docx

PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Thursday November 5, 2015**

LOCATION: Township Office

TIME: 4:00pm

ATTENDEES:

Mayor Bill French	-	Township of Springwater
Deputy Mayor Don Allen	-	Township of Springwater
Councillor Sandy McConkey	-	Township of Springwater
Councillor Jack Hanna	-	Township of Springwater
Robert Brindley	-	Township of Springwater
Mark Archer	-	Township of Springwater
Mario Giampietri	-	Geranium Corporation
Vimal Patel	-	Geranium Corporation
Alex Troop	-	Alliance Homes
Brad Kalus	-	Ainley Group
Joe Mullan	-	Ainley Group

PURPOSE: Steering Committee Meeting # 10

1. Approval of Minutes of Sept 9, 2015 Steering Committee Meeting

No comments were provided on the minutes and therefore they are approved as printed.

2. Non-Technical Updates since last Steering Committee Meeting (Sept 9, 2015)

It was noted that there were no non-technical updates to report to the group from the last meeting.

3. Technical Updates since last Steering Committee Meeting (Sept 9, 2015)

3.1 Transportation

a. Pooles Road/Hwy 400 Interchange

Mr. Mullan reported that a meeting was recently held with Ministry of Transportation (MTO) to discuss the Updated Technical Report & Modelling RE: Highway 400/Pooles Road Interchange and the response comments received from the MTO.

Mr. Mullan noted the MTO will be initiating a Greater Golden Horseshoe Planning Study within the next few months which will look at the regional traffic movements in the entire area including the need for a Barrie Bypass and as such the MTO could not support a new Interchange on Hwy 400, at Pooles Road, at this time. Further to this MTO asked about the possibility of making improvements to the existing and

proposed road network including the Forbes Road Interchange, such that it could accommodate the proposed traffic.

It was also noted that after a discussion with the MTO regarding the need for traffic from the proposed Development to access Hwy 400, it was suggested that, in lieu of the Pooles Road Interchange, Ainley create a new alternative with Forbes Road and Russell Road widened to 4-lanes and the Forbes Road/Hwy 400 interchange upgraded to a higher capacity configuration and then:

- Update the EMME traffic model to determine/update the Phase 1 and Ultimate volume forecasts, trip distributions and V/C ratios for key roads in the area;
- Review and update where necessary the traffic splits between the upgraded Forbes Road Interchange and other key roads in the area; and
- Prepare an Operational Analysis of the upgraded Forbes Road/Hwy 400 Interchange.

Mr. Mullan noted that subsequent to the meeting with MTO, Ainley are now in the process of analyzing this alternative and will be reporting back to the MTO and the Steering Committee with the results.

Councillor Hanna suggested that in conjunction with upgrades and improvements to get traffic from the new Developments to the Forbes Road Interchange, we consider deferring certain improvements on existing roads through the community as a means to encouraging development generated traffic to travel north and access Highway 400 via Forbes Road. Mr. Mullan noted that this is similar to putting traffic calming measures on existing roads, however, prior to considering these types of measures, we need to ensure that adequate routes are provided for the new development traffic.

Action by: Ainley

Mr. Mullan noted that, with the deletion of the Pooles Road interchange proposal and the objective of directing as much of the “south of Barrie” traffic to the Forbes Road interchange as possible, the modelling will need to demonstrate that there will be no additional improvements beyond those identified in the Phase 1 & 2 Report to the existing roads leading into Barrie.

Action by: Ainley

In response to a question from Councillor McConkey, Mr. Mullan confirmed that existing roads that were identified in Phase 1 & 2 Report for upgrading including the Carson Road will be upgraded to an urban cross section with curb and gutter and sidewalks. Furthermore, the intersections on Carson Road (i.e. Wilson Dr., Anne St and Hwy 26) will be reconstructed with improved traffic control measures.

b. Craig Road Extension (including Forbes Road connection)

Mr. Mullan advised the analysis of the alternative alignments for Craig Road extension (including the connection to Forbes Road) is ongoing; however, there are no updates to provide at this time.

- c. **Intersection Improvements (including possible Roundabouts)**
Mr. Mullan advised the analysis of the alternatives for each of the 11 intersections that were identified in the Phase 1 & 2 as requiring intersection improvements is ongoing; however, there are no updates to provide at this time.
- d. **St Vincent Street Extension**
Mr. Mullan noted there are no further updates since the last Steering Committee Meeting.
- e. **Active Transportation (Trails & Bikes lanes)**
Mr. Mullan noted there are no further updates since the last Steering Committee Meeting.
- f. **Transit**
Mr. Mullan noted there are no further updates since the last Steering Committee Meeting.

Mr. Mullan stated that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by: Ainley

3.2 Water

- a. Mr. Mullan advised that, following the recent submission of the Draft Hydrogeological Report, the preparation of the Technical Reports regarding the Design Alternatives for the following items is ongoing, however, there no updates to provide at this time:
 - i. Water Treatment Plant(s) (including proposed treatment processes).
 - ii. Storage Reservoirs & Water Pumping Stations;
 - iii. Trunk Watermains (including specific routes).

Mr. Mullan stated that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by: Ainley

3.3 Wastewater

- a. Mr. Mullan advised that, following the recent submission of the Draft 7Q20 Flow Assessment for Willow Creek, the preparation of the Technical Reports regarding the Design Alternatives for the following items are ongoing, however, there no updates to provide at this time:
 - i. Wastewater Treatment Plant (including proposed treatment processes and effluent discharge criteria).
 - ii. Willow Creek - Assimilative Capacity Study;
 - iii. Pumping Stations, Trunk Collection System and Trunk Force mains;
 - iv. Cumulative Assessment of Phosphorous Loading to the Willow Creek. This is being prepared in conjunction with the NVCA and includes an assessment of the Pre & Post Phosphorous loading of the stormwater runoff from the

proposed developments;

Mr. Mullan stated that, after the completion of the aforementioned Technical Reports all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by: Ainley

Councillor Hanna suggested that consideration be given to extending the sanitary forcemain(s) along the proposed Craig Road corridor in order to connect to the proposed WWTP (at Snow Valley Road) via the Simcoe County forest lands and/or the CN railway corridor, thus avoiding disruption of the existing residential local roads in Midhurst. Mayor French noted that this option of routing the sanitary pipes away from the existing Midhurst residential roads could result in increased infrastructure costs in the future, if the Township decides to connect the existing private septic systems to the new WWTP. Mr. Mullan noted that this was correct as the servicing of the existing community east of Hwy 26 would also utilize the forcemain to the WWTP. Notwithstanding, Mr. Mullan advised that the noted routing options will be considered, including the advantages and disadvantages of each option, as part of Phase 3 of the EA.

Action by: Ainley

4. Future Schedule

Mr. Mullan noted that, now that we have some further clarity on the MTO's position regarding the Pools Road interchange, Ainley will be preparing an Updated Schedule for discussion at the next Steering Committee Meeting.

Action by: Ainley

5. Other Business

No other business was brought forward by the group.

6. Next Meeting

Mr. Mullan noted that this was the last scheduled meeting and that subsequent to discussions with Mr. Brindley new Meeting Dates for 2016 will be circulated in the near future. Most likely the existing meeting cycle of every 8-10 weeks will continue, with the next one being in Jan 2016.

Action by: Township

7. Adjournment

The meeting was adjourned at approximately 5:00 p.m.

Minutes prepared and finalized by:



J. A. Mullan
Ainley & Associates Limited

S:\113027\Minutes & Agendas\Minutes\Steering Committee\113027 - Midhurst EA - Steering Comm Mtg No 10 Minutes (Nov 5 2015).docx

PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Thursday; Jan. 14, 2016**

LOCATION: Township Office

TIME: 4:00pm

ATTENDEES:

Mayor Bill French	-	Township of Springwater
Deputy Mayor Don Allen	-	Township of Springwater
Councillor Jack Hanna	-	Township of Springwater
Councillor Sandy McConkey	-	Township of Springwater
Robert Brindley	-	Township of Springwater
Mark Archer	-	Township of Springwater
Mario Giampietri	-	Geranium Corporation
Vimal Patel	-	Geranium Corporation
Alex Troop	-	Alliance Homes
Brad Kalus	-	Ainley Group
Joe Mullan	-	Ainley Group

PURPOSE: Steering Committee Meeting # 11

1. Approval of Minutes of Nov. 05, 2015 Steering Committee Meeting

No comments were provided on the minutes and therefore they are approved as printed.

2. Non-Technical Updates since last Steering Committee Meeting (Nov. 05, 2015)

It was noted that there were no non-technical updates to report to the group from the last meeting.

3. Technical Updates since last Steering Committee Meeting (Nov. 05, 2015)

3.1 Transportation

a. Hwy 400 Interchange

Mr. Mullan reported that, further to the meeting with the Ministry of Transportation (MTO) in October 2015, a Draft Technical Memorandum was received just prior to today's meeting from our sub-consultant addressing the "new" alternative with Forbes Road and Russell Road widened to 4-lanes and the Forbes Road/Hwy 400 interchange upgraded, in lieu of the Pooles Road Interchange. Mr. Mullan noted that this Draft Technical Memorandum has not been reviewed internally yet, and as such, he was not able to present the findings, but will do so at the next meeting.

In response to a question from Mr. Troop, Mr. Mullan confirmed that major upgrades to the interchange are not required for Phase 1, but they are required to accommodate Phase 2 (full build out of Secondary Plan). Mayor French noted for

clarification that Phase 1 involves the approved 300 Ha of development lands. It was further noted that the costs for the interchange improvements will be paid for the Midhurst development community.

b. Craig Road Extension (including Forbes Road connection)

Mr. Mullan advised that the analysis of the alternative alignments for Craig Road extension (including the connection to Forbes Road) is ongoing; however, there are no updates to provide at this time.

In response to a question from Councillor McConkey, Mr. Mullan noted the timing for the construction of the Craig Road extension is under review. Mr. Mullan further noted that it will be up to Council to determine when the road is constructed, but recommendations will be provided based on development staging, traffic operations and demand and other contributing factors, such as active transportation initiatives, servicing routes and adjacent road improvement requirements, having regard for the Township's recently adopted 6 year capital plan. It was noted that Craig Road extension is a Township DC project however, it is currently not included in the Township's 6 year capital works plan.

Mr. Giampietri suggested regular reviews and updates to the Development Charge By-law be undertaken by the Township. Mr. Mullan noted that such reviews are typically done every few of years, but must be done at least every 5 years.

In response to a question from Councillor McConkey, Mr. Brindley advised the Township's long range financial plan will be updated to address infrastructure costs and will identify what upgrades are to be included in the capital plan and what upgrades are subject to DC funding. Mr. Giampietri noted that, in his view, the new DC model (based on recent legislation changes) is not fully understood at this time. Furthermore, until it has been tested, it is not known how it may impact this project. Mr. Brindley noted that with the new DC model (i.e. Bill 73), the Township can establish appropriate budgets for DC related studies, and the costs are a DC recoverable item.

c. Intersection Improvements (including possible Roundabouts)

Mr. Mullan advised the analysis of the alternatives for each of the 11 intersections that were identified in the Phase 1 & 2 as requiring intersection improvements is ongoing; however, there are no updates to provide at this time.

d. St Vincent Street Extension

Mr. Mullan noted there are no further updates since the last Steering Committee Meeting.

e. Active Transportation (Trails & Bikes lanes)

Mr. Mullan noted there are no further updates since the last Steering Committee Meeting.

f. Transit

Mr. Mullan noted there are no further updates since the last Steering Committee Meeting.

Mr. Mullan stated that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by: Ainley

3.2 Water

- a. Mr. Mullan reported that, following the submission of the Draft Hydrogeological Report to MOECC, the preparation of the Technical Reports regarding the Design Alternatives for the following items are ongoing, however, there are no updates to provide at this time:
 - i. Water Treatment Plant(s) (including an analysis on one versus two Water Treatment Plants, the proposed treatment processes)
 - ii. Storage Reservoirs & Water Pumping Stations (including an analysis on the proposed Fire Flows and locations for proposed Pumping Stations and Reservoirs);
 - iii. Trunk Watermains (including specific routes).

Mr. Mullan confirmed the necessary well sites have been identified will be phased into operation based on Phase 1 and Phase 2 development needs. Mr. Mullan further noted that preliminary findings suggest 2 water treatment plants (one to servicing the Doran Development and one to servicing the Carson Development) may be the best approach. However, a cost benefit analysis will be undertaken to confirm the best alternative. Once the number of water treatment plants is decided, the next step will consider the treatment process required. Mr. Mullan noted the raw water sources all meet MOECC safe drinking water criteria, but the characteristics of the treatment system will need to be resolved.

Mr. Mullan mentioned that fire flows are being analysed in consultation with the Township and the Fire Department. The results of the fire and domestic flow demand analysis will establish water reservoir capacity and pumping station requirements.

Mr. Mullan noted that once the water plant location(s), including treatment process and flow capacity needs are resolved, water distribution routes and infrastructure costs will be established.

In response to a question from Councillor Hanna with regard to the impact of sprinkler systems on fire flow calculations, Mr. Mullan advised that the report will address the issue of sprinkler use and their influence on fire flows. Mr. Mullan further noted that, as the Township is unable to monitor or control the maintenance of sprinkler systems in private homes, modifying the fire flow rate requirements is not recommended as it may expose the Township to risk. Mr. Giampietri mentioned that he understands the insurance bureau and other municipalities are looking at this issue as well as they have similar concerns with private water sprinkler systems.

In response to a question from Mayor French with regard to source water treatment protection compliance as it relates to the proximity of the Snow Valley water treatment plant to the proposed waste water treatment plant on Snow Valley Road (east of Wilson Drive), Mr. Mullan confirmed there is no issue or concern as there is adequate containment and separation between the facilities.

Mr. Mullan stated that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by: Ainley

3.3 Wastewater

- a. Mr. Mullan reported that, following the recent submission of the Draft 7Q20 Flow Assessment for Willow Creek the preparation of the Technical Reports regarding the Design Alternatives for the following items are ongoing, however, there are no updates to provide at this time:
 - i. Wastewater Treatment Plant (including proposed treatment processes and effluent discharge criteria).
 - ii. Willow Creek - Assimilative Capacity Study;
 - iii. Pumping Stations, Trunk Collection System and Trunk Forcemains (including an analysis on the locations for proposed Pumping Stations and routes for forcemains);
 - iv. Cumulative Assessment of Phosphorous Loading to the Willow Creek - A meeting was held in late Dec. 2015 with NVCA, the Township, Hutchinson Environmental, XCG & Ainley to discuss the work plan associated with the Pre- & Post Phosphorous Loading assessment that is being completed;

Mr. Mullan noted that the 7Q20 Report established the low flow conditions in Willow Creek over the 9 year period. This low flow identified within this Report, which is currently with MOECC, will be utilized within the Assimilative Capacity analysis to determine if there are any impacts from the proposed effluent being discharged into Willow creek. In response to a question from Councillor McConkey, Mr. Mullan advised that the flow rate in Willow Creek will continue to be monitored.

Mr. Mullan reported the waste water treatment plant process is currently under review. Pumping stations and forcemain routes will be provided to convey flows from the east to the west end of the development lands. Possible routing of pipes through trails will be considered to reduce impacts on existing roads.

With regard to the cumulative assessment, Mr. Mullan advised that it is being completed in conjunction with the NVCA and the development of the Phosphorus budget. Mr. Mullan noted that Low Impact Development (LID) measures will be implemented throughout the new developments to promote localized groundwater infiltration and in turn reduce phosphorus loadings to the receiving streams. Furthermore, the target of no net increase in phosphorus loading will need to be achieved in order to demonstrate no impact to the Minesing wetland.

Mr. Mullan advised that XCG Consultants were retained to assist Ainley in completing a Peer review of Hutchinson's Phosphorous budget work plan. XCG are acknowledged experts in the field having been involved in the Lake Simcoe Protection Plan and will provide added value and assurance to the study process.

Mr. Mullan stated that, after the completion of the aforementioned Technical Reports all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by: Ainley

4. Other Business

No other business was brought forward by the group.

5. Next Meeting

The next Steering Committee Meeting is scheduled for Thurs March 10, 2016 @ 4pm;

6. Adjournment

The meeting was adjourned at approximately 5:30 p.m.

Minutes prepared and finalized by:



J. A. Mullan
Ainley & Associates Limited

S:\113027\Minutes & Agendas\Minutes\Steering Committee\113027 - Midhurst EA - Steering Comm Mtg No 11 Minutes (Jan 14 2016).docx

PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Thursday; Mar 10, 2016**

LOCATION: Township Office

TIME: 4:00pm

ATTENDEES:

Mayor Bill French	-	Township of Springwater
Deputy Mayor Don Allen	-	Township of Springwater
Councillor Sandy McConkey	-	Township of Springwater
Robert Brindley	-	Township of Springwater
Mark Archer	-	Township of Springwater
Vimal Patel	-	Geranium Corporation
Alex Troop	-	Alliance Homes
Brad Kalus	-	Ainley Group
Joe Mullan	-	Ainley Group

ABSENT: Councillor Jack Hanna, Shauna Dudding

PURPOSE: Steering Committee Meeting # 12

1. Approval of Minutes of Jan 14, 2016 Steering Committee Meeting

No comments were provided on the minutes and therefore they are approved as printed.

2. Non-Technical Updates since last Steering Committee Meeting (Jan. 14, 2016)

It was noted that there were no non-technical updates to report to the group from the last meeting.

3. Technical Updates since last Steering Committee Meeting (Jan 14, 2016)

3.1 Transportation

a. Hwy 400 & Forbes Road Interchange

Mr. Mullan reported the latest Draft Technical Report regarding the Hwy 400 & Forbes Road interchange evaluated a “new” alternative suggested by MTO with Forbes Road and Russell Road widened to 4-lanes and the Forbes Road/Hwy 400 interchange upgraded, in lieu of the previously proposed Pooles Road Interchange. This Draft report concludes that:

- Widening of Forbes Rd & Russell Rd to four lanes and an upgraded interchange is required in conjunction with Phase 2, but is not required for Phase 1;

- Signalization plus eastbound and westbound turning lanes onto Hwy 400 South at the west ramp terminal in conjunction with the Phase 1;

Mr. Mullan noted there were a few questions relating to the need for westbound turning lanes onto Hwy 400 that required clarification and as such further consultation with AECOM will take place. Subsequent to clarifying these items, the report will be updated and submitted to the MTO.

Action by: Ainley

b. Staging of the proposed Road Improvements

Mr. Mullan reported that, based upon the Development Phasing Plan, Draft Road Improvement Plans has been developed to identify the roads that need to be constructed/reconstructed with each stage of Development. Mr. Mullan proceeded to present the draft road improvement staging plans to the group. During which there was general discussion on what road sections should be improved and when such improvements should take place.

In response to a question from Mayor French, Mr. Mullan stated that the timing for the start of the road improvement work would be resolved as part of the subdivision agreement process and would be done in conjunction with development (i.e. external road work will occur in parallel with the internal pre-servicing construction).

In response to a question from Councillor McConkey with regard to emergency service routes in the vicinity of the Carson Road Development Area, Mr. Mullan advised that provisions for emergency access between Carson Road and Snow Valley Road will be addressed with the construction of a collector road through the subdivision. This is appropriate as collector roads are designed to accommodate the efficient movement of emergency vehicles, including fire trucks.

In response to a question from Deputy Mayor Allen, Mr. Mullan noted the affected roads will be upgraded to current Township urban design standards, complete with curb and gutter, storm sewer and sidewalks. Where deemed appropriate, the Township's rural design standard may be implemented, consisting of open road side ditches and off road sidewalks or multi-use trails. Mr. Archer noted that Snow Valley Road, being under the jurisdiction of the County of Simcoe, will be subject to current County design standards. In that respect and in response to a question asked by Mr. Troop, Snow Valley Road may be upgraded and maintained as a rural cross section in keeping with County standards.

Mr. Mullan advised that, following the completion of the Class EA study, the Township will be responsible for implementing the detail design work and it is during this phase of the project that the detailed scope of the road improvements will be established.

In response to a question from Mr. Troop, Mr. Mullan clarified that the improvements to Forbes Road during Phase 1 is anticipated to involve pavement structure improvements required in advance of the future 4-laning in Phase 2.

In response to a question from Mr. Troop with regard to upgrading Russell Road to a 4-lane rural cross section, as opposed to a 4-lane urban cross section, given there will be no new homes fronting onto the road and an open ditch design provides opportunities to incorporate low impact development drainage measures, Mr. Mullan confirmed this will be considered.

Action by: Ainley

In response to a question from Mayor French, Mr. Mullan advised that, with the exception of the proposed intersection improvements and proposed 4-lane road upgrades, the reconstruction of local roads to urban standards will not increase road capacity. Rather, the reconstructed roads will address pavement and drainage deficiencies and provide active transportation facilities, such as sidewalks, bike lanes, multi-use trails, etc.

With regard to the draft road phasing presentation plan, the following suggested modifications were identified by the group.

- i) Change colour of border on all drawings (from blue to another colour so not to conflict with the road phasing colours)
- ii) Revise development phasing summary table in the lower right hand corner by replacing "Ultimate Phase" with "Phase 2"
- iii) Revise Phase 1 Stage 1 to show reconstruction of Carson from the subdivision to Bayfield rather than from the subdivision to Wilson
- iv) Revise Phase 1 Stage 2 to show reconstruction of Carson from subdivision to Wilson
- v) Consider colour coding each phase with a different colour and update legend accordingly
- vi) Phase 1 Stage 5, colour subdivision roads in 2B, 2C and 2D and extend Russel Road reconstruction limits to the south entrance to development area 2B
- vii) Clearly identify what road improvements will be completed for the 3850 approved lots, and what is needed for the remaining 1250 units that may be approved and included in Phase 1.
- viii) Graphics should clearly distinguish what is required for Phase 1 and what is required for Phase 2
- ix) Note Snow Valley, Wilson and CR 27 as being Simcoe County Roads
- x) Add improvement to Anne Street south of Carson to coincide with the Phase 1 Stage 2/3 development

Action by: Ainley

Mr. Mullan advised that once the road improvement phasing plans have been updated to address the above comments, digital and hard copies will be made available to the group. Further discussion with regard to the timing of the road upgrades will take place at subsequent meetings.

Action by: Ainley

c. Craig Road Extension (including Forbes Road connection)

Mr. Mullan reported the analysis of alternative alignments for Craig Road extension (including the connection to Forbes Road) is ongoing. Detailed analysis of all alternatives, including a Draft recommended alternative, will be available for the next meeting.

d. Intersection Improvements (including possible Roundabouts)

Mr. Mullan reported the analysis of roundabouts versus traditional intersection improvements for each of the 11 intersections that were identified in the Phase 1 & 2 is ongoing, with no further updates to provide at this time.

e. Active Transportation (Trails & Bikes lanes)

Mr. Mullan noted there are no further updates since the last Steering Committee Meeting.

f. Transit

Mr. Mullan noted there are no further updates since the last Steering Committee Meeting.

Mr. Mullan stated that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by: Ainley

3.2 Water

a. Mr. Mullan reported that, following the submission of the Draft Hydrogeological Report, the preparation of the Technical Reports regarding the Design Alternatives for the following items is ongoing, however, there no updates to provide at this time:

- i. Water Treatment Plant(s) (including proposed treatment processes).
- ii. Storage Reservoirs & Water Pumping Stations;
- iii. Trunk Watermains (including specific routes).

In response to a question from Deputy Mayor Allen, Mr. Mullan confirmed the proposed well fields are capable of providing the necessary water volumes to service the new communities and pumping of the groundwater aquifer will not impact neighbouring private water well supplies.

In response to a question from Councillor McConkey, Mr. Mullan confirmed that chemical testing and analysis of the raw water supply has been carried out to ensure the treatment plant process and equipment will properly address both aesthetic and MOECC drinking water standards.

Mr. Mullan stated that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by: Ainley

3.3 Wastewater

a. **7Q20 Flow Assessment for Willow Creek**

Mr. Mullan noted that the report is currently being updated with the 2015 flow data, which provides the required 10 years of the flow data for the calculation of 7Q20 flow in accordance with MOECC guidelines. Mr. Mullan further noted that, based on a preliminary review of the data, no major changes to the values identified in the June 2015 Report are anticipated. A copy of the Draft Updated Report is anticipated to be received within the next few weeks. Results and findings from the updated report will be presented to the group at the next meeting.

b. **Willow Creek - Assimilative Capacity Study**

Mr. Mullan noted the report is currently being prepared utilizing the latest information from the aforementioned 7Q20 Report. Results and findings from the report will be presented to the group at the next meeting.

c. **Wastewater Treatment Plant (including proposed treatment processes and effluent discharge criteria)**

Mr. Mullan reported the preparation of the Report regarding the Wastewater Treatment Plant treatment processes and effluent discharge criteria utilizing the latest information from the 7Q20 Report and the Assimilative Capacity Study is ongoing. Mr. Mullan further noted that a Draft Report is expected to be received within the next few weeks. Preliminary findings and recommendations will be presented to the group at the next meeting.

d. **Pumping Stations and Trunk Forcemains**

Mr. Mullan provided an overview of the route options for the sanitary forcemain(s) from the East to the West that have been developed and evaluated. Based on the outcome of the evaluations, the route involving Finlay Mill Rd still represents the recommended route (as per the Phase 1 & 2 Report). Mr. Mullan further confirmed that all Pumping Stations associated with the new Residential development will be contained within the proposed development boundaries.

e. **Cumulative Assessment Report of Phosphorous Loading to the Willow Creek**

Mr. Mullan reported that a recent meeting was held with Ainley, NVCA, XCG and Hutchinson Environmental to discuss the Draft Work Plan associated with the Cumulative Assessment of Phosphorous Loading to the Willow Creek. Subsequent to this meeting the Work plan is being updated by Hutchinson Environmental. It is anticipated that the Cumulative Assessment Report will be completed will be late April, early May 2016.

In response to a question from Mayor French with regard to cost projections for the WWTP, Mr. Mullan advised that cost estimates are anticipated to be available for discussion purposes at the next meeting.

In response to a question from Councillor McConkey regarding improved technology and higher MOECC standards in the future, Mr. Mullan advised that once the WWTP has been designed and built, it would not normally be subject to "future" standards updates and enhancements, unless it was being expanded. In which case, during the design for the

expansion, the technology or treatment process may be subject to newer standards and technology of the day. However, this is not anticipated to be an issue as the WWTP will be sized and designed, in phases to ultimately accommodate full build out.

Mr. Mullan stated that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by: Ainley

4. Schedule

Mayor French suggested that a follow up presentation to Council, similar to the January 2015 presentation, be arranged to provide an update on the status of the Class EA study. This presentation would represent a prelude to the upcoming Public Information Center (PIC).

Action by: Township/ Ainley

It was noted that if the necessary technical studies and reports are received in the next few weeks that it would be possible to arrange the PIC for June 2016, but if not then it would be Sept, as it could not be held in July or August due to summer vacations.

Action by: Ainley

5. Other Business

No other business was brought forward by the group.

6. Next Meeting

The timing of the Steering Committee meetings relative to the start of the Resident Liaison Group meetings was discussed and it was resolved to change the start time to 5:00 p.m. As such, the next Steering Committee Meeting is set for Thurs; May 12, 2016 @ 5:00pm.

7. Adjournment

The meeting was adjourned at approximately 5:30 p.m

Minutes prepared and finalized by:



J. A. Mullan
Ainley & Associates Limited

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PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Thursday, May 12, 2016**

LOCATION: Township Office

TIME: 5:00pm

ATTENDEES: Mayor Bill French - Township of Springwater
Deputy Mayor Don Allen - Township of Springwater
Councillor Jack Hanna - Township of Springwater
Councillor Sandy McConkey - Township of Springwater
Brent Spagnol - Township of Springwater
Heather Coleman - Township of Springwater
Shauna Dudding - Geranium Corporation
Alex Troop - Alliance Homes
Brad Kalus - Ainley Group
Joe Mullan - Ainley Group

ABSENT: Robert Brindley, Mark Archer

PURPOSE: Steering Committee Meeting # 13

1. Approval of Minutes of Mar. 10, 2016 Steering Committee Meeting

No comments were provided on the minutes and therefore they are approved as printed.

2. Non-Technical Updates since last Steering Committee Meeting (Mar. 10, 2016)

It was noted that there were no non-technical updates to report to the group from the last meeting.

3. Technical Updates since last Steering Committee Meeting (Mar. 10, 2016)

3.1 Transportation

a. Hwy 400 & Forbes Road Interchange

Mr. Mullan reported that the Technical Report regarding the Hwy 400 & Forbes Road interchange was finalized and submitted to the MTO earlier this week. This Report concluded that:

- Widening of Forbes Rd & Russell Rd to four lanes and an upgraded interchange is required in conjunction with Phase 2, but is not required for Phase 1;
- Signalization plus eastbound and westbound turning lanes onto Hwy 400 South at the west ramp terminal in conjunction with the Phase 1.

Mr. Mullan advised that copies of the technical report will be made available to the Steering Committee following the meeting.

Action By: Ainley

b. Craig Road Extension (including Forbes Road connection)

Mr. Mullan noted that a comprehensive number of alternative alignments have been developed. Each of which were divided into the following segments for the purposes of the evaluation; east of Russell Rd to Gill Rd, to Gill Rd, to Cty 27 and then the intersection with Cty 27.

Mr. Mullan advised that, given the varying challenges associated with each of the alternative alignments, the EA team will be presenting a short list of two or three of the better suited alternatives at the Phase 3 PIC to gather further public and agency input before selecting the preferred Alternative.

In response to a question from Mayor French, Mr. Mullan confirmed that the northern alignment option utilizes the existing unopened Craig Road right-of-way allowance and is situated within the Midhurst Secondary Plan boundaries.

c. Intersection Improvements (including possible Roundabouts)

Mr. Mullan reported that the analysis of roundabouts versus traditional intersection improvements for each of the 11 intersections that were identified in Phases 1 & 2 of the EA is ongoing and that there were no new updates to present at this time.

d. Staging of the proposed Road Improvements

Mr Mullan reported that, further to the distribution of the Draft Staging of Road Improvement Plans following the last Steering Committee Meeting, the EA team is currently in the process of developing costs estimates for the proposed road improvements. Once completed, the preliminary cost estimates will be presented to the committee.

Action By: Ainley

e. Active Transportation (Trails & Bikes lanes)

Mr. Mullan advised that there were no further updates to report since the last Steering Committee Meeting. However, he noted that all roads, identified in the aforementioned Draft Staging of Road Improvement Plans, will include sidewalk(s) or trails which will form the back bone of the proposed Active Transportation infrastructure.

f. Transit

Mr. Mullan advised that there were no further updates to report, at this time.

After the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions will be compiled for presentation at the Phase 3 Public Information Centre.

Action By: Ainley

3.2 Water

- a. Mr. Mullan reported that the Hydrogeological Report has recently been updated to address a number of minor items but those items had no impact on the size and/or location of the proposed Municipal Wells identified with the previously circulated Hydrogeological Report.
- b. Mr. Mullan reported that the review and finalization of the Draft Technical Report regarding the Water Supply System Alternatives is nearing completion. Furthermore, Mr. Mullan stated that this report will be recommending two separate Water Treatment Plants (WTP); one located in the Doran Road neighborhood and the other in the Carson Road neighbourhood. This approach has the lowest Life Cycle costs and the lowest capital costs mostly because of the elimination of approximately 6 km of transmission mains between the two neighbourhoods.
- c. Mr. Mullan noted the review and finalization of the Draft Technical Report regarding the Evaluation of Water Supply and Water Treatment Alternatives is nearing completion. This report will be recommending the following:

Carson Area Neighborhood

- Construction of 3 production wells at the Sand and Gravel site with any 2 being capable of providing a total of 73 L/s to provide Phase 1 water demand;
- Construction of two production wells at West Snow Valley Site each capable of producing 8 L/s, complete with a raw water transmission main to the Sand and Gravel site;
- A WTP built at the Sand and Gravel Site (Snow Valley and Wilson Dr) to treat ground water from proposed Municipal Wells. The WTP will have an Ion Exchange (IX) system for nitrate removal. The WTP will also include a filter system with special filter media for removal of iron and manganese. The disinfection system will include chlorine storage tank and a feed system;
- An Inground reservoir with a minimum 3,868 m³ storage capacity to provide emergency, fire storage and equalisation volume for peak hours for Phase 1 & 2;
- A pump station to provide the peak hourly demand of the Carson Area and to maintain the pressure range between 50 and 90 psi throughout the system. The pump station will also include fire pump(s) to provide the required fire flow of 133 L/s.

Mr. Mullan reported the capital costs associated with the Carson WTP are approximately \$10.8 Million for Phase 1 and an additional 6.0 Million for Phase 2.

Doran Area Neighborhood

- Construction of 3 production wells at the Alliance Well Site, with any 2 being capable of providing a total of 100 L/s, complete with a raw water transmission main to the WTP site;
- Construction of 3 production wells at the Old School Road Well Site with any 2 being capable of providing 40 L/s, complete with a raw water transmission main to the WTP site;
- A WTP to treat ground water from the aforementioned well sites. The WTP would include filter system with special filter media for removal of iron and

manganese. The disinfection system would include chlorine storage and, feed system;

- An Inground reservoir, with a minimum 3,500 m³ for Phase 1 to provide emergency, fire storage and equalisation volume for peak hours, and for Phase 2 the storage volume would be expanded to 5,400 m³,
- A pump station to provide the peak hourly demand of the Doran Area and to maintain the pressure range between 50 and 90 psi throughout the system. The pump station will also include fire pump(s) to provide the required fire flow of 133 L/s.

Mr. Mullan reported the capital costs associated with the Doran WTP are approximately \$11.6 Million for Phase 1 and an additional 8.0 Million for Phase 2.

Mr. Mullan advised that copies of the updated technical reports will be made available to the committee following the meeting.

Action By: Ainley

In response to a question from Deputy Mayor Allen, Mr. Mullan confirmed the proposed location of the Doran WTP is in the northwest corner of the development (i.e. Gill Road area) and is of a similar size to the Carson WTP.

In response to a question from Mr. Troop, Mr. Mullan noted that the estimated cost difference of \$600,000 for the Doran WTP compared to the Carson WTP is due to the additional raw water supply lines from the well sites.

In response to a question from Mayor French, Mr. Mullan confirmed that the well sites do not have to be located within the Midhurst Secondary Plan boundary. However, Mr. Mullan further noted that wells locations are accessed to ensure conformance with the Clean Water Act and Source Water Protection guidelines.

Once the aforementioned Technical Reports are finalized, the Recommended Design Alternatives and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action By: Ainley

3.3 Wastewater

a. 7Q20 Flow Assessment for Willow Creek

Mr. Mullan reported that the 7Q20 Flow Assessment report has recently been updated with the 2015 flow data, which provides the required 10 years of the flow data for the calculation of 7Q20 flow in accordance with MOECC guidelines. Mr. Mullan noted that the values identified within this updated report are slightly higher than the values within the June 2015 Report (430L/s versus 405L/s). Mr. Mullan further advised that the slightly larger number is better as it identifies a slightly higher base flow.

b. Willow Creek - Assimilative Capacity Study

Mr. Mullan reported that the Willow Creek - Assimilative Capacity Study has recently been completed utilizing the updated information from the 7Q20 Report.

Mr. Mullan noted that various models were used within this study to model the mixing of ammonia, dissolved oxygen and assimilation (nitrification) of ammonia, plus complete a mass balance model for total phosphorus (TP) concentrations.

The report identifies that:

- the existing water quality record shows that the present-day 75th percentile concentration of total phosphorus in Willow Creek is 0.035 mg/L, and therefore it is considered a “Policy 2” receiver for TP.
- This report identifies that the effluent from the WWTP at full build out, would actually reduce total phosphorus concentrations within Willow Creek, under summer low flow conditions, from 0.035 to 0.034 mg/L or less (worse case scenario).

Mr. Mullan advised that the issue of total phosphorus (TP) loading to Willow Creek will be addressed as part of the Report regarding the Overall Phosphorus Budget for the Midhurst Secondary Plan Area.

c. Wastewater Treatment Plant (including proposed treatment processes and effluent discharge criteria)

Mr. Mullan reported that the preparation of the Report regarding the Wastewater Treatment Plant treatment processes and effluent discharge criteria utilizing the latest information from the 7Q20 Report and the Assimilative Capacity Study is nearing completion.

Mr. Mullan noted the liquid treatment train within a Wastewater Treatment Plant is the wastewater treatment process commencing at the head of the plant and finishing with the discharge of treated effluent at Willow Creek. Mr. Mullan advised that the forthcoming report will be recommending a preferred liquid treatment solution consisting of the following:

- A Step Feed Biological Nitrogen Removal (BNR) secondary process followed by Membrane tertiary treatment. In particular, the preliminary treatment includes screening and degritting and then the flow will be distributed to two main bioreactors that have four steps. Tertiary treatment will follow the secondary clarifier. As stated previously, it is recommended membrane filtration technology is acceptable technologies for the tertiary treatment. Final treatment will include UV disinfection before pumping to the discharge point.

Mr. Mullan reported the capital costs associated with the Wastewater Treatment Plant are \$55.0 Million for Phase 1 and an additional 40.0 Million for Phase 2.

d. Pumping Stations and Trunk Forcemains

Mr. Mullan advised that there were no further updates to the Forcemain(s) routes from the East to the West from what was presented at the last meeting (Note the route of Finlay Mill Rd is still the recommended route as per the Phase 1 & 2 Report).

e. Cumulative Assessment Report of Phosphorous loading the Willow Creek

Mr. Mullan reported that the Draft Report regarding the Phosphorus Budget for the Midhurst Secondary Plan Area is nearing completion. Mr. Mullan also noted that the Work Plan (frame of the report) was agreed to by the NVCA and XCG at a recent meeting; therefore, subsequent to being received, a meeting will be arranged with the NVCA and XCG to review and discuss the report.

In response to a question from Mayor French, Mr. Mullan advised that it is anticipated that Willow Creek will receive equal to or less phosphorous loading following full build out compared to the amounts currently entering the creek today. This is premised on a reduction in phosphorus loading from existing undeveloped lands and the positive influence of Low Impact Development measures that will be implemented as part of the new subdivision stormwater management designs. In this manner, the 'net zero' target can be achieved. Ms. Dudding further commented that the development group is committed to this net zero target as mandated by the minutes of settlement and are prepared to work closely with the NVCA to implement improvements elsewhere in the watershed should the net zero target not be possible at the WWTP outlet.

After the completion of the aforementioned Technical Reports all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action By: Ainley

4. Schedule

Mr. Mullan presented the following key milestone dates for the completion of the Class EA.:

- A Council Presentation, providing a brief update on the status of the Class EA on Jun 15, 2016;
- The Phase 3 Public Information Centre (PIC) on Thursday June 30, 2016 (location yet to be determined);
- A 3-week comment period following the PIC (as opposed to the regulatory 2-week);
- Steering Committee and Resident Liaison Group meeting's in Sep. Oct & Nov.
- A Council Presentation, providing a brief update on the status of the Class EA on Dec, 2016;
- Open House No. 2 in January 2017;
- The formal 30 Day Public Review Period associated with the filing of the Environmental Study Report (ESR) from mid Jan 2017 to mid Feb 2017.
- Finalization of the Class EA process in March 2017 (assuming no Part II order is received).

Deputy Mayor Allen suggested advancing the date of the PIC to Monday June 27 to avoid potential conflicts with the July 1 long weekend.

In response to a question from Councillor McConkey, Mr. Mullan advised that a high level overview of the PIC display boards would be presented at the Council presentation.

Post Meeting Note: Subsequent to this meeting it was determined that the PIC would be postponed until Sept 2016.

5. Other Business

No other business was brought forward by the group.

6. Next Meeting

Mr. Mullan noted that new meeting dates have not been set yet; however, the next tentative meeting date is early Sept, 2016.

7. Adjournment

The meeting was adjourned at approximately 6:30pm.

Minutes prepared and finalized by:



J. A. Mullan
Ainley & Associates Limited

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PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Monday; June 27, 2016**

LOCATION: Township Office

TIME: 4:00pm

ATTENDEES: Mayor Bill French - Township of Springwater
Deputy Mayor Don Allen - Township of Springwater
Councillor Jack Hanna - Township of Springwater
Councillor Sandy McConkey - Township of Springwater
Robert Brindley - Township of Springwater
Vimal Patel - Geranium Corporation
Brad Kalus - Ainley Group
Joe Mullan - Ainley Group

ABSENT: Alex Troop (Alliance Homes), Heather Coleman (Twp. Springwater)

PURPOSE: PIC Coordination Meeting

1. **Approval of Minutes of May 12, 2016 Steering Committee Meeting**

No comments were provided on the minutes and therefore they are approved as printed.

2. **Non-Technical Updates since last Steering Committee Meeting (May 12, 2016)**

It was noted that there were no non-technical updates to report to the group from the last meeting.

3. **Public Information Centre (PIC) Slides**

a. Overview of Public Information Centre Material/Slides

Mr. Mullan circulated hard copies of the draft PIC slides to the group and then proceeded to provide a general overview of each one. Round table discussions took place amongst the group resulting in the following comments and suggested revisions:

Water

- Well capacity – clarify that adequate back up well capacity will be provided in case of a problem with one of the main wells
- Well fields – clarify that current municipal wells and wetlands are not impacted by the proposed well fields

Transportation

- Phasing - add subtotals for each stage

- Phasing – revise Carson Road stage limit from Anne St intersection to subdivision intersection
- Add note indicating no decision has been made with regard to the preferred design concepts
- Craig Road – add straight through extension of Forbes Road to short list of alignment options
- Craig Road alignment alternatives – revise colour and line type scheme to make it easy to follow and correlate between long list and short list alternative plans
- Incorporate information from Master Trail Plan prepared by MTW to active transportation plan
- Roundabouts – apply turning templates to demonstrate how farm equipment could navigate through

Waste

- Revise terminology for ease of non-technical members of the public
- Weights and scores – consider assigning a higher value to the environmental criteria particularly as it relates to the Minesing Swamp
- Tertiary treatment – add advantages and disadvantages table
- Odour mitigation – consider adding information/details
- Costs – considering clarifying who is responsible for initial capital and future operating / maintenance
- Costs – review the anticipated servicing costs to home owners and determine how it compares to what residents at Snow Valley are paying

General

- High number of slides – AAL to consider reducing number for the formal public presentation
- Development plan – provide legend to identify / clarify coloured areas similar to OP Land Use Plan but scaled down with a disclaimer note “not a complete representation of the OP Land Use Schedule”
- Revise technical terminology where possible for ease of understanding by non-technical members of the public

Action By: Ainley

b. Format for Public Information Centre

Mr. Mullan suggested the PIC be structured as an informal drop in format between 4pm and 7pm, during which time the applicable Display Boards along with representatives of the Project Team will be available to answer individual questions; with formal presentation at 7pm followed by questions at 8:30 to 9:30pm.

It was suggested that a short 30 minute break be provided prior to the start of the formal presentation.

It was agreed that Mayor French would act as the independent facilitator during the presentation and question and answer period.

c. Location for the Public Information Centre

It was agreed the PIC will be held at the Snow Valley Ski Resort. Subject to Council's schedule and the availability of the venue, it was resolved that the PIC would take place during the last two weeks of September. Mr. Brindley to confirm the date of the PIC and will advise the group.

Action by: Township

d. Notice of Public Information Centre (PIC)

Mr. Mullan provided a copy of the draft Notice of PIC to the group for review and comment.

Action by: Township and Developer Group

It was resolved that notices regarding the Public Information Centre will be circulated in July, (via e-mail & regular mail, Township website, newspaper postings and available social media) following finalization of date.

Action by: Township

4. Schedule

Mr. Mullan presented the following next steps and schedule for the completion of the Class EA:

- A Council Presentation, providing a brief update on the status of the Class EA on Aug 3, 2016;
- The Phase 3 Public Information Centre on the latter part of September, 2016
- Steering Committee and Resident Liaison Group meeting's in Sep. Oct & Nov.
- A Council Presentation, providing a brief update on the status of the Class EA on Dec, 2016;
- Open House No. 2 in January 2017;
- The formal 30 Day Public Review Period associated with the filing of the Environmental Study Report (ESR) from mid Jan 2017 to mid Feb 2017.
- Finalization of the Class EA process in March 2017 (assuming no Part II order are received).

5. Other Business

Township to confirm dates for September, October and November Steering Committee and Resident Liaison Group meetings. Township to advise both groups accordingly.

Action by: Township

Draft technical reports to be made available within 2-3 weeks following today's meeting. Hard copies will be provided upon request; otherwise digital copies will be available for download on the Township's website.

Action by: Ainley

6. **Next Meeting**

New meeting dates have not been set yet; however, the next tentative meeting date is early Sept, 2016. Township to confirm.

Action by: Township

7. **Adjournment**

The meeting was adjourned at approximately 7:00pm.

Minutes prepared and finalized by:



J. A. Mullan
Ainley & Associates Limited

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PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Thursday, Oct 13, 2016**

LOCATION: Township Office

TIME: 5:00pm

ATTENDEES:

Mayor Bill French	-	Township of Springwater
Deputy Mayor Don Allen	-	Township of Springwater
Councillor Jack Hanna	-	Township of Springwater
Councillor Sandy McConkey	-	Township of Springwater
Robert Brindley	-	Township of Springwater
Mark Archer	-	Township of Springwater
Vimal Patel	-	Geranium Corporation
Mario Giampietri	-	Geranium Corpotation
Alex Troop	-	Alliance Homes
Brad Kalus	-	Ainley Group
Joe Mullan	-	Ainley Group

PURPOSE: Steering Committee Meeting # 15

1. Approval of Minutes of Jun 27, 2016 Steering Committee Meeting

No comments were provided on the minutes and therefore they are approved as printed.

2. Non-Technical Updates since last Steering Committee Meeting (Jun 27, 2016)

It was noted that there were no non-technical updates to report to the group from the last meeting.

3. Technical Updates since last Steering Committee Meeting (Jun 27, 2016)

It was noted that there were no technical updates to report to the group from the last meeting.

In response to a comment from Mayor French, Mr. Mullan confirmed that he will follow up and request that executive summaries will be provided in each of the technical reports to assist the reader in understanding the key findings, conclusions and recommendations.

Action By: Ainley

4. Overview of Public Information Centre (PIC) Display Boards

Mr. Mullan presented an overview of the PIC display boards. The following comments were provided by the group.

- i) Slide 3 – reverse order of information... Midhurst Secondary Plan summary first followed by Midhurst Phase 1 and 2 notes.
Action By: Ainley
- ii) Slide 8 - second bullet.... Change Old School Road to Old Second Road.
Action By: Ainley
- iii) Slides 10, 11, 18, 25, 29, 38 and 56 – change colour of white text in the tables to black.
Action By: Ainley
- iv) Slide 16 - provide totals for Phase 1 and Phase 2 (Carson and Doran costs together) and then total of all costs (i.e. Phase 1 + Phase 20).
Action By: Ainley
- v) Add note to Sign In Board to advise the public that a copy of the PIC display material will be available on the Township's website.
Action By: Ainley
- vi) Best case scenario regarding the estimated timeline for commencement of construction – 2018.

Due to time constraints, not all display boards were able to be discussed. It was resolved that further discussion could take place, if and as necessary, during the Resident Liaison Committee meeting.

5. **Other Business**

No other business was brought forward by the group.

6. **Next Meeting**

Steering Committee Meeting set for Thurs; Dec 8, 2016 @ 5:00pm;

7. **Adjournment**

The meeting was adjourned at approximately 6:30 p.m.

Minutes prepared and finalized by:

Ainley & Associates Limited



J. A. Mullan, P.Eng.
President & CEO

S:\113027\Minutes & Agendas\Minutes\Steering Committee\113027 - Midhurst EA - Steering Comm Mtg No 16 Minutes (Oct 13 2016).docx

PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Thursday, Dec 08, 2016**

LOCATION: Township Office

TIME: 5:30pm

ATTENDEES:

Mayor Bill French	-	Township of Springwater
Deputy Mayor Don Allen	-	Township of Springwater
Councillor Jack Hanna	-	Township of Springwater
Councillor Sandy McConkey	-	Township of Springwater
Robert Brindley	-	Township of Springwater
Mark Archer	-	Township of Springwater
Vimal Patel	-	Geranium Corporation
Mario Giampietri	-	Geranium Corporation
Alex Troop	-	Alliance Homes
Joe Mullan	-	Ainley Group

PURPOSE: Steering Committee Meeting # 16

1. Approval of Minutes of Oct 13, 2016 Steering Committee Meeting

No comments were provided on the minutes and therefore they are approved as printed.

2. Non-Technical Updates since last Steering Committee Meeting (Oct 13, 2016)

It was noted that there were no non-technical updates to report to the group from the last meeting.

3. Technical Updates since last Steering Committee Meeting (Oct 13, 2016)

It was noted that there were no technical updates to report to the group from the last meeting.

4. Overview of Public Information Centre (PIC) & Summary of Next steps

Mr. Mullan Noted that approximately 160 signed in at the Public Information Centre (PIC) that was held at Snow Valley Resort on Oct 18, 2016. Mr. Mullan also noted that overall the meeting went well in that people liked the one on one opportunity as well as the formal presentation and Q&A period afterwards.

Mr. Mullan also noted that a total of 67 Comments were received during the official comment period (Oct 18 to Dec 1, 2016) via handwritten sheets, emails, and/or letters.

The upcoming schedule was discussed and Mr. Mullan noted that Ainley would need some time to review the comments and formalize response comments for review and discussion with the Steering Committee. With regard to a timeline for that it was noted that this could be completed by mid Jan 2017. It was also noted that the Ainley would group the comments and the responses where possible in Common Questions and Common Responses for the Committees.

It was noted that following the Steering Committee's review of the comments, that they will need to be shared with the Resident Liaison Group, and after a further discussion it was noted that could be scheduled for mid Feb 2017.

Mr. Mullan noted that in conjunction with finalization and issuance of the response comments, that Ainley would proceed with the finalization of the Preferred Alternatives and the preparation of the Draft Environmental Study Report (ESR) and that it is could be completed for mid to late March. Mr. Mullan also noted that in accordance with Ministry of Environment and Climate Change (MOECC) requirements, we are required to submit the Draft Environmental Study Report to the MOECC for their internal review prior to going public with the document. In conjunction with this it was noted that Council would want to be briefed on the ESR prior to the submission to MOECC, and as such staff will investigate how this can be facilitated.

Although it was acknowledged that no dates can be finalized until Mr. Brindley reviews Councilors availabilities; the following approximate schedule was generally agreed to:

- Steering Committee Meeting to be held mid-January 2017 to review and discuss draft response comments;
- Resident Liaison Group Meeting to be held mid February 2017 to present general response comments;
- Ainley would prepare the Draft Environmental Study Report by mid to late March 2017;
- The Township will review if Council can be briefed on the Draft Environmental Study Report, in a non-public forum, prior to its submission to MOECC;
- Submission of Draft Environmental Study Report to the MOECC in March/April 2017;

Action By: Ainley / Township

5. Other Business

No other business was brought forward by the group.

6. Next Meeting

It was Agreed that Mr. Brindley would review Councilors agendas and set new meeting dates in Jan and Feb as discussed earlier;

7. **Adjournment**

The meeting was adjourned at approximately 6:30 p.m.

Minutes prepared and finalized by:

Ainley & Associates Limited



J. A. Mullan, P.Eng.
President & CEO

S:\113027 Midhurst\Minutes & Agendas\Minutes\Steering Committee\113027 - Midhurst EA - Steering Comm Mtg No 16 Minutes (Oct 13 2016).docx

Joe Mullan

From: Joe Mullan
Sent: Friday, November 14, 2014 11:58 AM
To: Brad Sokach; Helen Zhang; Dan Orr; Ted Belayneh; Dan Delaquis; Chunmei Liu; Glenn Switzer; Neil Hutchinson; Shauna Dudding; Reid Mitchell; Gary Scott
Cc: Ainley Collingwood File
Subject: Midhurst Class EA - Consultation Mtg with MOE (113027)
Attachments: 113027 Midhurst - MOE Mtg Notes (Oct 22 2014).pdf; Midhurst Secondary Plan - Schedule A Land Use (With MMAH Highlighted).pdf

Hi Everyone:

Please find attached Meeting Notes associated with the Consultation Meeting with MOE held on October 22, 2014 regarding the Phase 3 & 4 Class EA for Water, Wastewater & Transportation associated with the Midhurst Secondary Plan. However, please note that given the informal nature of the meeting, the attached Meeting Notes have been prepared to summarize the points made/raised by the Township, NVCA, Ainley, Developers and Hutchinson Environmental only.

As requested at the aforementioned meeting, we also attach Schedule A - Land Use Map from the Midhurst Secondary Plan, with the Lands that are still under appeal by MMAH highlighted.

Should you have any questions and or comments regarding the attached material, please do not hesitate to contact me.

Regards,

J. A. Mullan, P.Eng.
President & CEO



www.ainleygroup.com

Tel: (705) 445-3451 Ext. 126

Cell: (705) 718-7230

CAUTION: The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

NOTES OF CONSULTATION MEETING WITH MOE

PROJECT: Township of Springwater
Midhurst Phase 3 & 4 – Class EA
Ainley Project Number 113027

DATE: Wednesday October 22, 2014

LOCATION: MOE Central Region Office, 8th floor, 5775 Yonge St. Toronto

TIME: 1:30 pm to 3:15 pm

PRESENT:

Brad Sokach	Township of Springwater
Helen Zhang	Ministry of Environment
Dan Delaquis	Ministry of Environment
Ted Belayneh	Ministry of Environment
Sandra Thomas	Ministry of Environment
Chunmei Liu	Ministry of Environment
Glen Switzer	Nottawasaga Valley Conservation Authority
Neil Hutchinson	Hutchinson Environmental Service Ltd
Tara Roumeliotis	Hutchinson Environmental Service Ltd
Shauna Dudding	Geranium Corp.
Joe Mullan	Ainley Group
Gary Scott	Ainley Group
Reid Mitchell	Ainley Group

DISTRIBUTION: All Present

1.0 Purpose of Meeting

After introductions, Mr. Mullan thanked the Ministry of Environment (MOE) representatives for their attendance and noted that the purpose of the meeting was to discuss Midhurst Phase 3 & 4 Class EA and in particular the 7Q20 Flows in Willow Creek, the proposed Effluent Criteria for Wastewater Treatment Plant and finally the Preliminary Nutrient Loading Assessment relating to the Midhurst Secondary Plan.

It was also agreed that all discussions would be informal and therefore, the following Meeting Notes have been prepared to summarize the points made/raised by the Township, NVCA, Ainley, Developers and Hutchinson Environmental only.

2.0 Background

Mr. Mullan noted that Ainley have been retained by the Township of Springwater to complete Phase 3 & 4 of Class EA process for Water, Wastewater & Transportation associated with the Midhurst Secondary Plan. In addition, Mr. Mullan noted that Ainley had completed the Phase 1 & 2 Master Plan in 2009.

It was noted the Midhurst Secondary Plan Area was approved by Township of Springwater and the County of Simcoe in 2008 and 2001 respectfully and although it was appealed to the Ontario Municipal Board (OMB) by the Ministry of Municipal Affairs and Housing (MMAH), they withdrew their appeal on 300ha in Nov. 2012. Mr. Mullan circulated a map identifying the 300ha that now could proceed towards development. Mr. Mullan also noted the Class EA is being completed for the entire Midhurst Secondary Plan (approx. 758ha) and that the Water, Wastewater & Transportation Infrastructure will be staged in conjunction with the development. It was also noted that the infrastructure needs for Phase 1 will be assessed in Stages within the ESR such that it can also be constructed in stages.

After a brief discussion it was suggested that a map be distributed identifying all of the lands with the Midhurst Secondary Plan including the lands still under appeal at the OMB (see attached). It was further clarified that while the objective was not to piecemeal the Class EA, any subsequent ECA application would only be for lands cleared by the OMB.

Post Mtg. Note: Further to the July 2014 OMB hearing related to the Draft Plans for the 300 ha, the OMB issued its decision along with formal Draft Plan Condition's for the 300 ha on October 29, 2014.

3.0 7Q20 Flow

Mr. Hutchinson and Ms. Roumeliotis provided a brief overview of the Flow Monitoring that has been ongoing in Willow Creek. It was noted that data is only available for Willow Creek since 1996 and based upon that data the following 7Q20 low flow estimates in the creek have been identified:

- A flow of 0.65 m³/sec was the lowest 7 day flow on record for the period since 2006;
- An intermediate value of 0.46 m³/sec which was determined by prorating flows from similar watersheds in the vicinity (Sturgeon River and Coldwater River);
- A flow of 0.27 m³/sec was modelled as a "provisional" estimate based upon discussions with MOE in 2008/09.

Mr. Hutchinson noted that based upon the available data, all future analysis should be using as a minimum, the intermediate value of 0.46 m³/sec and not the previously utilized 0.27 m³/sec flow. Mr. Hutchinson also noted that an updated report, with 2014 flow data, will be prepared and submitted to Ainley to form part of the Class EA process. Mr. Mullan noted that this updated report will be forward to the MOE.

Action by HESL & Ainley

4.0 Proposed Effluent Criteria

Mr. Hutchinson provided a brief overview of the Draft Aug. 15, 2014 Memorandum regarding the Willow Creek Effluent limits and noted that based upon the analysis done to date is suggesting 0.05 mg/l TP as a compliance limit for Phase 1 WWTP and that 0.03 mg/l TP as a compliance limit of the Ultimate WWTP. It was further noted that the Phase 1 WWTP would accommodate the 300ha of approved lands and that the Ultimate WWTP would accommodate the entire Midhurst Secondary Plan. It was also noted that based upon history, treatment technologies will improve and the costs (both construction & operational) will reduce over time such that the compliance limit of 0.03 mg/l TP for the Ultimate WWTP will be more easily achieved.

Mr. Hutchinson also suggested Ammonia compliance limits of 1.5 mg/L in summer and 3 mg/L in winter for Phase 1 assuming no diffuser and a Nitrate compliance limit of 17.2 mg/L for Phase 1 and for full build out.

Mr. Switzer noted that the level of treatment at the proposed WWTP may need to be higher to remove ortho-phosphorous.

Mr. Belayneh asked about DO and Mr. Hutchinson indicated that BOD was so low that would be minimal effect on DO; however, it was noted that it would be discussed in the ESR.

Ainley's noted that the Township, the NVCA, HESL and Ainley believe that the overall watershed can be better protected and/or improved by using advanced treatment technologies at the WWTP and utilizing the monies saved for reducing phosphorus in other areas within the watershed, versus constructing and operating extreme levels of treatment, such as Reverse Osmosis (RO), at the WWTP.

5.0 Preliminary Nutrient Loading Assessment

It was noted that concurrent with the Class EA, that Ainley in conjunction with the NVCA are completing a Stormwater Master Drainage Study for the Midhurst Secondary Plan.

Mr. Switzer noted that given the importance of the Minesing Wetlands which are downstream of the Secondary Plan, the Stormwater Master Drainage Study is proposing very conservative targets whereby the downstream water courses are deemed sensitive and cannot accept any additional impacts. Mr. Switzer further noted that targets include, but are not limited to:

- No additional nutrient loading downstream from both the proposed developments and the Wastewater Treatment Plant (WWTP);
- Implementation of Low Impact Developments (LID) measures throughout the proposed developments to infiltrate the first 25mm of stormwater runoff;
- Design and construct all SWM facilities to comply with current MOE Enhanced Level Standards (note there will no reduction on SWM facilities sizes, due to implementation of the aforementioned LID measures);

Mr. Hutchinson noted that the Preliminary Nutrient Loading Assessment which, was submitted to MOE in advance of the meeting, shows that we can achieve "no additional nutrient loading" by identifying opportunities for best management practices (BMPs), low impact development (LID), innovative storm water management and phosphorus offsets. With regard to phosphorus Mr. Hutchinson noted the following:

- The average annual phosphorus load in Willow Creek (downstream of the WWTP discharge) since 2006 was 2,710 kg, with a range from 1,704 kg in 2012 to 3,433 kg in 2008.
- The estimated annual phosphorus Pre-Development load from the proposed development lands within the Midhurst Secondary Plan is 144 kg;
- The estimated annual phosphorus Post-Development load from the proposed development lands within the Midhurst Secondary Plan is 69 kg, with the implementation of LID measures including infiltrating the first 20 mm of stormwater runoff;
- The estimated annual phosphorus load from the proposed WWTP, at full build out, is 135 kg;

Mr. Hutchinson summarized this by noting that the cumulative phosphorus impact of the Midhurst Secondary Plan Development on the Willow Creek, using the earlier noted assumptions, would be 60kg per year (69+135-144) which represents approximately 2% of the average annual loading in Willow Creek.

Mr. Hutchinson also noted that in accordance with a preliminary assessment entitled "Matheson/Willow Creek Phosphorus Load Reduction Opportunities Analysis" completed by Greenland in 2013 there is the potential for >560 kg/year of phosphorus reduction ("offsetting") opportunities in the lower reaches of the Matheson/Willow Creek system.

Finally it was noted that the need/opportunity for phosphorus offsetting or trading programs would be further evaluated in conjunction with the additional analysis being completed on the assessment capabilities of the creek and on the wastewater treatment technologies.

Ms. Dudding noted that the Developers are working with the Township and the NVCA to complete the Phosphorus budget process. Mr. Switzer indicated that the two processes (Phosphorus budgeting process as part of the Master Drainage Study and phosphorus treatment in the WWTP as part of the Class EA) need to go hand in hand.

The MOE asked if the Class EA would address full build out. In response it was noted that the ESR would provide a sliding scale – addressing servicing needs for Phase 1 up to and including full build out.

Mr. Sokach asked if the MOE has any effluent criteria with respect to pharmaceuticals and how they must be treated as the Public has been asking a lot of questions relating to this. In response it was noted that the issue is being monitored by the Ministry and numerous other agencies around the world including the Environmental Protection Agency (EPA) in the US, but that no targets have been set yet.

Mr. Sokach also asked when or if a Deviation to Policy 2 is required for effluent discharge to Willow Creek. In response it was noted that after it has been determined that all reasonable wastewater treatment methods and practices have been considered and that the only solution is for a Deviation, then in select cases a Deviation is granted.

6.0 Other Issues

The meeting adjourned at 3:15pm.

Notes prepared by R. Mitchell and subsequently finalized by:



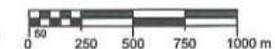
J. A. Mullan, P.Eng.
President & CEO

MIDHURST SETTLEMENT AREA SECONDARY PLAN

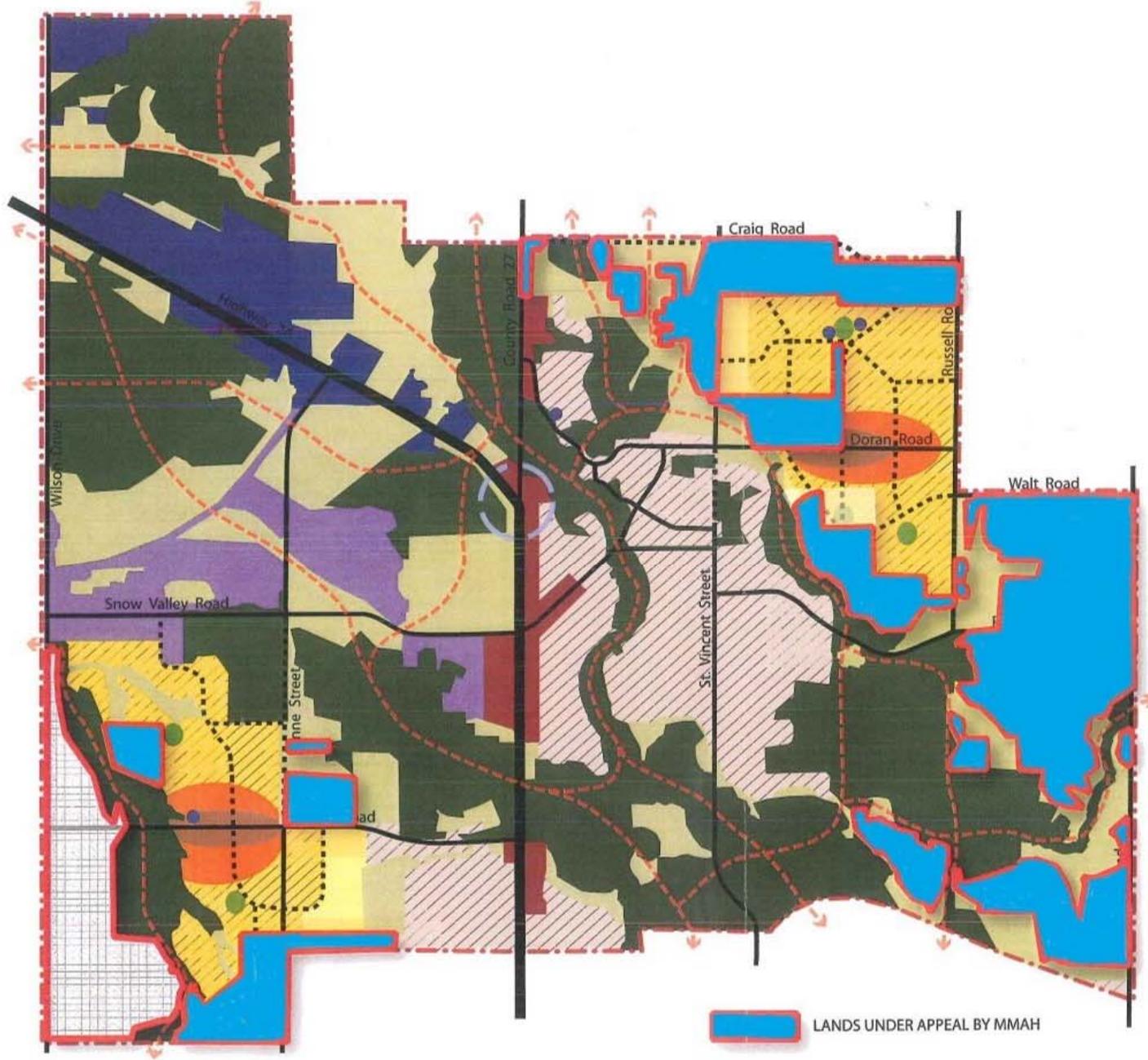
TOWNSHIP OF SPRINGWATER
October 29, 2008

Schedule A - Land Use

-  Commercial / Mixed Use
-  Administration / Government
-  Employment
-  Environmental Protection Area I
-  Environmental Protection Area II
-  Midhurst Village
-  Midhurst Transition Residential
-  Midhurst Low Density Residential
-  Midhurst Medium Density Residential
-  Midhurst High Density Residential / Mixed Use
-  Future Development Potential
-  Park
-  School / Institutional
-  Provincial Highway
-  Primary Road
-  Potential Primary Road
-  Settlement Area Boundary
-  Environmental Connections / Potential Trails
-  Future Intersection Improvements



November 27, 2012



NOTES OF MEETING WITH NVCA

- PROJECT:** Township of Springwater
Midhurst Phase 3 & 4 – Class EA
Ainley Project Numbers 113027 & 213115
- DATE:** Monday March 6, 2017
- LOCATION:** Township of Springwater Office
- TIME:** 2:00 pm
- ATTENDEES:**
- | | | |
|------------------------|---|-------------------------------------------|
| Mayor Bill French | - | Township of Springwater |
| Deputy Mayor Don Allen | - | Township of Springwater |
| Robert Brindley | - | Township of Springwater |
| Brent Spagnol | - | Township of Springwater |
| Mark Archer | - | Township of Springwater |
| Chris Hibberd | - | Nottawasaga Valley Conservation Authority |
| Glenn Switzer | - | Nottawasaga Valley Conservation Authority |
| Neil Hutchinson | - | Hutchinson Environmental Sciences Ltd |
| Brent Parsons | - | Hutchinson Environmental Sciences Ltd |
| Joe Mullan | - | Ainley Group |
- DISTRIBUTION:** All Present plus Class EA Steering Committee Members

These Meeting Notes do not provide a chronological record of the discussions, but they summarize and group the discussions that did take place during the meeting.

Item	Description	Action/Notes
1	Introduction and Objectives of Meeting	<ul style="list-style-type: none"> ☼ Mr. French opened the meeting by thanking everyone for attending and noting that the Midhurst development process has included many meetings, Public Information Centres, etc and that it is important for the Mayor and Council to continue this since it's the largest development ever in Springwater. ☼ Mr. French also noted that the given the Minesing Wetlands is downstream of the proposed developments the Nottawasaga Valley Conservation Authority (NVCA) and Township of Springwater need to work together to assess the proposal.

Item	Description	Action/Notes
2	Project Summary	<ul style="list-style-type: none"> ☼ Mr. French asked how do the Class Environmental Assessment (Class EA) and Overall Drainage Plan come together. Plus, what is the schedule for submission of Environmental Study Report associated with the Class EA and Overall Drainage Plan? ☼ In response Mr. Mullan noted the following: <ul style="list-style-type: none"> ➤ The purpose of the Class EA is to assesses Water, Wastewater and Transportation necessary to accommodate the Midhurst Secondary Plan. ➤ The Class EA does not include Stormwater, which will be assessed initially through the Overall Drainage Plan and ultimately through the individual Stormwater Management Reports associated with each Development. ➤ Stringent conditions have already been imposed on the Stormwater for Midhurst Secondary Plan, through NVCA's Minutes of Settlement, including: <ul style="list-style-type: none"> ▪ The ability of the stormwater management system to hold back the first 25 mm of storm runoff for a period of 48 hours. ▪ Reduce the Post-Development phosphorous loading to below Pre-Development loading levels, such that when the additional phosphorous load from the new Wastewater Treatment Plant (WWTP) is included, there shall be no net increase. ▪ The ability of the stormwater management system to infiltrate back into the ground, close to the source, the first 20 mm of rainfall while also ensuring a healthy hydrologic cycle. ➤ The Overall Drainage Plan and Class EA process are proceeding separately and independently, but fit together. ➤ The requirement of "no net phosphorus increase" in Willow Creek is where the Class EA (Wastewater Treatment Plant effluent) and Overall Drainage Plan (Stormwater input of phosphorus) come together. ➤ There are approximately 170 Draft Plan Conditions imposed by the Township, NVCA and others agencies, that must be met prior to any development proceeding. ➤ For a Schedule of Class EA and Overall Drainage Plan see Section 6. ☼ Mr. Hibberd reaffirmed that the 25 mm of infiltration still a target that the NVCA would like to see achieved.

Item	Description	Action/Notes
		<ul style="list-style-type: none"> ❖ Dr. Hutchinson noted that SCS and Crozier (Consulting Engineers for Developers) are aiming for 25 mm but have identified that 23 mm of infiltration is possible. ❖ Mr. Mullan noted that the detailed analysis from SCS and Crozier will be reviewed by Ainley and NVCA as part of the Overall Drainage Plan.
3	Roles and Responsibilities	<ul style="list-style-type: none"> ❖ Mr. Mullan noted the Midhurst Class EA for Water, Wastewater and Transportation was being completed by Ainley on behalf of the Township & the Midhurst Developers Group in accordance with the Municipal Class EA process ❖ Mr. Mullan further noted that the Overall Drainage Plan was being completed by Ainley on behalf of the Township & the Midhurst Developers Group, ❖ However, Mr. Mullan also noted that the NVCA would be a key contributor to both these studies.
4	Reports and Studies Completed	<ul style="list-style-type: none"> ❖ Dr. Hutchinson noted that Hutchinson Environmental Sciences Limited completed the Assimilative Capacity Study (ACS), Phosphorus Budget and characterization of baseline conditions in the applicable downstream watercourses. ❖ Dr. Hutchinson also noted that a detailed phosphorus loading analysis has been completed in the ACS and Phosphorus Budget are posted on the Township's website and will form part of the ESR. ❖ Mr. Mullan noted the Wastewater Treatment Plant will have Membrane Filters which are recognized as the "best available technology" for wastewater treatment by the MOECC. ❖ Dr. Hutchinson noted that the Phosphorus Budget shows a net reduction in phosphorus from the Pre-Development to Post Development stormwater water flows, with the use of LID's, but after accounting for the new phosphorus load from the Wastewater Treatment Plant, a small annual increase of 66 kg exists, which (conservatively) represents less than 0.2% of the current phosphorus load flowing through the Minesing Wetland on an annual basis. ❖ Mr. Mullan noted that the Midhurst Developers Group are committed to working with the NVCA to achieving a net-zero increase in phosphorus, if required. ❖ Dr. Hutchinson also noted Currently there is approximately 3,800 kg of phosphorus moving through Willow Creek each year and approximately 40,000 kg moving through the Minesing Wetland each year.

Item	Description	Action/Notes
5	Concerns	<ul style="list-style-type: none"> ⊗ Mr. French noted that there are problems with Low Impact Development (LID) measures situated on private property such as changes in ownership, lack of maintenance and asked which ones can be managed and what cannot? <ul style="list-style-type: none"> ➤ Mr. Mullan noted that most of the LID's would be placed on Municipal property, such that they can be maintained. ➤ Mr. Hibberd noted that it is important that the LID's be placed on Municipal property and that they be maintained to ensure the long-term sustainability of the benefits. ⊗ Mr. French asked if there are tipping points for phosphorus in Willow Creek and the Minesing Wetland? <ul style="list-style-type: none"> ➤ Mr. Switzer responded that the net-zero increase in phosphorus was proposed by NVCA to avoid having to complete extensive and detailed studies on Willow Creek and the Minesing Wetland. ⊗ Mr. French asked if the discharge of effluent from Wastewater Treatment Plant into a small watercourse is a concern to the NVCA? <ul style="list-style-type: none"> ➤ Mr Switzer noted it's not unusual and that in other areas such as Shelburne, Colgan and Tottenham, the Wastewater Treatment Plants discharge into small watercourses. ➤ Mr Switzer also noted that the proposed increase in phosphorus discharge of 66 kg/yr, would need to be reduced to zero as required by the Minutes of Settlement. Further that the intent was to make best efforts to do this without offsetting. ⊗ Mr. Mullan noted that the technology being proposed within the Wastewater Treatment Plant is the "Best Available Technology" and that all opportunities for LID's will be utilized throughout the Midhurst Secondary Plan; therefore, best efforts are being taken to achieve the net zero increase. ⊗ Mr. Hibberd requested that language should be included in the ESR linking the Class EA to the Overall Drainage Plan and acknowledging the net zero increase in phosphorus requirement. ⊗ Mr. Hibberd also noted that the NVCA would like to see the ESR to be able to comment and ensure that the issues are being addressed.
6	Scheduling	<ul style="list-style-type: none"> ⊗ Further to the questions relating to the schedule for the Class EA, Overall Drainage Plan and the Subdivision construction Mr. Mullan identified the following anticipated timing: <u>Class EA</u> <ul style="list-style-type: none"> ➤ Following the Oct 18 2016 Public Information Centre (PIC) associated with the Class EA formal response comments have recently been issued by Ainley;

Item	Description	Action/Notes
6	Scheduling	<ul style="list-style-type: none"> ➤ The Draft Environmental Study Report (ESR) is to be submitted on late March to the Class EA Steering Committee; ➤ The Class EA Steering Committee and Council (In Camera) will meet to review and discuss the Draft ESR; ➤ Following the Steering Committee meeting the Draft ESR will be submitted to the Ministry of Environment and Climate Change (MOECC) to receive their comments. The MOECC will likely take 4 to 5 weeks to review and provide comments back to the Township. ➤ Finalization and publication of the ESR for the 30-day public review period in June. <p><u>Overall Drainage Plan</u></p> <ul style="list-style-type: none"> ➤ Ainley, SCS and Crozier are continuing to work on the Overall Drainage Plan including the 25 mm infiltration target, Low Impact Development (LID) requirements throughout 2017. ➤ In conjunction with preparation of the various sub-reports, meetings will be coordinated with the NVCA to ensure they are on board with the alternatives to be presented. ➤ The target for the completion of the Overall Drainage Plan is the end of 2017. <p><u>Subdivision Development</u></p> <ul style="list-style-type: none"> ➤ Ongoing review and signoff of the Draft Plans conditions through 2017 & 2018 associated with the various subdivisions within the Midhurst Secondary Plan. ➤ The Midhurst Development Group target is to break ground in 2019-2020 but there is a lot of work to be done before that such as clearing of Draft Plan conditions, detailed designs, etc. <ul style="list-style-type: none"> ⊗ Mr. French noted that the Developers should not be dictating the timeframe. There should be a comfortable timeframe so that the experts can work and do a good job. ⊗ It was agreed that J. Mullan would to prepare and circulate a GANTT Chart showing timelines for the completion of the Overall Drainage Plan; ⊗ Mr. Mullan reiterated that the Environmental Study Report (ESR) for the Class EA can move forward independently of the Overall Drainage Plan. ⊗ Mr. Mullan further noted that all the requirements of the NVCA Minutes of Settlement must be resolved/cleared before the Development proceeds.

Item	Description	Action/Notes
		<ul style="list-style-type: none"> ❖ Mr. Brindley noted the Township may need to hire a dedicated Project Manager to manage, facilitate and oversee the approvals and construction of the Midhurst Secondary Plan. ❖ Mr. Mullan noted that the Town of Innisfil hired a dedicated Project Manager for the Big Bay Point Development.
7	Effluent Treatment and Phosphorus Offsets	<ul style="list-style-type: none"> ❖ Dr. Hutchinson noted that the effluent objectives and any requirement for Phosphorus offsetting would be required/regulated via MOECC's Environmental Compliance Approval (ECA) for the Wastewater Treatment Plant, similar to the recent case in Tottenham. ❖ Mr. Mullan stated that, in the Tottenham case, an expansion to the Wastewater Treatment Plant which was necessary to accommodate new growth was going to increase the amount of phosphorous being discharged to Beeton Creek. Therefore, the local Developers were required by MOECC to provide monies to the NVCA for the implementation of a phosphorous offsetting program. ❖ Mr. Hibberd noted there are challenges associated with phosphorus offset programs particularly relating to ones that are not under Municipal or Agency control, to ensure their long term sustainability. ❖ Dr. Hutchinson noted that in lieu of spending additional "significant monies" on the additional technologies at the Wastewater Treatment Plant for little to no reduction in Phosphorus being discharged, it could provide a significantly greater environmental benefit to Willow Creek and Minesing Wetlands, relating to phosphorus reduction, by undertaking offsetting improvements within in the watershed. ❖ Dr. Hutchinson further noted that a report has previously been completed by Greenland Consulting, that identified significant phosphorus offsetting opportunities within the Willow Creek and other local watersheds. ❖ Dr. Hutchinson noted that MOECC has set offsetting ratios (usually 2:1) for other projects that are implemented through a Director's Deviation as part of the Environmental Compliance Approval (ECA) for the Wastewater Treatment Plant. ❖ Mr. Switzer noted that, in the South Nation (outside Ottawa) phosphorus offset example the funding is provided year after year for stewardship which ensures ongoing process with a variety of different stakeholders. Further in the Tottenham case the offsets were made through a one-time improvement of the Municipal Stormwater Management facilities; ❖ Dr. Hutchinson further noted that each septic system associated with existing homes, within 300m of Willow Creek, discharge approximately 2kg of phosphorus, per house to the creek each year. Therefore, if a number of existing homes were disconnected from their septic system and connected to the Wastewater Treatment Plant, there could be

Item	Description	Action/Notes
		<p>significant reductions in phosphorus being discharged to the watershed.</p> <ul style="list-style-type: none"> ☼ Mr French noted that Council has clearly stated that existing residents will not be required to connect to the Wastewater Treatment Plant, but if the Developers Group wanted to explore paying for such then it should be reviewed. ☼ It was acknowledged by Mr. Hibberd that this type of offsetting would be looked upon favourably by the NVCA as it is sustainable in the long term i.e. there is no chance that the improvement can be reversed in the future. ☼ It was noted that this type of phosphorus offsetting opportunity should be investigated further.
8	Monitoring	<ul style="list-style-type: none"> ☼ Mr. French asked how will monitoring assess that the ongoing phosphorus load target is being met and what would happen if issues arise? <ul style="list-style-type: none"> ➤ Dr. Hutchinson noted that Hutchinson Environmental has completed substantial baseline monitoring of water quality and aquatic biota in creeks that will receive treated effluent and stormwater and that this baseline information is to be used to compare against any future changes. ➤ Dr. Hutchinson further noted that an Adaptive Monitoring and Management Plan would be developed as part of the Overall Stormwater Plan. ➤ Mr. Mullan noted that if issues are documented by the Adaptive Monitoring and Management Plan then future development approvals could be withheld until the necessary corrective measures are put in place.

Adjournment

The meeting was adjourned at approximately 4:00pm.

Any errors and/or omissions from these Meeting Notes should be reported to the undersigned as soon as possible.

Notes prepared by Brent Parsons and subsequently finalized by:



J. A. Mullan, P.Eng.
President & CEO

APPENDIX 'C'

Minutes of Residents Liaison Meetings



CONSULTING
ENGINEERS
PLANNERS

MINUTES (2nd Revision)

Ainley & Associates Limited
280 Pretty River Parkway, Collingwood, ON, L9Y 4J5
Tel: (705) 445-3451 ▪ Fax: (705) 445-0968
E-mail: collingwood@ainleygroup.com

PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Thursday, Mar. 05, 2015**

LOCATION: Township Offices

TIME: 6:30pm

ATTENDEES:

Mayor Bill French	-	Township of Springwater
Deputy Mayor Don Allen	-	Township of Springwater
Councillor Sandy McConkey	-	Township of Springwater
Robert Brindley	-	Township of Springwater
Mario Giampietri	-	Geranium Corporation
David Strachan	-	Residents Representatives
Robert Wright	-	Residents Representatives
Gerald Scanlan	-	Residents Representatives
Regan Frankcom	-	Residents Representatives
Joe Mullan	-	Ainley Group

UNABLE TO ATTEND

Councillor Jack Hanna	-	Township of Springwater
Tiziano Zaghi	-	Residents Representatives

PURPOSE: Resident Liaison Group Meeting

1. Introductions

Ainley welcomed everyone to the meeting and asked everyone to introduce themselves.

2. General Review and Update

Ainley reported the following key points as a general update since the last Resident Liaison Group Meeting held in 2014:

A presentation to Council on the background and status of the Class EA study, including a public question and answer session, was made on January 7, 2015. The presentation was well received by both the new Council and members of the public in attendance. The public was encouraged to contact the Township and/or Ainley should they have any further questions or concerns as the Study moves forward.

Following the January 7, 2015 Council presentation, Ainley received a few emails from interested members of the community requesting clarification and information on site specific questions. Those inquiries have been responded to.

It was noted the Township received two letters (dated December 15, 2014 and January 13,

2015) from Ecojustice, Counsel for the Midhurst Ratepayers Association (MRA). A response to these letters was sent to Ecojustice by the Township's Solicitor on January 27, 2015.

The Township has also received a follow up letter from Ecojustice dated February 20, 2015. A response to this letter will be issued by the Township's Solicitor within the next few days.

The Township noted that dialogue with the MRA continues to take place. It was further noted the outcome of the last meeting with the MRA was positive and it was felt that the letters from Ecojustice were somewhat counterproductive to the process.

It was noted that during the May 20, 2014 Steering Committee meeting there was a discussion around the need for the extension of Ann Street, but that is not referenced in the Minutes. Therefore, it was agreed that the Minutes, for this meeting would acknowledge the need for the extension of Ann Street to be further analyzed during the Phase 3 & 4 of the EA.

Action by Ainley

3. Technical Update - Transportation

Ainley provided the following update on the technical transportation studies:

3.1 Hwy 400/Pooles Road Partial Interchange

A preliminary Technical Needs and Justification report, including detailed traffic modeling data was prepared and submitted to MTO in support of the proposed partial interchange.

The partial interchange is recommended in order to provide access to/from Hwy 400 for Midhurst traffic destined for Barrie and/or Toronto. The interchange will alleviate congestion, capacity and level of service deficiencies on existing Twp. arterial and collector roads, including those that extend into the City of Barrie (i.e. Bayfield Street and St. Vincent Street).

MTO has reviewed the technical report and provided a response outlining a number of concerns/questions relating to the need for the partial interchange. Ainley is currently completing additional traffic analysis and preparing a detailed response to the MTO comments and will be following up with MTO shortly. The updated report will include an analysis for the Phase 1 build out in conjunction with the Ultimate build out of Midhurst.

To date the MTO has not given permission for the Pooles Road interchange to proceed, and the outcome of the follow up discussions with MTO will be presented at a future Meeting.

Action by Ainley

It was noted that if the partial interchange at Pooles was not permitted by MTO that we would have to evaluate other alternatives such as widening of St Vincent St to accommodate the proposed traffic and/or further use of the Forbes Road Interchange. It was also noted that the existing residents use the Forbes Road interchange when going south of Barrie, although it is slightly longer. The new data will also assist in narrowing down the trigger point for when the interchange will be developed.

3.2 Craig Road Extension

A number of design concepts, including alternative horizontal alignments and vertical profiles have been developed for the extension of Craig Road from Russell Road to County Road 27.

Each design option has unique and common challenges, the most significant of which is the steep topography at the west end prior to connecting to County Road 27. In this area, the terrain drops between 30 to 40 metres. Each design option will require acquisition of property to accommodate sections of the preferred new road alignment which are located outside of the existing unopened road allowance.

Further details on the alternatives including the evaluation process and selection of a preliminary preferred design concept will be presented at a future Meeting.

Action by Ainley

A discussion ensued regarding the timing of the Craig Road extension and it was noted that due to traffic concerns and the need to advance the construction of this important road, the previous Council determined that Craig Road would be included in the Town Wide Development Charge so that the road could be built at the beginning of the development of Midhurst. Therefore, the Township have full control over when the road gets built.

It was noted by Mr. Giampietri that since the Craig Road bypass was never included in the original Midhurst Secondary Plan when passed, the Developers contend that they are not responsible for the cost of this. It was further noted by Mr. Giampietri that although the Developers were not in favour of Craig Road Extension being included in the Development Charges, they did not oppose it, as they wanted to be cooperative with the municipality.

There was a discussion regarding the estimated costs of the Craig Road Extension and it was generally agreed that the \$5.8 million currently identified within the Township's Development Charges Study would be low, due to the constraints and challenges in the area. However it was also noted that this value was generated a number of years ago, without the benefit of background information and that it can be updated with a more accurate value when the Township updates the Development Charges in 2015/16.

There was a discussion regarding the Craig Road Extension and it was asked if it would be prudent to construct the ultimate width of road initially, including all left turn lanes and traffic signals as opposed to constructing an initial road and then coming back a few years later to put in left and right turn lanes, traffic signals, etc. In response to this it was noted that it is possible to do this; however not very common. It was also noted that given the Township will be in full control over the construction schedule it will be their decision should they wish to do this.

Action by Ainley/Township

In response to a question from Mr. Scanlan wanting to know if the Township could stop the Midhurst Secondary Plan from starting until such time as the Craig Road Extension was constructed, Mr. Brindley noted he would get back to him.

3.3 Roundabouts

The Technical Report on the viability of roundabouts, as an alternative to conventional traffic signals, at each major intersection that was identified during Phase 1 & 2 as requiring operational improvements to accommodate future traffic conditions, is on-going.

From the preliminary findings a few of the 11 site locations are good candidates for a roundabout, however, further analysis is required. Locations deemed unsuitable are due to geometric design impacts on the surrounding land uses, including private property and

environmentally sensitive features.

The results of the Technical Report, including roundabout location and configuration recommendations will be presented at a future Meeting.

Action by Ainley

3.4 St. Vincent Street Extension

The extension of St. Vincent Street, which is approximately 300 metres, between Park Trail and Belmont Cresc., through the existing unopened municipal road allowance, is required to improve north – south traffic flow.

Design concepts being considered include 2 lane rural cross section and 2 lane urban cross section, complete with sidewalks.

Due to the hilly topography, the road profile will be relatively steep, but within acceptable design standards. Grading of the road platform and fill embankments will generally fit within the existing road allowance (which varies from 34 m to 60 m). Any minor grading encroachment beyond the existing right-of-way will be mitigated using retaining walls and/or toe walls.

The evaluation and selection of a preliminary preferred design concept will be presented at the next Steering Committee Meeting.

Action by Ainley

A question was asked about the timing for the St Vincent Street Extension and it was noted that we do not have that information yet but that this would be analyzed as part of Phase 3 & 4 and presented at a future meeting. It was further noted that St Vincent Street Extension is a Schedule “B” Class EA project and therefore does need to be included in with the Phase 3 & 4 (Schedule “C”) projects, however given it provides a key link within the community, Phase 3 & 4 will review and determine the appropriate timing for the proposed construction of St Vincent Street.

Action by Ainley

Mr. Scanlan noted that in light of the increased pedestrian and cycling traffic along St. Vincent Street into the City of Barrie, we should be looking at sidewalks and bike lanes into the City along St. Vincent Street. In response, Mr. Mullan noted that he would investigate this and report back to the committee.

3.5 Active Transportation (Trails and Bike Lanes)

Expansion of existing trail systems within Midhurst, is anticipated to be completed over time in accordance with the County of Simcoe Trails Management Plan (TMP) and the Midhurst Secondary Plan.

Provisions for trail connections from the three development communities to the existing / future external trail network are included in the draft plan of subdivisions through the dedicated ‘green field’ blocks.

Construction of the new development communities will include trail connections to the existing and / or future external trail system. Development of the trail network outside of the

development community boundaries will be considered during the planning and design of future municipal road rehabilitation/reconstruction projects. The external trails may be designed as on-road and/or off-road facilities depending on available property and other environmental constraints.

Further study is required to examine opportunities and constraints associated with construction of trails and bike lanes within existing municipal road allowances.

Options for bike traffic and cyclist, including a 1.8 m wide bike lane adjacent to the curb line, sharing of the vehicle driving lane and/or an off road multi-use trail, will be developed further. Design standards for bike lanes will conform to the Ontario Traffic Manual Book 18. Further details, including preliminary recommendations, will be presented at a future Meeting.

Action by Ainley

The Township noted the importance of the local snowmobile trails to the Midhurst residents. Ainley will contact the snowmobile clubs and associations to confirm the location of the local snowmobile trails and review potential impacts and/or opportunities to connect the future active transportation trail system with the existing snowmobile trail network.

Action by Ainley

The Township noted their Trails Master Plan (TMP) is currently being updated. Following the meeting the Township will confirm when the updated TMP will be completed and will advise Ainley accordingly so this new background information can be considered during the completion of the EA study.

Action by Township

3.6 Transit

The existing City of Barrie transit (bus) routes were reviewed in conjunction with an assessment of opportunities to provide bus service to Midhurst residents.

Opportunities exist to provide a bus service connection to City of Barrie primary routes, those being Bayfield Street and St. Vincent Street. Such a bus service initiative could be a Township operated system and/or a joint venture Agreement between the Township and the City of Barrie for the extension of the existing Barrie transit service. Notwithstanding, a detailed transit study would need to be completed in the future to confirm ridership, economic feasibility, routes and service criteria. Moving forward with such a study would be at the discretion of the Township Council.

3.7 Traffic Calming

A discussion was held regarding the ability to introduce traffic calming measures in Midhurst to slow traffic going through the community. It was confirmed that traffic calming can be used and a test project is already underway in Centre Vespra. In response to a question from Mr. Scanlan regarding the Township's ability to impose traffic calming measures on existing roads such as Poles, Doran, St. Vincent, Finley Mill, Carson etc., Mr. Brindley noted that the Township has the ability to install traffic calming measures on whatever roads Council deems them appropriate.

It was also noted that the Public Works Department will also be completing a Traffic Calming Study this year for the Township.

4. Technical Update - Water

To accommodate full build out of the Midhurst Secondary Plan, a municipal water supply, which is collectively capable of providing approximately 200 litres per second (L/s), is required. Ainley reported the drilling program has been completed but that the preparation of the hydrogeological study is on-going. To date the Draft information is identifying four potential well sites, with a total of approximately 206 L/s as noted below:

- i) The Alliance property north of Doran Rd (with two 45L/s. wells);
- ii) The Coutts property south of Pooles Rd and east of Russell Rd (with two 20L/s wells);
- iii) The McColgen pit on Snow Valley Rd, east of Wilson Dr (with one 36L/s well);
- iv) The Snow Valley area, west of the ski resort (with two 20L/s wells);

Once the drilling and hydrogeological study is complete, Ainley will advance the evaluation of alternatives for the location of water treatment facilities, water storage reservoirs, pumping stations and trunk watermains and provide recommended design solutions, including staging plans and cost estimates.

Source water was also discussed and the fact that lands around each well needs to be protected. It was requested that the activation of wells for production be phased so that agricultural lands within the settlement area can be used for agriculture until such time as water is needed.

Action by Ainley

5. Technical Update - Wastewater

Ainley noted that the 7Q20 flow (the 7 day average low flow with an expected 20 year return period) of 460 L/s has been established for Willow Creek (at the proposed discharge point) based on 9 years of flow data and in consultation with MOE and NVCA. This flow rate is important as it is used to determine the effects of the effluent from the Wastewater Treatment Plant on Willow Creek.

Ainley also noted that NVCA have stipulated that there can be no cumulative net increase in Phosphorus loading within the downstream receiver (i.e. Willow Creek). Therefore, 'best available' treatment technology and filtration systems at the Wastewater Treatment Plant, in conjunction with the implementation of low impact development measures (LID) within the new developments, And possibly Offsetting within the watershed will be required in order to achieve the "no net increase" objective. Currently the wastewater effluent criteria for Phosphorus being proposed is 0.03 mg/L Design objective and 0.05mg/L Compliance limit.

Ainley reported the preparation of the technical study reports, including the Willow Creek Assimilative Capacity Study and Cumulative Assessment of Phosphorus Loading to Willow Creek, are on-going. Once these studies are completed, the evaluation of design alternatives for waste water treatment facilities, pumping stations, trunk collection systems and trunk forcemains will be carried out and recommended design solutions, along with staging plans and cost estimates, will be presented at a future meeting.

Action by Ainley

6. **Next Steps**

Ainley provided the following summary of the next steps in the EA study:

Phase 3

- Continue preparing and finalizing the background Technical Reports and the evaluations of all Water, Waste Water and Transportation Design Alternatives;
- Arrange meetings with the various Agencies, including MOECC, MTO, NVCA City of Barrie and County of Simcoe to discuss the reports;
- Host the Phase 3 Public Information Centre to present the findings of the Technical Reports, design concepts, evaluation criteria, selection of the preliminary preferred design concepts for Water, Waste Water and Transportation, receive comments and respond to questions;
- Complete the evaluation of all Alternatives, taking into consideration all comments received from the Agencies and / or public; complete any necessary amendments to the Technical Reports and finalizing the selection of the preferred design concepts for Water, Waste Water and Transportation in consultation with the Township and Steering Committee.

Phase 4

- Prepare draft Environmental Study Report (ESR) to document planning and consultation process;
- Submit draft ESR to MOECC for review;
- Meet with MOECC to review comments on draft ESR;
- Finalize ESR in consultation with Township and Steering Committee;
- Post ESR on public record for mandatory 30 day public review period;
- Arrange Public Open House during review period to provide opportunity for public to review ESR and ask questions;
- Respond to comments received during review period; and
- Subject to no Part II Order requests, finalize ESR and submit to Township and MOECC along with Environmental Clearance letter

7. **Other Business**

Township noted a Fire Response Study is being completed which may bring forward a recommendation to extend Anne Street to Snow Valley Road as an alternative to an emergency service connection through the future subdivision. The outcome and implications of this new background report, once completed, will be considered during the completion of the EA study.

8. **Communication**

The group discussed ensuring that the residents and the MRA be better informed of the status of the applications. The use of the tax bill as a means of getting people to sign up their emails for the distribution of information was discussed. The previous use of print media was reviewed. The group also touched on the use of direct mail.

Post Meeting Note: It was confirmed that requests to subscribe to Midhurst information updates were mailed out with the June 2012 and June 2013 tax bills.

9. **Belmont Crescent and Midves Court**

In response to a question from Mr. Scanlan regarding why the Township installed storm sewers and sidewalks along Belmont Crescent in 2014 as opposed to only repaving it, Mr. Brindley noted as Mr. Sokach (former Director of Public Works) is no longer with the Township he would have to investigate the matter and get back to him.

There was also a question regarding Midves Court why it was not built to an urban standard and it was noted that the legacy portion of Midves was constructed at an earlier time when a semi-urban standard was used. Constructing the extension of the cul-de-sac to an urban standard would mean that it would just outlet to the open ditch anyways after the "bulb" as there would not be justification for the developer to rebuild the entire street. There are also no services on Midves so there is nothing to tap into (water, sewer, storm sewer). The owner reviewed these factors with the Planning Committee and the Planning Committee determined that an urban standard would not be required.

10. Next Meeting

The next Resident Liaison Group Meeting is scheduled for Thursday, May 7, 2015 starting at 6:30 p.m. at the Township Office.

Any errors and/or omissions from these minutes should be reported to the undersigned as soon as possible.

11. Adjournment

8:30pm

Minutes prepared by:



J. A. Mullan
Ainley & Associates Limited

S:\113027\Minutes & Agendas\Minutes\Resident Liaison Group\Midhurst EA - Resident Liaison Group Mtg Minutes (Mar 5 2015).docx

PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Thursday; May 7, 2015**

LOCATION: Township Office

TIME: 6:30pm

INVITEES:

Mayor Bill French	-	Township of Springwater
Deputy Mayor Don Allen	-	Township of Springwater
Councillor Sandy McConkey	-	Township of Springwater
Councillor Jack Hanna	-	Township of Springwater
Councillor Sandy McConkey	-	Township of Springwater
Robert Brindley	-	Township of Springwater
Mark Archer	-	Township of Springwater
Shauna Dudding	-	Geranium Corporation
Alex Troop	-	Alliance Homes
Tiziano Zaghi	-	Residents Representatives
David Strachan	-	Residents Representatives
Robert Wright	-	Residents Representatives
Gerald Scanlan	-	Residents Representatives
Regan Frankcom	-	Residents Representatives
Mike Neumann	-	Ainley Group
Joe Mullan	-	Ainley Group

PURPOSE: Resident Liaison Group Meeting

1. Approval of Minutes of March 5, 2015 Steering Committee Meeting

No additional comments were provided on the Revised Minutes and therefore they are approved as printed.

Action by Ainley

2. General Updates since last Resident Liaison Group Meeting (Mar 5, 2015)

It was noted that there has been no general updates since the last meeting.

3. Technical Updates since last Resident Liaison Group Meeting (Mar 5, 2015)

3.1 Transportation

Pooles Road Partial Interchange

- a. It was noted that we continue to prepare an Updated Draft Technical Report & Modelling RE: Highway 400/Pooles Road Interchange Needs and Justification for submission to the Ministry of Transportation (MTO).

It was also noted that although the updated report is not complete yet, the preliminary analysis indicate that the proposed interchange is not needed for the Phase 1 (300 ha) developments, but that it is required for the development of the full Midhurst Secondary Plan.

Action by Ainley

Craig Road Extension

- b. It was noted that we have identified four (4) possible alternatives for the alignment of Craig Road Extension and that the analysis of these alternatives is still ongoing. It was also noted that all alternatives will require the purchase of property from the end of the existing unopened road allowance to County Rd 27.

Mayor French noted that Craig Road Extension should not be part of the Township wide Development Charges, but instead should be an area specific Development Charge for the developments within the Midhurst Secondary Plan.

It was noted that the funding for Craig Road Extension is within the Township Wide Development Charges and further to a question regarding possible funding mechanisms it was noted that the options include:

- (i) funds from within the Township's DC account,
- (ii) front ending financing by the Developers in conjunction with the DC credits;
- (iii) debenturing by the Township and repayment by DC's when collected.

After some further discussion about the need for Craig Road Extension and if it would provide a benefit to existing community or not, it was acknowledged that the issue of whether Craig Road Extension should be in a Township Wide DC or an Area specific DC is not an issue that needs to be resolved within the Class EA process.

It was also noted that two large vacant properties fronting on to County Rd 27 are currently for sale and that two of the four alternatives being considered run through these properties.

In response to a question about how common it is for a major road not to be constructed, because of challenges either environmental or otherwise it was noted that it is not very common as usually the challenges and/or concerns can be mitigated.

It was also noted that during Phase 3 & 4, we would develop detailed a cost estimates for all the proposed alternatives which would also include costs for the purchase of required properties.

Action by Ainley/Township

Roundabouts

- c. It was noted that the preparation of the Technical Report regarding the viability of Roundabouts is ongoing and that the report is analyzing a total of 11 intersections. These intersections which were identified in the Phase 1 & 2 Class EA Report are external to the proposed development areas and require intersections improvements.

Action by Ainley

In response to a question about roundabouts and if they provide traffic calming, it was noted that the primary reason for installing roundabouts is to reduce the number of "conflict points" and thereby the potential for serious accidents; however it was acknowledged that they also provide a form of traffic calming.

In response to a question about how roundabouts could be proposed in locations where other levels of government (MTO and/or County) have jurisdiction, it was noted that in such cases the proposed alternatives would be discussed in detail with the MTO and/or County and that the final decision would be with the level of government that has jurisdiction over the intersection.

It was noted that if roundabouts are proposed on arterial roads that the radii of the roundabout must be large enough to permit large vehicles to safely use them.

St Vincent Street Extension

- d. It was asked why St Vincent Street Extension was part of this Phase 3 & 4 EA, as this project was identified as a Schedule “B” Class EA in the 2009 Master Plan. In response it was acknowledged that this project was a Schedule “B” project; however it was noted that the timing of this connection could be important to the overall community. Therefore; staging analysis will be completed in Phase 3 & 4 to identify when St. Vincent Street connection should be constructed.

In response to a question regarding the limits for construction of St. Vincent Street it was noted that within the Phase 1 & 2 it was identified that St. Vincent Street would be reconstructed between Belmont Crescent and City of Barrie limits. It was further noted that the portion between Belmont and the community boundary would have an urban standard and the portion between the community boundary and the City of Barrie limits would have a rural section.

In response to a question regarding the timing for the urbanization of the existing St. Vincent Street and the extension of St. Vincent Street, it was noted that these two components could either be completed together as one construction contract or separately as two independent construction contracts, noting that there would be advantages and dis-advantages to each.

It was further noted that both the urban and rural sections of St. Vincent Street, between Belmont Crescent and City of Barrie limits, would have a sidewalk or walking trail.

Action by Ainley/Township

Active Transportation (Trails & Bikes lanes)

- e. It was noted that the analysis of the existing and proposed active transportation options is ongoing.

Also, as noted earlier, the Active transportation alternatives being considered will include a sidewalk or trail along St. Vincent Street, to the City of Barrie limits.

Action by Ainley

Transit

- f. It was noted that the Phase 3 & 4 Class EA will ensure that the main arterial and/or collector road systems can accommodate future transit. However, a detailed transit study, which is outside the scope of the Class EA, would need to be completed in the future before the implementation of a transit system to confirm ridership, economic feasibility, routes etc.

It was asked if the types of transit being considered within the analysis was full-size transit buses and it was noted that yes they are. It was also asked if there is any

maximum distance between transit pickup points and core residential areas. In response it was noted that we do not believe there are any guidelines on the maximum distance, as it would normally be a function of ridership and available finances; however Ainley will check the accessibility standards act.

Action by Ainley

After the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre;

3.2 Water

- a. It was noted that development of the overall Midhurst Secondary Plan will require approximately 200 L/s of new Municipal water and that the preliminary hydrological investigation has identified four well sites with up to 6 wells which will provide approximately 206L/s capacity. However; we are still awaiting the submission of the Hydrogeological Report confirming these details.
- b. It was noted that subsequent to the submission of the Hydrological Report, we will be re-evaluating alternatives for the location(s) for the Water Treatment Facility, Storage Reservoirs, Pumping Stations and Trunk Watermains.

In particular, it was also noted that in Phase 1 & 2 we had identified the preferred alternative as being one Water Treatment Plant located in the Doran Road area, however this was based upon all the proposed municipal wells being on the east side of Midhurst. Now that we will be having municipal wells on each side of Midhurst we will be re-evaluating that decision to determine if it is better to have two Water Treatment Plants (one in the East and one in the West), which could reduce the life cycle costs of the facilities, by avoiding the double pumping of water.

After the completion of these evaluations, Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre for:

- Water Treatment Facility (including the treatment process).
- Storage Reservoirs & Water Pumping Stations;
- Trunk Watermains (including specific routes).

3.3 Wastewater

- a. It was noted that we are still awaiting will the submission of the Report confirming the 7Q20 flow (the 7 day average low flow with an expected 20 year return period) for Willow Creek, in the vicinity of Highway 26;
- b. Preparation of the Technical Reports regarding the Design Alternatives for the following items are ongoing
 - i. Wastewater Treatment Plant (including proposed treatment processes and effluent discharge criteria).
 - ii. Willow Creek - Assimilative Capacity Study;
 - iii. Pumping Stations, Trunk Collection System and Trunk Forcemains;
 - iv. Cumulative Assessment of Phosphorous Loading to the Willow Creek. This is being prepared in conjunction with the Nottawasaga Valley Conservation Authority (NVCA) and includes an assessment of the Pre & Post Phosphorous

loading of the stormwater runoff from the proposed developments.

The question was asked about why the Cumulative Assessment of Phosphorous Loading Report was part of the Class EA process. In response it was noted that although this is a requirement of the Midhurst Secondary Plan, the report will be very beneficial to the Class EA process in proving that the development of the Midhurst Secondary Plan will not have a detrimental effect on Willow Creek. In particular it was noted that this analysis will look at the proposed lands in a Pre-Development condition versus Post-Development condition along with the proposed loads from the Wastewater Treatment Plant. There was a question regarding the science behind this analysis and it was noted that the model being used was developed and approved by the Province specifically for the Lake Simcoe Protection Plan. In addition, the NVCA have taken the model used in the Lake Simcoe Protection Plan and further refined it for use within the NVCA watershed.

There was also a question about the possible need for phosphorous offsetting and how this could be achieved. In response it was noted that there are various methods for achieving offsetting within the rural and urban environments. It was also noted that the NVCA is currently working with local community groups in Beeton, to undertake a cleanup of the local creek, which will have a significant benefit to the local environment.

After the completion of these Reports all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by Ainley

4. Future Schedule (Main Points Only)

Phase 3

- Continue preparing and finalizing the background Technical Reports and the evaluations of all Water, Wastewater & Transportation Alternatives;
- Arrange meetings with the various Agencies including the MOECC, MTO, NVCA, City of Barrie & County of Simcoe to discuss the Class EA;
- Host the Phase 3 Public Information Centre. A formal Notice would be advertised in the local newspapers and posted on the Township website, advising of the Phase 3 Public Information Centre.
- At this Public Information Centre, the Project Team will present the findings of the Phase 3 including the evaluation criteria along with the Recommended Water, Wastewater & Transportation Alternatives.
- Continue with the evaluations of all Alternatives, taking into consideration all comments received from the Agencies and/or the Public and any necessary adjustments to the Technical reports will be made;

Phase 4

- Prepare "Draft" Environmental Study Report (ESR) and submit to the MOECC for internal review. In conjunction with this a meeting would be arranged with MOECC to review and discuss any comments on "Draft" ESR;
- After addressing any comments from the MOECC, publish the "Notice of Completion & Open House No. 2." This Notice of Completion initiates the formal 30 Day Public

Review Period;

- Arrange Open House No. 2; whereby the Public and interested parties will be invited to review the ESR and provide written comments;
- Review, assess and respond to any written comments received during the formal 30 day Review Period;
- Finalize the Environmental Study Report and submit to the Township, along with issuing a Memo to MOECC.

A brief overview of the attached Gantt chart was provided and it was noted that the dates within this Gantt chart are approximately only and if any of the completion dates for initial reports get delayed then other items would also be delayed. It was also noted that the Gantt chart shows Steering Committee meetings in 2016; however these have not been formally finalized yet and as such are approximately only.

Action by Ainley

5. **Other Business**

Canada Post

A question was asked about where Canada Post mailboxes would be located and it was noted that this is a detailed engineering design matter which would be coordinated between the Township, Canada Post and the Developer at that time. It was also noted that these discussions will also include what type and/or size of community mailboxes should be installed.

Mr. Scanlon raised the following questions:

Relating to Craig Road By-Pass

Question: Since the cost of the Craig Road bypass is likely to be significantly higher than the \$5.8 million currently budgeted and since it is the stated goal of the Town to build this before Neighbourhood Two (2) Doran Road home construction starts and DC charges start to flow, can staff please provide an upper budget limit for said project including construction and incidentals so that this amount can be forwarded to the budget committee and included in the High Growth scenario of the Long Range Financial Study.

Answer: During the Phase 3 & 4 of the Class EA process, we will be preparing updated Construction Estimates for all new infrastructure including Craig Road Extension.

Related to Possible Widen of Roadways

Question: Please confirm that if we are forced to convert any street to 3 lanes because of heavy traffic flow that parking on that street will be prohibited?

Answer: It is unlikely that parking would be permitted on a 3 lane street; however parking is controlled by the Township bylaws, which are set by Council.

Long Range Financial Study

Relating to the Belmont Road Reconstruction:

Question: Please confirm that the cost of the Belmont urban reconstruction was nearly 9.5 times as expensive as normal Town Street repaving?

Question: Please confirm that in the original quotes provided by C.C. Tatham that the cost

saving of not having to do annual maintenance on the ditches was given as a rational to install the storm sewers?

Question: What was the prior annual ditch maintenance expense for this reconstructed roadway?

Question: Was the cost of sidewalk snow removal and maintenance of sidewalks, roadways and sewers as well as capital depreciation for each ever worked into the calculations of the potential cost savings?

Question: If yes please provide the calculations.

Question: Please provide the Town Staff rational for the Belmont Road Urban reconstruction?

Answer: The above-noted questions are not related to the Midhurst Class EA and therefore would be responded to directly by Township staff.

Action by Township

Relating to Midhurst Village Roadways including crossover roadways:

Question: Will the issue of increased MSP traffic crossover from Finlay Mill to St Vincent, Silverwood to Frid to St Vincent, Park Trail to Waite to St Vincent, Waite and Belmont from St Vincent to Finlay Mill and Spence from St Vincent to Hwy 26 be studied as part of the Environmental Assessment 3 and 4?

Answer: The July 2009 Phase 1 & 2 Master Plan analyzed all traffic for the proposed Midhurst Secondary Plan and identified all improvements that need to be made to the existing streets.

Question: What is the Towns anticipated cost for urban reconstruction (as reconstructed on Belmont) on a per km basis?

Answer: Information to be provided by the Township.

Question: What is the cost of adding a second sidewalk on a street like Belmont on a per km basis?

Answer: Information to be provided by the Township.

Question: Can the urban reconstruction of these roadways be covered under DC charges?

Answer: Response to be provided by the Township.

Question: Since there are sections of Pooles Road not included in the 2014 DC study list of Roadways to be upgraded at the Developers sole expense, have the Developers given a written undertaking to pay for the urban reconstruction with sidewalks on both side of all the roads where their sewers will run?

Answer: Response to be provided by the Township. However it was noted that as per the July 2009 Phase 1 & 2 Master Plan, Pooles Road is to be reconstructed, as part of the Midhurst Secondary Plan, between St. Vincent and Highway 400;

Question: Please provide this undertaking if it exists.

Answer: Response to be provided by the Township.

St Vincent traffic flow outside of Midhurst

Question: Please confirm that the Town has not measured pedestrian or bike traffic flow along St Vincent from the Midhurst boundary to the Barrie Boundary.

Answer: The Township have not measured pedestrian and/or bike traffic along St. Vincent

Street into the City of Barrie. However it was noted by one of the residents who regularly rides his bike into the City of Barrie, that very few people currently use this route.

Question: Can improvements to this section of roadway, specifically widening, adding lanes, providing sidewalks, dedicated bike lanes, and street lights be included in DC Charges?

Answer: St. Vincent Street between Belmont and the City of Barrie limits is to be reconstructed as part of the Midhurst Secondary Plan.

Pooles Road partial Interchange

Question: Please provide the full Technical Needs and Justification report submitted to the MTO in support of the proposed Pooles Road partial interchange, the comments and requests from the MTO including their concerns, and finally copies of what is to be submitted to the MTO before it is submitted to them.

Answer: After a brief discussion regarding this request it was agreed that the copy of the updated Needs and Justification Report when it is available would be provided to the Residents Group in conjunction with it being submitted to the Ministry of Transportation.

Traffic Volumes

Question: What would it cost for Ainley to do an actual meter reading for a two week period of time? Report to be delivered showing how many vehicles in 24 hours segments for each day in each direction for the full 14 days. Proposed location: (on Pooles between St Vincent and the west crossover of Idlewood at Pooles.)

Answer: Ainley agreed to provide a cost estimate to the Township for this; however the traffic counts and calculations that were completed as part of Phase 1 & 2 Master Plan were completed in accordance with Ministry of Transportation guidelines and requirements and therefore it was queried what benefit the requested traffic counts would provide. In response Mr. Scanlan responded that residents felt that the 1300 cars (identified within 2008 report) was high and that an overestimate would have a dramatic impact on the potential percentage increase of future traffic accidents.

6. Next Meeting

- a. Resident Liaison Group Meeting set for Thurs June 4, 2015 @ 6:30pm;

7. Adjournment

The meeting was adjourned at approximately 8:00pm

Minutes prepared and finalized by:



J. A. Mullan
Ainley & Associates Limited

PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Thursday July 2, 2015**

LOCATION: Township Office

TIME: 6:30pm

ATTENDEES:

Councillor Jack Hanna	-	Township of Springwater
Mark Archer	-	Township of Springwater
Alex Troop	-	Alliance Homes
Tiziano Zaghi	-	Resident Representative
David Strachan	-	Resident Representative
Robert Wright	-	Resident Representative
Gerald Scanlan	-	Resident Representative
Regan Frankcom	-	Resident Representative
Brad Kalus	-	Ainley Group
Joe Mullan	-	Ainley Group

UNABLE TO ATTEND: Mayor Bill French, Deputy Mayor Don Allen, Councillor Sandy McConkey, Robert Brindley, Shauna Dudding

PURPOSE: Resident Liaison Group Meeting

1. Approval of Revised Minutes of May 7, 2015 Resident Liaison Group Meeting

After a brief discussion of the follow up comments provided by the group and the subsequent amendments to the original minutes, the revised meeting minutes were approved as printed.

2. Non-Technical Updates since last Resident Liaison Group Meeting (May 7, 2015)

Mr. Mullan noted there were no non-technical updates to report to the group from the last meeting.

3. Technical Updates since last Resident Liaison Group Meeting (May 7, 2015)

3.1 Development Phasing & Staging Projections

Mr. Mullan provided an overview of the draft Development Phasing & Staging Projections which were developed based upon the Developer's "Draft" Phasing Plan dated May 2015 that was originally submitted as part of the OMB. Mr. Mullan noted these projections will be utilized to determine the proposed staging of the required Water, Wastewater & Transportation Infrastructure.

Mr. Mullan provided an overview of the lands that were Draft Plan Approved, with conditions, through the OMB, for development. These lands total approximately 300 ha.

Mr. Strachan noted the Township website includes maps and areas which total 350ha.'s for development. Mr. Mullan noted that he was not aware of that, but that that he will follow up with the Township Planning Department to make any corrections, if necessary.

Action by Ainley/ Township

Mr. Mullan noted that, at the earlier steering committee, a number of revisions were requested including the identification of 3,850 units as trigger point for determination of infrastructure needs, so that it would match the Planning with the Secondary Plan.

Mr. Mullan also noted that, as an outcome of the earlier steering committee, the development phasing map will be enhanced to include the existing built up areas in Midhurst. The resident group suggested that, for the benefit of the general public, additional colour enhancements to the development phasing plan should be considered. Mr. Mullan noted that he will explore ways of maximizing the clarity of the plan.

Action by Ainley

In response to a question from Mr. Zaghi, Mr. Mullan confirmed that infrastructure needs include improvements to existing roads, extension of existing roads, along with water and sanitary sewer services within the Municipal road ways.

Mr. Mullan advised that once the development plan has been updated and circulated to the steering committee for review and comment, a copy of the plan will be made available to the Resident Liaison Group.

Action by Ainley

3.2 Transportation

a. Pooles Road Partial Interchange

Mr. Mullan reported the Updated Technical Report & Modelling RE: Highway 400/Pooles Road Interchange Needs and Justification was recently completed and was submitted to the Ministry of Transportation (MTO) for review and comment earlier today.

Mr. Mullan noted the updated report confirms the proposed interchange is not needed for the Phase 1 (300 ha) developments, but that it is required for the development of the full Midhurst Secondary Plan.

Mr. Mullan advised that the Updated Technical Report will be circulated to the Steering Committee members for review, and then made available to the Resident Liaison Group and general Public after the next meeting

Action by Ainley

b. Craig Road Extension (including Forbes Road Connection)

Mr. Mullan reported there are no new updates to report since the last resident liaison group meeting as the analysis of the alternative alignments for Craig Road extension is ongoing.

Action by Ainley

c. **Roundabouts**

Mr. Mullan reported the technical analysis regarding the viability of Roundabouts is now complete. All of the 11 intersections that were identified in Phase 1 & 2 as requiring intersection improvements were analyzed to determine if a Roundabout would be viable having regard for local environmental constraints, property impacts, traffic operations and cost. The long list of intersection locations was short listed to 3 well suited locations and 2 moderately suited locations. The next step will involve a detailed evaluation and selection of a preliminary preferred intersection configuration for each location. A Technical Brief will then be prepared to summarize the approach, findings, conclusions and recommendations for improvements at each of the 11 intersections.

Mr. Mullan noted that at the steering committee meeting today, it was suggested by the group to solicit input from the Township Fire Department and Road Maintenance Department to obtain their thoughts on the challenges (or benefits) that roundabouts may present to their work operations.

Action by Ainley

In response to a question by Mr. Zaghi, Mr. Mullan noted that he is not aware of any studies that investigate and/or quantify the benefit of roundabouts from an air quality perspective. However, the general industry opinion is that there is a benefit through the reduction of emissions associated with less idling time and less starting and stopping movements.

d. **St Vincent Street Extension**

Mr. Mullan noted there were no new updates to report since the last resident liaison group meeting.

In response to a question from Councillor Hanna, Mr. Mullan advised that St. Vincent Street is anticipated to remain as a 2-lane road, with auxiliary left or right turn lanes provided at key intersections. The need to provide a continuous center turn median lane has not yet been determined.

Action by Ainley

e. **Active Transportation (Trails & Bikes lanes)**

Mr. Mullan noted there were no new updates to report since the last resident liaison group meeting.

Mr. Scanlan emphasised the importance of addressing pedestrian and bike traffic safety concerns, and to provide the proper infrastructure to safe guard public health and safety. Mr. Mullan noted the study is considering pedestrian and bike traffic safety measures and will be looking at options to providing sidewalks and bike lane/trails as part of the road improvement plans.

Action by Ainley

f. **Transit**

Mr. Mullan noted there were no new updates to report since the last resident liaison group meeting.

Mr. Wright expressed concern with the traffic improvement plan as it does not provide for new roads to accommodate future traffic conditions and congestion of existing roads due to new development traffic. Mr. Mullan noted the proposed extension of Craig Road from Russell Road to County Road 27 will reduce traffic demand on the existing roads through

Midhurst. Also, the comprehensive list of road improvement recommendations from the Phase 1 & 2 study, including widening of Wilson Drive to four lanes, extending St. Vincent Street south of Doran Road, implementing auxiliary turn lanes and/or roundabouts at key intersections, providing a new interchange on Hwy 400 at Pooles Road, are all intended to mitigate impacts to the existing road network due to increased traffic volumes from the new development communities. Furthermore, the traffic modeling completed as part of the Midhurst Transportation Master Plan and Phase 1 & 2 of the Class EA did not identify the need for new collector or arterial roads in Midhurst, beyond the recommendations provided in the Phase 1 & 2 report.

Mr. Zaghi noted it is difficult for the public to understand the traffic modeling results and figures. He suggested that visual colour graphics of the traffic data and forecasts may make it easy to understand and accept. Mr. Mullan noted that they will make every effort to ensure the information presented at the next PIC is prepared in a manner that the general public can readily understand.

Action by Ainley

Mr. Strachan noted the 2004 Growth Study suggested additional new roads may be required to accommodate future development pressures in Midhurst. Mr. Mullan noted that all background studies, including the 2004 study, were considered during the assessment of transportation infrastructure needs in Phase 1 & 2 of the EA study. The traffic modeling that was completed considered the need for new roads in the assessment of road improvement strategies. The traffic modeling considered existing and future traffic volumes (projected to the full build out planning horizon) which were assigned to the road network based on traffic distribution patterns and the resulting volume to capacity ratios were calculated to determine road improvement needs.

Mr. Wright requested the meeting minutes note that the he and other residents on the Residents Liaison Group do not agree with the transportation study recommendations.

Action by Ainley

Mr. Mullan advised that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation to the steering committee, and then to the resident liaison group, for review and input.

Action by Ainley

3.3 Water

a. Mr. Mullan advised the Draft Hydrogeological Study has recently been received confirming the location and capacities for potential Municipal Wells. The Report identifies four potential well sites, with a combined capacity of approximately 240 Litres per second (L/s), as noted below:

- (i) The Alliance property north of Doran Rd (with two 45L/s wells);
- (ii) The Coutts property south of Pooles Rd and east of Russell Rd (with two 20L/s wells);
- (iii) The McColgen pit on Snow Valley Rd, east of Wilson Dr (with two 36L/s wells);
- (iv) The Snow Valley area, west of the ski resort (with two 20L/s wells);

Note: The Development of the full Midhurst Secondary Plan only requires a capacity of approximately 200 L/s.

In response to questions put forth by the steering committee today, Mr. Mullan confirmed the following salient details:

- The proposed well fields are not anticipated to impact existing private water wells as they will draw from a much deeper ground water aquifer;
- The proposed well fields are not anticipated to impact adjacent community well water supplies, including the City of Barrie; and
- All requirements of the MOECC Source Water Protection Guidelines will be met.

In response to a question from Mr. Scanlan, Mr. Mullan noted that well pump testing results have confirmed there is sufficient water capacity in the Snow Valley and McColgen wells to service the west development community. Servicing of the east development communities will be provided using the Alliance and Coutt's well sites. As such, there is no need to pump water from one side to the other side of the new developments to accommodate the water servicing needs of either.

Mr. Mullan advised that the Draft Hydrogeological Study will be circulated to the Steering Committee members for review, and then made available to the Resident Liaison Group and general Public after the next meeting.

Action by Ainley

- b. Mr. Mullan noted there is no new updates to present since the last Resident Liaison Group meeting on the Technical Reports regarding the Design Alternatives for the following items:
- i. Water Treatment Plant(s) (including proposed treatment processes).
 - ii. Storage Reservoirs & Water Pumping Stations;
 - iii. Trunk Watermains (including specific routes).

Mr. Mullan advised that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation to the steering committee, for review and input, prior to the releasing the reports to the resident liaison group.

Action by Ainley

3.4 Wastewater

- a. Mr. Mullan reported the Draft Report regarding the 7Q20 flow (the 7 day average low flow with an expected 20 year return period) for Willow Creek, in the vicinity of Highway 26 has been received and is being submitted to Ministry of Environment & Climate Change (MOECC) for review and discussion, before being finalized and published;

Mr. Mullan noted that, based on the 9 years of data available for Willow Creek at Highway 26 the report recommends that a 7Q20 flow of 405 L/s be adopted as a conservative value for assimilation modelling in support of the Class EA process.

Mr. Mullan clarified that, at full build out of the Midhurst Secondary plan, the peak discharge flows from the plant to Willow Creek will be approximately 140 L/s. In contrast, Willow Creek has an estimated high flow rate of approximately 20,000 L/s, an average flow rate of

2,000 to 3,000 L/s and a 7Q20 flow rate of approximately 405 L/s.

In response to a question from Mr. Wright, Mr. Mullan advised that the report was prepared by Neil Hutchinson, of Hutchinson Environmental Services Ltd, who are recognized experts in their field. Furthermore, the report has been advanced over the past 7 or 8 several years with the earlier versions of the Report, which formed part of the 2009 Phase 1 & 2 Master Plan, being reviewed by MOECC. Further this latest report will be subject to MOECC review and acceptance.

Mr. Mullan noted that as with the earlier reports, the Draft 7Q20 Report will be circulated to the Steering Committee members for review, and then made available to the Resident Liaison Group and general Public after the next meeting.

Action by Ainley

Mr. Mullan reported that the cumulative assessment of phosphorous loadings is being reviewed closely with NVCA to ensure “no net increase” in the creek is achieved.

In response to a question from Mr. Scanlan with regard to placement of sewer pipes on Craig Road, Mr. Mullan advised the alignment of sewer routes will be reviewed to identify options and determine the best route for servicing each development.

Action by Ainley

In response to a question from Mr. Wright, Mr. Mullan confirmed that all available sewage plant technology from United States and other parts of the world is being considered to determine the best design system for Midhurst. Mr. Mullan further reported that there are multiple plant designs in the US that are achieving very low phosphorus reduction levels and that no decision has been made yet on the preferred treatment system.

Action by Ainley

- b. Mr. Mullan noted there are no new updates to report since the last resident liaison group meeting on the Technical Reports regarding the Design Alternatives for the following items:
- i. Wastewater Treatment Plant (including proposed treatment processes and effluent discharge criteria).
 - ii. Willow Creek - Assimilative Capacity Study;
 - iii. Pumping Stations, Trunk Collection System and Trunk Forcemains;
 - iv. Cumulative Assessment of Phosphorous Loading to the Willow Creek. This is being prepared in conjunction with the NVCA and includes an assessment of the Pre & Post Phosphorous loading of the stormwater runoff from the proposed developments;

Mr. Mullan advised that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation to the steering committee, for review and input, prior to releasing the reports to the resident liaison group.

Action by Ainley

4. Future Schedule

Mr. Mullan noted there are no new updates to report since the last resident liaison group meeting. However, in response to a general question from the steering committee today relating to the overall project completion schedule, Mr. Mullan noted the current schedule identified PIC 3 tentatively taking place in October 2015 and completion of Phase 4 of the study, including filing of the ESR on the public record in April of 2016. However, these timelines will most likely need to be extended based on when MTO comments are received and the ultimate resolution of the Pooles Road interchange design proposal with MTO.

The current project schedule will be reviewed and updated for discussion purposes at the next steering committee meeting prior to presenting to the resident liaison group.

Action by Ainley

5. Other Business

Mr. Scanlan suggested that all responses to the resident group questions and comments should be made available to the public. Mr. Mullan agreed and noted that the meeting minutes will reflect the questions and responses and the minutes will be posted on the Township website after being approved by the group.

Action by Ainley / Township

In response to a question from Mr. Scanlan with regard to the Craig Road extension, Mr. Mullan reported the Phase 1 & 2 EA identified the Craig Road extension as being a requirement from a transportation improvement perspective. Furthermore, the Phase 1 & 2 EA study was conducted in parallel with the Midhurst Secondary Plan and as such, the need for Craig Road was considered in the Secondary Plan.

6. Next Meeting

Mr. Mullan confirmed the next resident liaison group meeting is set for Wed Sept. 9, 2015 @ 6:30pm;

7. Adjournment

The meeting was adjourned at approximately 8:00 p.m.

Minutes prepared and finalized by:



J. A. Mullan
Ainley & Associates Limited

PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Thursday September 9, 2015**

LOCATION: Township Office

TIME: 6:30pm

ATTENDEES:

Mayor Bill French	-	Township of Springwater
Councillor Sandy McConkey	-	Township of Springwater
Councillor Jack Hanna	-	Township of Springwater
Robert Brindley	-	Township of Springwater
Mark Archer	-	Township of Springwater
Shauna Dudding	-	Geranium Corporation
Alex Troop	-	Alliance Homes
Tiziano Zaghi	-	Resident Representative
David Strachan	-	Resident Representative
Robert Wright	-	Resident Representative
Regan Frankcom	-	Resident Representative
Brad Kalus	-	Ainley Group
Joe Mullan	-	Ainley Group

UNABLE TO ATTEND: Deputy Mayor Don Allen, Gerald Scanlan

PURPOSE: Resident Liaison Group Meeting

1. Approval of Revised Minutes of July 2, 2015 Resident Liaison Group Meeting

The following amendments to the revised meeting minutes (of September 8, 2015) were requested:

- Item 3.2.b – add reference to Forbes Road connection in brackets after Craig Road Extension
- Item 3.2, third last paragraph, revise reference to Mr. Wright to read Mr. Strachan

Pending the above amendments, the revised meeting minutes were approved as printed.

Mr. Brindley noted that following formal approval of RLG Minutes, they would be posted on the Township's website and therefore it is imperative that the RLG approve the minutes in a timely manner. Mr. Mullan noted that other than the most recent Meeting Minutes all others are approved. As such it was agreed that the Township would post the approved 2015 RLG Minutes on the Township's website.

Action by Township

Mayor French noted the role of the Resident Liaison Group (RLG) is to receive information and ask questions. As outlined in the RLG terms of reference, the function of RLG is not to

act as a reviewer, which is the role of the Steering Committee.

Councillor McConkey noted the draft meeting minutes should continue to document responses to questions raised at the meeting. In the event an answer to a question cannot be provided at the meeting, a follow up discussion can take place at the next meeting. In this manner the minutes do not need to be approved prior to the next meeting. That said, it was agreed the draft meeting minutes, which are emailed to attendees after each meeting, do not require approval in advance of the next scheduled meeting. Rather comments can be received and the minutes amended at the next RLG meeting before being issued as final. It was agreed that comments on the draft minutes shall be submitted in a timely manner, well in advance of the next scheduled meeting, to provide sufficient time for a response to be prepared for discussion purposes at the next meeting.

Action by All

In response to a question from Mr. Wright with regard to the option of creating a new east-west arterial road by extending Forbes Road, Mr. Mullan clarified the design concepts being evaluated for the extension of Craig Road include the connection to Forbes Road. Moving forward, a reference to Forbes Road connection will be included in the description of the Craig Road extension options.

Action by Ainley

In response to a question from Mr. Wright, it was confirmed that the Craig Road Extension (including Forbes Road connection) is being carried forward as per the recommendation of the Phase 1 & 2 Class EA and the Midhurst Secondary Plan. Mr. Mullan further noted that the construction of this new arterial road is within the current Township Development Charges, and that it will be constructed using one of the following methods (which has not yet been decided):

- i) Upfront financing by the Midhurst Landowners Group, with offsetting Road Development Charge credits being provided by the Township at the time of house construction; or
- ii) Upfront financing by the Township with re-payment to the Township through future Road Development Charges; or
- iii) Existing Development Charges reserve funds.

2. Non-Technical Updates since last Resident Liaison Group Meeting (July 2, 2015)

Mr. Mullan noted there were no non-technical updates to report to the group from the last meeting.

3. Technical Updates since last Resident Liaison Group Meeting (July 2, 2015)

3.1 Development Phasing & Staging Projections

Mr. Mullan provided an overview of the "Draft" Development Phasing & Staging Projections which was updated based upon the comments received at the last Steering Committee Meeting. Mr. Mullan noted that a Development Analysis chart was added to the Draft Phasing Plan which provides a breakdown of the contemplated housing product types and unit projections for each stage of development. A minor typo was noted in the last column of the

Development Analysis chart. Reference to Carson Road in Stage V should read Doran Road. The table will be revised accordingly.

Action by Ainley

Mr. Mullan noted the revised staging table includes the approved development 'trigger point' of 3,850 units in the Phase 1 - Stage iv, to match the trigger in the Official Plan.

Mr. Mullan reminded the group the projections will be utilized to determine the staging of the required Water, Wastewater & Transportation Infrastructure and not as a Planning tool.

In response to a question raised concerning the status of the Draft Plan of Subdivisions, Mr. Brindley advised that no clearances have been lifted to-date. However, Mr. Brindley noted the Township has received a request from the Development Group to lift a few Draft Plan Conditions, which are currently under review.

Councillor McConkey suggested certain studies, such as an update to the current Development Charges Study should be completed prior to clearing the Draft Conditions. Furthermore, a report should be prepared to confirm the appropriate trigger points for determining when key Draft Conditions can be lifted.

Action by Township

Mr. Brindley noted the Draft Conditions document is used as a 'check list' to record when reports and approvals from external agencies are received.

Action by Township

In response to a general inquiry from Mr. Wright concerning the time line for completion of the Phase 1 - Stage 1 house construction, Mr. Troop advised that previous land development studies suggest a benchmark figure of 300 units per year which is generally accepted as a reasonable target in the new home construction industry. However, the ultimate build out time line is dictated by market demand which can vary based on the current economic climate and the development location relative to employment opportunities and amenities.

In response to a question from Mr. Wright regarding when Phase 1 - Stage v development could proceed, Mayor French noted that, even though the OMB approved 300ha, which can accommodate approximately 5,000 units, the Township's Official Plan contains triggers that must be met before the Development advances beyond the 3,850 units.

3.2 Transportation

a. Pooles Road Partial Interchange

Mr. Mullan advised that, following the submission of the updated Technical Needs and Justification Report in June 2015, follow up comments from MTO were received, on September 4, 2015. It was noted that MTO's position has not changed and that they remain unsupportive of a proposed partial interchange at Pooles Road and Hwy 400. However, in their response, MTO noted that further clarifications and traffic analysis are required to demonstrate that the interchange is warranted. Mr. Mullan noted that the MTO cited a number of concerns with the proposed interchange, including that it may preclude a future transportation corridor and interchange options for the Barrie By-pass. On this particular point Mr. Mullan noted that a future Barrie By-pass in the vicinity of

Pooles Road would involve significant impact to the local environment, including acquisition of numerous existing residential homes in Midhurst and as a result didn't believe that the particular area would be a realistic option for the MTO to consider, in the future if and when the possibility of Barrie By-Pass comes back to the table.

Action by Ainley

Mr. Mullan advised that a follow up meeting with MTO, to discuss the recent comments, has been requested. The intent is to meet with MTO within the next few weeks and attempt to resolve a mutually acceptable solution with respect to a future connection to Hwy 400.

Action by Ainley

Mr. Mullan noted the Draft Pooles Road / Hwy 400 Interchange Needs and Justification report will be made available to the Resident Liaison Group, for information purposes. Mr. Mullan advised the report is Draft and as such is subject to change as the study evolves and advances towards completion. The Draft report will be made available to each member of the Resident Liaison Group within the next few days, via email and a Drop Box link. A digital (pdf) copy can also be provided by the Township upon request.

Action by Ainley

b. Craig Road Extension (including Forbes Road connection)

Mr. Mullan reported there are no new updates to present since the last Resident Liaison Group Meeting as the analysis of the alternative alignments for Craig Road extension is ongoing.

Action by Ainley

c. Roundabouts

Mr. Mullan reported there are no new updates to present since the last Resident Liaison Group Meeting as the analysis of the alternatives for each of the 11 intersections that were identified in Phase 1 & 2 of the Class EA study as requiring capacity and operational improvements is ongoing.

Action by Ainley

d. St Vincent Street Extension

Mr. Mullan noted there were no new updates to present since the last Resident Liaison Group Meeting.

e. Active Transportation (Trails & Bikes lanes)

Mr. Mullan noted there were no new updates to present since the last Resident Liaison Group Meeting.

f. Transit

Mr. Mullan noted there were no new updates to present since the last Resident Liaison Group Meeting.

Mr. Mullan advised that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

3.3 Water

- a. Mr. Mullan noted there were no new updates to present since the last Resident Liaison Group Meeting regarding the draft Hydrogeological Report which identifies four potential well sites, with a combined capacity of approximately 240 Litres per second for potential Municipal Wells.

Mr. Mullan noted the Draft Hydrogeological Report will be made available to the Resident Liaison Group, for information purposes. Mr. Mullan advised the report is Draft and as such is subject to change as the study evolves and advances towards completion. The Draft report will be made available to each member of the Resident Liaison Group within the next few days, via email and a Drop Box link. A digital (pdf) copy can also be provided by the Township upon request.

Action by Ainley

- b. Mr. Mullan noted there were no new updates to present since the last Resident Liaison Group Meeting on the Technical Reports regarding the Design Alternatives for the following items:
- i. Water Treatment Plant(s) (including proposed treatment processes).
 - ii. Storage Reservoirs & Water Pumping Stations;
 - iii. Trunk Watermains (including specific routes).

It was further noted that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

3.4 Wastewater

- a. Mr. Mullan noted there were no new updates to present since the last Resident Liaison Group Meeting regarding the Draft 7Q20 Flow Report.

Mr. Mullan noted the Draft report regarding the 7Q20 flow will be made available to the Resident Liaison Group, for information purposes. Mr. Mullan advised the report is Draft and as such is subject to change as the study evolves and advances towards completion. The Draft report will be made available to each member of the Resident Liaison Group within the next few days, via email and a Drop Box link. A digital (pdf) copy can also be provided by the Township upon request.

Action by Ainley

- b. Mr. Mullan noted there were no new updates to present since the last Resident Liaison Group Meeting on the Technical Reports regarding the Design Alternatives for the following items:
- Wastewater Treatment Plant (including proposed treatment processes and effluent discharge criteria).
 - Willow Creek - Assimilative Capacity Study;
 - Pumping Stations, Trunk Collection System and Trunk Forcemains;
 - Cumulative Assessment of Phosphorous Loading to the Willow Creek. This is being prepared in conjunction with the NVCA and includes an assessment of the Pre & Post Phosphorous loading of the stormwater runoff from the proposed developments;

Mr. Mullan advised that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

4. Future Schedule

Mr. Mullan noted the last official Schedule identified the mandatory Phase 3 Public Information Centre (PIC) taking place in the fall of 2015 followed by the completion of the Phase 4 Environmental Study Report (ESR) in early 2016. However, the pending follow-up discussions with MTO regarding the Pooles Road/Hwy 400 partial interchange has a direct impact on the schedule, as the Phase 3 PIC cannot be arranged until this matter is resolved. As a result, the Schedule will need to be updated once a resolution on the Pooles Road /Hwy 400 partial interchange is reached with MTO.

Action by Ainley

In response to an inquiry from Mr. Wright with regard to the importance of MTO approval to the study process given the interchange is not required until full build out, Mr. Mullan noted the mandate of the Class EA study is to consider all future infrastructure required for the full build out of the Midhurst Secondary Plan. Thus resolution of the proposed Pooles Road / Hwy 400 partial interchange needs to be included. It was also noted that this item is now on the critical path for the completion of the Class EA study.

5. Other Business

No other business items were tabled for discussion.

6. Next Meeting

Mr. Mullan confirmed the next Resident Liaison Group meeting is set for Thursday November 5, 2015 @ 6:30pm;

7. Adjournment

The meeting was adjourned at approximately 7:55 p.m.

Minutes prepared and finalized by:



J. A. Mullan
Ainley & Associates Limited

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PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Thursday November 5, 2015**

LOCATION: Township Office

TIME: 5:30pm

ATTENDEES:

Deputy Mayor Don Allen	-	Township of Springwater
Councillor Sandy McConkey	-	Township of Springwater
Councillor Jack Hanna	-	Township of Springwater
Robert Brindley	-	Township of Springwater
Mario Giampietri	-	Geranium Corporation
Vimal Patel	-	Geranium Corporation
Tiziano Zaghi	-	Resident Representative
Gerald Scanlan	-	Resident Representative
David Strachan	-	Resident Representative
Robert Wright	-	Resident Representative
Regan Frankcom	-	Resident Representative
Brad Kalus	-	Ainley Group
Joe Mullan	-	Ainley Group

UNABLE TO ATTEND: Mayor Bill French, Mark Archer, Alex Troop

PURPOSE: Resident Liaison Group Meeting

1. Approval of Minutes of Sept 9, 2015 Resident Liaison Group Meeting

No comments were provided on the minutes and therefore they are approved as printed (with minor spelling correction).

2. Non-Technical Updates since last Resident Liaison Group Meeting (Sept 9, 2015)

It was noted that there were no non-technical updates to report to the group from the last meeting.

3. Updates Regarding Clearance of Draft Plan Conditions

Mr. Brindley acknowledged receipt of comments from Mr. Strachan regarding the Draft Plans. Mr. Brindley advised that the Draft Plan Conditions will be reviewed and ultimately cleared by Township Planning Staff in conjunction with external Agencies. Mr. Brindley further clarified that the mandate of the Resident Liaison Group does not include participation in that process, but their comments are always welcomed.

In response to a specific question Mr. Brindley confirmed that no Draft Plan Conditions have been cleared to-date.

4. Technical Updates since last Resident Liaison Group Meeting (Sept 9, 2015)

4.1 Transportation

a. **Pooles Road/Hwy 400 Interchange**

Mr. Mullan reported that a meeting was recently held with Ministry of Transportation (MTO) to discuss the Updated Technical Report & Modelling RE: Highway 400/Pooles Road Interchange and the response comments received from the MTO.

Mr. Mullan noted the MTO will be initiating a Greater Golden Horseshoe Planning Study within the next few months which will look at the regional traffic movements in the entire area including the need for a Barrie Bypass and as such, the MTO could not support a new Interchange on Hwy 400, at Pooles Road, at this time. Further to this MTO asked about the possibility of making improvements to the existing and proposed road network including the Forbes Road Interchange, such that it could accommodate the proposed traffic.

It was also noted that after a discussion with the MTO regarding the need for traffic from the proposed Development to access Hwy 400, it was suggested that, in lieu of the Pooles Road Interchange, Ainley create a new alternative with Forbes Road and Russell Road widened to 4-lanes and the Forbes Road/Hwy 400 interchange upgraded to a higher capacity configuration and then:

- Update the EMME traffic model to determine/update the Phase 1 and Ultimate volume forecasts, trip distributions and V/C ratios for key roads in the area;
- Review and update where necessary the traffic splits between the upgraded Forbes Road Interchange and other key roads in the area; and
- Prepare an Operational Analysis of the upgraded Forbes Road/Hwy 400 Interchange.

Mr. Mullan noted that subsequent to the meeting with MTO, Ainley are now in the process of analyzing this alternative and will be reporting back to the MTO and the Steering Committee with the results.

In response to a question from Councillor Hanna, Mr. Brindley confirmed that all road and interchange improvements associated with the Midhurst Secondary Plan, with the exception of the Craig Road (Forbes Road extension) are 100% funded by the Midhurst Developers. With regard to Craig Road construction it was noted that this particular road is within the Township Development Charges. Mr. Giampietri confirmed this funding arrangement; however, he noted that other benefits not related to development should not be a direct developer cost.

b. **Craig Road Extension (including Forbes Road connection)**

Mr. Mullan advised the analysis of the alternative alignments for Craig Road extension (including the connection to Forbes Road) is ongoing; however, there are no updates to provide at this time.

- c. **Intersection Improvements (including possible Roundabouts)**
Mr. Mullan advised the analysis of the alternatives for each of the 11 intersections that were identified in the Phase 1 & 2 as requiring intersection improvements is ongoing; however, there are no updates to provide at this time.
- d. **St Vincent Street Extension**
Mr. Mullan noted there are no further updates since the last Resident Liaison Group Meeting.
- e. **Active Transportation (Trails & Bikes lanes)**
Mr. Mullan noted there are no further updates since the last Resident Liaison Group Meeting.
- f. **Transit**
Mr. Mullan noted there are no further updates since the last Resident Liaison Group Meeting.

Mr. Mullan stated that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by: Ainley

4.2 Water

- a. Mr. Mullan advised that, following the recent submission of the Draft Hydrogeological Report, the preparation of the Technical Reports regarding the Design Alternatives for the following items is ongoing, however, there no updates to provide at this time:
 - i. Water Treatment Plant(s) (including proposed treatment processes).
 - ii. Storage Reservoirs & Water Pumping Stations;
 - iii. Trunk Watermains (including specific routes).

Mr. Mullan stated that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by: Ainley

4.3 Wastewater

- a. Mr. Mullan advised that, following the recent submission of the Draft 7Q20 Flow Assessment for Willow Creek, the preparation of the Technical Reports regarding the Design Alternatives for the following items are ongoing, however, there no updates to provide at this time:
 - i. Wastewater Treatment Plant (including proposed treatment processes and effluent discharge criteria).
 - ii. Willow Creek - Assimilative Capacity Study;
 - iii. Pumping Stations, Trunk Collection System and Trunk Forcemains;
 - iv. Cumulative Assessment of Phosphorous Loading to the Willow Creek. This is being prepared in conjunction with the NVCA and includes an assessment of the Pre & Post Phosphorous loading of the stormwater runoff from the proposed developments;

Mr. Mullan stated that, after the completion of the aforementioned Technical Reports all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by: Ainley

Councillor Hanna noted that during the Steering Committee Meeting it was noted that consideration will be given to extending the sanitary force mains along the proposed Craig Road corridor in order to connect to the proposed WWTP (at Snow Valley Road) via the Simcoe County forest lands and/or the CN railway corridor, thus avoiding disruption of the existing residential local roads in Midhurst. However, Mr. Mullan reiterated the response provided by Mayor French during the earlier Steering Committee Meeting that the option of routing the sanitary pipes away from the existing Midhurst residential roads and through the County forests could result in increased infrastructure costs should it be necessary to connect the existing private septic systems in the existing community east of Hwy 26 future to the new WWTP in the future. Notwithstanding, Mr. Mullan advised that the noted routing options will be considered, including the advantages and disadvantages of each option, as part of Phase 3 of the EA.

Action by: Ainley

5. Future Schedule

Mr. Mullan noted that, now that we have some further clarity on the MTO's position regarding the Pools Road interchange, Ainley will be preparing an Updated Schedule for discussion at the next Resident Liaison Group Meeting.

Action by: Ainley

6. Other Business

Mr. Wright expressed concern with future traffic congestion within Midhurst due to the lack of new roads being proposed. Mr. Mullan responded by stating the need for new north-south and east-west connecting roads have been considered. Furthermore, the current transportation improvement plan includes several new road extensions and multiple intersection and road widening proposals to address existing and future traffic conditions and volume forecasts following full build out in 2041. Mr. Mullan also noted that environmentally sensitive lands, such as wet lands which are located throughout the Midhurst settlement area, have to be considered when assessing the need and justification for new roads. The EA study team is committed to developing a well balanced approach to accommodating future traffic demands while mitigating negative environmental impacts to the extent possible.

Action by: Ainley

Mr. Scanlan requested clarification on how future traffic volumes are being calculated and if the rural features of Midhurst factor into the analysis. Mr. Kalus responded by stating the future traffic conditions are assessed based on a number of industry standard factors, including existing background traffic volumes, annual growth projections and cumulative total development generated traffic volumes based on the number of new housing units during each phase of development. An assessment of trip distribution patterns (i.e. travel destination routes) is determined and the corresponding ratios of traffic volumes are assigned to the external road network. Based on the classification of each road (i.e. local, collector or arterial) the volumes on each road segment are reviewed from a volume/capacity perspective based on accepted industry standards. Once the volume

forecasts approach the road and/or intersection theoretical capacity thresholds, improvements to intersections and mid-block road sections are required.

The need for road improvements may also be determined based on existing geometric deficiencies, such as steep grades causing poor sight lines at intersections and entrances, sharp curves on high speed roads and other factors that represent traffic safety concerns. Typically these issues are not directly related to new development as they pertain to roads that were constructed previously in accordance with the design standards that may not meet current design standards.

In response to an inquiry from Mr. Strachan, Mr. Kalus noted a detailed traffic model for the major road network (i.e. collector and arterial roads) within and surrounding Midhurst is currently being prepared. The results from the model, including recommendations relating to the timing of road and intersection improvements based on the current development phasing plan, is expected to be completed in the near future.

Action by: Ainley

Mr. Zaghi suggested that references to report submissions should include the recipients of the reports. Mr. Mullan agreed that, moving forward, this information will be added.

Action by: Ainley

7. Next Meeting

Mr. Brindley advised that new Meeting Dates for 2016 will be circulated in the near future. Most likely the existing meeting cycle of every 8-10 weeks will continue.

Action by: Township

8. Adjournment

The meeting was adjourned at approximately 6:15 p.m.

Minutes prepared and finalized by:



J. A. Mullan
Ainley & Associates Limited

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PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Thursday; Jan. 14, 2016**

LOCATION: Township Office

TIME: 6:30pm

ATTENDEES:

Mayor Bill French	-	Township of Springwater
Deputy Mayor Don Allen	-	Township of Springwater
Councillor Sandy McConkey	-	Township of Springwater
Councillor Jack Hanna	-	Township of Springwater
Robert Brindley	-	Township of Springwater
Mario Giampietri	-	Geranium Corporation
Alex Troop	-	Alliance Homes
Tiziano Zaghi	-	Residents Representatives
David Strachan	-	Residents Representatives
Gerald Scanlan	-	Residents Representatives
Regan Frankcom	-	Residents Representatives
Brad Kalus	-	Ainley Group
Joe Mullan	-	Ainley Group

UNABLE TO ATTEND: Mark Archer, Robert Wright

PURPOSE: Resident Liaison Group Meeting

1. Approval of Minutes of Nov. 05, 2015 Resident Liaison Group Meeting

No comments were provided on the minutes and therefore they are approved as printed.

2. Non-Technical Updates since last Resident Liaison Group Meeting (Nov. 05, 2015)

It was noted that there were no non-technical updates to report to the group from the last meeting.

3. Updates Regarding Clearance of Draft Plan Conditions

Mr. Brindley advised that no Draft Plan conditions have been cleared yet. However, the archaeological clearance could be granted as the Province has accepted the reports.

4. Technical Updates since last Resident Liaison Group Meeting (Nov. 05, 2015)

4.1 Transportation

a. Hwy 400 Interchange

Mr. Mullan reported that, further to the meeting with the Ministry of Transportation (MTO) in October 2015, a Draft Technical Memorandum was received just prior to today's meeting from our sub-consultant addressing the "new" alternative with Forbes Road and Russell Road widened to 4-lanes and the Forbes Road/Hwy 400 interchange upgraded, in lieu of the Pooles Road Interchange. However, as this Draft Technical Memorandum has not been reviewed internally yet, we are not able to present the findings, but will do so at the next meeting.

Mr. Mullan did note that major upgrades to the interchange are not required during Phase 1 (approved 300 ha of development) but they are required to accommodate Phase 2 (full build out of the Secondary Plan).

b. Craig Road Extension (including Forbes Road connection)

Mr. Mullan advised the analysis of the alternative alignments for Craig Road extension (including the connection to Forbes Road) is ongoing; however, there are no updates to provide at this time.

c. Intersection Improvements (including possible Roundabouts)

Mr. Mullan advised the analysis of the alternatives for each of the 11 intersections that were identified in the Phase 1 & 2 as requiring intersection improvements is ongoing; however, there are no updates to provide at this time.

d. St Vincent Street Extension

Mr. Mullan advised that there were no further updates since the last Resident Liaison Group Meeting.

e. Active Transportation (Trails & Bikes lanes)

Mr. Mullan advised that there were no further updates since the last Resident Liaison Group Meeting.

f. Transit

Mr. Mullan advised that there were no further updates since the last Resident Liaison Group Meeting.

Mr. Mullan reported that plans are being prepared to identify when road improvements are required based on the development staging plans. Furthermore, trigger points will be established to assist with identifying what and when new infrastructure is required. More information is expected to be available at the next meeting.

In response to a question from Mr. Strachan, Mayor French suggested replacing "Ultimate" with "Phase 2" in the development staging summary table.

Action by: Ainley

In response to a question from Mr. Scanlan, Mr. Mullan stated that specific timelines for each stage of the infrastructure improvement work cannot be determined at this point given new home building construction is subject to market conditions. Mr. Brindley added that the technical studies and science may suggest an approach, however Council will ultimately decide in consultation with the Developers. The Development agreements will be premised on appropriate timelines and implementation criteria to ensure the necessary infrastructure is in place to accommodate each stage of development.

Mr. Scanlan inquired if traffic count surveys can be undertaken on a regular basis as development stages are completed in order to verify assumptions made regarding future traffic projections. Mr. Mullan responded by saying that this will be considered moving forward and could possibly be addressed in the Development agreements.

Action by: Ainley

Mr. Mullan stated that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by: Ainley

4.2 Water

- a. Mr. Mullan reported that, following the submission of the Draft Hydrogeological Report to MOECC, the preparation of the Technical Reports regarding the Design Alternatives for the following items are ongoing, however, there are no updates to provide at this time:
 - i. Water Treatment Plant(s), including life cycle costing to compare one water treatment plant (WTP) vs two water treatment plants along with analysis of the proposed treatment processes;
 - ii. Sizes and locations of Storage Reservoirs & Water Pumping Stations, including finalizing the fire flow requirements in consultation with the Township Staff and the Fire department. It was noted that the 2009 Phase 1 & 2 Master Plan identified a fire flow of 133 Litres per second (L/s) for new the residential and employment land through the MSP. To put this value into perspective, Mr. Mullan note that currently the available fire flow rate in Midhurst is approximately 38 L/s and approximately 100 L/s for existing residential areas in the City of Barrie;
 - iii. Trunk Watermains (including specific routes).

In response to an inquiry from Mayor French, Mr. Mullan clarified that the fire flow rate is calculated based on a number of different guidelines including MOECC and Canada Fire Underwriters Survey (FUS). It was also noted the available fire flow available at fire hydrants must in addition to the max day demand.

In response to a question from Mr. Strachan with regard to the draft Golder report, Mr. Mullan advised that the team have not received any comments from MOECC. It is expected that the report will not be finalized until closer to the end of the Class EA study.

Action by: Ainley

Mr. Brindley mentioned the recent artesian well/acquirer remediation work completed on Gill Road by the Township may provide helpful additional background information to the Golder hydrogeologist. The Township will forward this information, including the pumping data (required to bring static water level down sufficiently to permit the well to be sealed), to Ainley.

Action by: Township

Mr. Mullan stated that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by: Ainley

4.3 Wastewater

- a. Mr. Mullan reported that, following the recent submission of the Draft 7Q20 Flow Assessment for Willow Creek the preparation of the Technical Reports regarding the Design Alternatives for the following items are ongoing, however, there are no updates to provide at this time:
 - i. Wastewater Treatment Plant (including proposed treatment processes and effluent discharge criteria).
 - ii. Willow Creek - Assimilative Capacity Study;
 - iii. Pumping Stations, Trunk Collection System and Trunk Force mains (including an analysis on the locations for proposed Pumping Stations and routes for force mains);
 - iv. Cumulative Assessment of Phosphorous Loading to the Willow Creek - A meeting was held in late Dec. 2015 with NVCA, the Township, Hutchinson Environmental, XCG & Ainley to discuss the work plan associated with the Pre- & Post Phosphorous Loading assessment that is being completed;

Mr. Mullan noted that the recent 7Q20 Report established the low flow conditions in Willow Creek over a 9 year period. This low flow identified within this Report, which is currently with MOECC, will be utilized within the Assimilative Capacity analysis to determine if there are any impacts from the proposed effluent being discharged into Willow Creek. Mr. Mullan advised that the gathering of flow data in Willow Creek is continuing.

Mr. Mullan reported that the waste water treatment plant treatment process is currently under review. Pumping stations and force main routes will be provided to convey flows from the east to the west. Possible routing of force main(s) will consider all alternatives including trails and railways corridors to reduce impacts on existing roads, however it was noted that most of the key existing roads need to be reconstructed and therefore it may be more beneficial to keep the force main(s) within the existing roads.

With regard to the cumulative assessment, Mr. Mullan advised that it is being completed in conjunction with the NVCA and the development of the Phosphorus budget. Mr. Mullan noted that Low Impact Development (LID) measures will be implemented throughout the new developments to promote localized groundwater infiltration and in turn reduce phosphorus loadings to the receiving streams. Furthermore, the target of no net increase in phosphorus loading will need to be achieved in order to demonstrate no impact to the Minessing wetland. It was noted that, in addition to phosphorus, other potential contaminants will be considered.

Mr. Mullan advised that XCG Consultants were retained to assist Ainley in completing a Peer review of Hutchinson's Phosphorous budget work plan. XCG are acknowledged experts in the field having been involved in the Lake Simcoe Protection Plan and will provide added value and assurance to the study process. Mr. Mullan also noted that the criteria of ensuring the first 25mm of a rain event is managed using Low Impact Development (LID) measures before releasing flows from a stormwater management facility, sets a high target. This target,

which exceeds all Provincial requirements will help reduce the phosphorus loading to the creek, and in doing so, help achieve the no-net increase objective.

In response to an inquiry from Mr. Zaghi concerning the measurement of phosphorus, Mr. Mullan advised that effluent from the Waste Water Treatment Plant is very closely monitored. In addition, monitoring of the stormwater management flows will be addressed through adaptive management plans at the pond outlets. Mr. Mullan noted that based upon a recent study completed as part of the Lake Simcoe Protection Plan, one of the largest contributors of phosphorous to the Lake Simcoe Watershed is from the atmosphere.

Mr. Giampietri advised that Geranium Homes have completed numerous studies and have established models that have led to stringent targets being established and achieved at new wastewater treatment plants in York Region and other major urban centres. This same highly innovative and emerging technology will be implemented in Midhurst. Furthermore, the science has been tested and proven. With respect to the 25mm rainfall treatment criteria, Geranium have tested and proven that they can achieve the desired results by implementing the necessary LID measures at other development site locations. MOECC has recognized Geranium's success and will be using it to set the new standard.

Mr. Mullan stated that, after the completion of the aforementioned Technical Reports all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by: Ainley

5. Other Business

No other business was brought forward by the group.

6. Next Meeting

The next Resident Liaison Group Meeting is scheduled for Thurs March 10, 2016 @ 6:30pm;

7. Adjournment

The meeting was adjourned at approximately 7:45 p.m.

Minutes prepared and finalized by:



J. A. Mullan
Ainley & Associates Limited

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PROJECT:	Township of Springwater Midhurst– Class Environmental Assessment Phase 3 & 4 Ainley Project Number - 113027	
DATE:	Thursday; Mar 10, 2016	
LOCATION:	Township Office	
TIME:	6:30pm	
INVITEES:	Mayor Bill French	- Township of Springwater
	Deputy Mayor Don Allen	- Township of Springwater
	Councillor Sandy McConkey	- Township of Springwater
	Robert Brindley	- Township of Springwater
	Mark Archer	- Township of Springwater
	Alex Troop	- Alliance Homes
	Robert Wright	- Residents Representatives
	Gerald Scanlan	- Residents Representatives
	Regan Frankcom	- Residents Representatives
	Brad Kalus	- Ainley Group
	Joe Mullan	- Ainley Group
ABSENT:	Councillor Jack Hanna	- Township of Springwater
	Mario Giampietri	- Geranium Corporation
	Tiziano Zaghi	- Residents Representatives
	David Strachan	- Residents Representatives
PURPOSE:	Resident Liaison Group Meeting	

1. Approval of Minutes of Jan 14, 2016 Resident Liaison Group Meeting

Minor comments with regard to a few grammatical edits were provided; otherwise the minutes were approved as printed.

2. Non-Technical Updates since last Resident Liaison Group Meeting (Jan. 14, 2016)

It was noted that there were no non-technical updates to report to the group from the last meeting.

3. Updates Regarding Clearance of Draft Plan Conditions

Mr. Brindley advised that no Draft Plan conditions have been cleared yet.

Mr. Brindley further advised that a request to clear the archaeological condition on the Mick's property was received and is under review. A copy of the request will be circulated to the group for information purposes.

Action by: Township

4. Technical Updates since last Resident Liaison Group Meeting (Jan. 14, 2016)

4.1 Transportation

a. **Hwy 400 & Forbes Road Interchange**

Mr. Mullan reported the latest Draft Technical Report regarding the Hwy 400 & Forbes Road interchange evaluated a “new” alternative suggested by MTO with Forbes Road and Russell Road widened to 4-lanes and the Forbes Road/Hwy 400 interchange upgraded, in lieu of the previously proposed Pooler Road Interchange. This Draft report concludes that:

- Widening of Forbes Rd & Russell Rd to four lanes and an upgraded interchange is required in conjunction with Phase 2, but is not required for Phase 1;
- Signalization plus eastbound and westbound turning lanes onto Hwy 400 South at the west ramp terminal in conjunction with the Phase 1;

Mr. Mullan noted there were a few questions relating to the need for westbound turning lanes onto Hwy 400 that required clarification and as such further consultation with AECOM will take place. Subsequent to clarifying these items, the report will be updated and submitted to the MTO.

Action by: Ainley

In response to a question from Mr. Scanlan, Mr. Mullan stated that there has been no discussion with MTO thus far regarding the use of the future Craig Road extension as an emergency detour route in the event Highway 400 is closed due to an accident. However, this will be considered and discussed with MTO. Mr. Scanlon also inquired if Craig Road was to be designated as an emergency detour route, and if so should it be built to a 4-lane cross section. Mr. Mullan responded by saying that from a traffic demand perspective, 4-laning of Craig Road is not warranted.

Action by: Ainley

b. **Staging of the proposed Road Improvements**

Mr. Mullan reported that, based upon the Development Phasing Plan, Draft Road Improvement Plans has been developed to identify the roads that need to be constructed/reconstructed with each stage of Development. Mr. Mullan proceeded to present the draft road improvement staging plans to the group. During which there was general discussion on what road sections should be improved and when such improvements should take place.

In response to a question from Mr. Wright, Mr. Mullan noted the affected roads will be upgraded to current Township urban design standards, complete with curb and gutter, storm sewer and sidewalks. Sections of roads which have already been constructed to an urban cross section will be improved to address any pavement condition deficiencies and will involve the construction of sidewalks if none currently exist. Where deemed appropriate, the Township’s rural design standard may be implemented, consisting of open road side ditches and off road sidewalks or multi-use trails.

In response to a question from Mr. Scanlan with regard to the timing of road upgrades based on new servicing construction requirements, Mr. Mullan confirmed that the intent would be to complete road and intersection upgrades at the same time that any new watermain and/or sanitary forcemain construction is taking place, thus avoiding throw away road restoration costs and minimizing traffic and construction disturbance to the public and local residents.

In response to a question from Mr. Scanlan regarding the timing for the construction of the Craig Road extension, Mr. Mullan advised that the draft road improvement phasing plans presented at the meeting will be subject to further discussion and revision. Furthermore, the decision as to when Craig Road ultimately gets built will be based on technical requirements and at the discretion of Council.

In response to a question from Mr. Frankcom with regard to the extension of Anne Street, from Carson Road to Snow Valley Road, Mr. Mullan noted there are significant environmental constraints (i.e. mature trees) and topographic challenges that would need to be mitigated in order to accommodate a new road. Furthermore, from a traffic perspective, the extension is not warranted. For these reasons, the extension of Anne Street was not recommended during Phases 1 and 2 of the Class EA study. Notwithstanding, Mr. Mullan noted that Council and the Township's Fire Department is currently assessing the benefit of extending Anne Street in conjunction with the Fire Master Plan to improve emergency response times. Subject to the outcome of that review, the extension of Anne Street could be added to the road improvement plan.

In response to a question from Mr. Scanlan regarding the impact of the road improvement staging plan on truck routes, Mr. Brindley advised that in conjunction with the construction of the developments, the Township designates certain roads as haul routes and this will be addressed in the subdivision agreements.

Mr. Mullan mentioned the road improvement phasing plans will be revised to address comments received from this group as well as from the earlier meeting with the Steering Committee. Once the revisions have been made, digital and hard copies will be made available to the group.

Action by: Ainley

c. Craig Road Extension (including Forbes Road connection)

Mr. Mullan reported the analysis of the alternative alignments for Craig Road extension (including the connection to Forbes Road) is ongoing. Detailed analysis of all alternatives, including a Draft recommended alternative, will be available for the next meeting.

d. Intersection Improvements (including possible Roundabouts)

Mr. Mullan reported the analysis of roundabouts versus traditional intersection improvements for each of the 11 intersections that were identified in the Phase 1 & 2 is ongoing, with no further updates to provide at this time.

e. **Active Transportation (Trails & Bikes lanes)**

Mr. Mullan noted there were no further updates since the last Resident Liaison Group Meeting.

f. **Transit**

Mr. Mullan noted there were no further updates since the last Resident Liaison Group Meeting.

Mr. Mullan stated that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by: Ainley

4.2 Water

a. Mr. Mullan reported that, following the submission of the Draft Hydrogeological Report, the preparation of the Technical Reports regarding the Design Alternatives for the following items is ongoing, however, there no updates to provide at this time:

- i. Water Treatment Plant(s) (including proposed treatment processes).
- ii. Storage Reservoirs & Water Pumping Stations;
- iii. Trunk Watermains (including specific routes).

Mr. Mullan stated that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by: Ainley

4.3 Wastewater

a. **7Q20 Flow Assessment for Willow Creek**

Mr. Mullan noted that the report is currently being updated with the 2015 flow data, which provides the required 10 years of the flow data for the calculation of 7Q20 flow in accordance with MOECC guidelines. Mr. Mullan further noted that, based on a preliminary review of the data, no major changes to the values identified in the June 2015 Report are anticipated. A copy of the Draft Updated Report is anticipated to be received within the next few weeks. Results and findings from the updated report will be presented to the group at the next meeting.

b. **Willow Creek - Assimilative Capacity Study**

Mr. Mullan noted the report is currently being prepared utilizing the latest information from the aforementioned 7Q20 Report. Results and findings from the report will be presented to the group at the next meeting.

c. **Wastewater Treatment Plant (including proposed treatment processes and effluent discharge criteria)**

Mr. Mullan reported the preparation of the Report regarding the Wastewater Treatment Plant treatment processes and effluent discharge criteria utilizing the latest information from the 7Q20 Report and the Assimilative Capacity Study is ongoing.

Mr. Mullan further noted that a Draft Report is expected to be received within the next few weeks. Preliminary findings and recommendations will be presented to the group at the next meeting.

d. **Pumping Stations and Trunk Forcemains**

Mr. Mullan provided an overview of the route options for the sanitary forcemain(s) from the East to the West that have been developed and evaluated. Based on the outcome of the evaluations, the route involving Finlay Mill Rd still represents the recommended route (as per the Phase 1 & 2 Report). Mr. Mullan further confirmed that all Pumping Stations associated with the new Residential development will be contained within the proposed development boundaries.

e. **Cumulative Assessment Report of Phosphorous Loading to the Willow Creek**

Mr. Mullan reported that a recent meeting was held with Ainley, NVCA, XCG and Hutchinson Environmental to discuss the Draft Work Plan associated with the Cumulative Assessment of Phosphorous Loading to the Willow Creek. Subsequent to this meeting the Work plan is being updated by Hutchinson Environmental. It is anticipated that the Cumulative Assessment Report will be late April, early May 2016.

Action by: Ainley/Township

Mr. Mullan stated that, after the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action by: Ainley

5. **Schedule**

Discussions took place with regard to the timing of the next Public Information Centre (PIC). Mr. Mullan noted the PIC schedule is subject to the completion of the technical reports. In addition, it was noted that the PIC would not be held in July or August due to summer vacations.

Mr. Mullan advised that, at the earlier Steering Committee meeting, it was suggested that a presentation to Council be arranged, to provide an update on the status of the study, similar to the presentation held in January 2015.

Action by: Township / Ainley

In response to a question from Mr. Scanlan, Mr. Mullan noted that a Council Presentation would be a brief overview of the Class EA to date. Mr. Mullan also confirmed that during Phase 3 of the Class EA process, "recommended alternatives" are identified for water, wastewater & transportation and that these recommended alternatives are then made available to the public, government agencies, special interest groups and stakeholders for review and comment as part of the Phase 3 PIC. After comments are received, the "recommended alternatives" are reviewed and "Preferred Alternatives" are identified. The "Draft" Environmental Study Report (ESR) is then prepared during Phase 4 of the Class EA process. The ESR documents the aforementioned process along identifying the "Preferred Alternatives" for water, wastewater and transportation.

Mr. Mullan noted that, once the “Draft” ESR is prepared, the Minister of Environment and Climate Change (MOECC) require it to be submitted to them for review before it is made available to the public. After comments are received from the MOECC, the ESR is then presented to Council for information in conjunction with being put on the public record for the 30-day mandatory review period.

If concerns regarding the ESR cannot be resolved during the 30-day mandatory review period, a person may request the MOECC for a Part II Order (formally known as a Bump Up). At that time, the Minister will take over the process and after reviewing all of the applicable information, will render a decision that is binding on all parties.

The general timelines associated with the resolution of a Part II Order was discussed and it was noted that each one varies, but that recent ones that Ainley have been involved have taken approximately 6 months. Mayor French, requested that a flow chart illustrating the process, including approximate timelines be prepared for discussion purposes at a future meeting.

Action by: Ainley

6. Other Business

Mr. Mullan advised the group that, based on discussions held at the earlier Steering Committee meeting, it was resolved that the Steering Committee meetings would start at 5:00 pm rather than 4:00 pm. As such, should the Steering Committee meeting not end before the scheduled start of the Resident Liaison Group Meeting, members are asked to wait in the lobby until the meeting adjourns.

7. Next Meeting

The next Resident Liaison Group Meeting is set for Thurs; May 12, 2016 @ 6:30m.

8. Adjournment

The meeting was adjourned at approximately 8:00 p.m.

Minutes prepared and finalized by:



J. A. Mullan
Ainley & Associates Limited

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PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Thursday, May 12, 2016**

LOCATION: Township Office

TIME: 6:30pm

INVITEES:

Councillor Sandy McConkey	-	Township of Springwater
Councillor Jack Hanna	-	Township of Springwater
Brent Spagnol	-	Township of Springwater
Heather Coleman	-	Township of Springwater
Shauna Dudding	-	Geranium Corporation
Alex Troop	-	Alliance Homes
Tiziano Zaghi	-	Residents Representatives
David Strachan	-	Residents Representatives
Gerald Scanlan	-	Residents Representatives
Regan Frankcom	-	Residents Representatives
Brad Kalus	-	Ainley Group
Joe Mullan	-	Ainley Group

ABSENT: Mayor Bill French, Deputy Mayor Don Allen, Robert Brindley, Mark Archer, Robert Wright

PURPOSE: Resident Liaison Group Meeting

1. Approval of Minutes of Mar. 10, 2016 Resident Liaison Group Meeting

No comments were provided on the minutes and therefore they are approved as printed.

2. Non-Technical Updates since last Resident Liaison Group Meeting (Mar. 10, 2016)

It was noted that there were no non-technical updates to report to the group from the last meeting.

3. Updates Regarding Clearance of Draft Plan Conditions

Mr. Spagnol noted that there were no Draft Plan condition clearance updates to report to the group from the last meeting.

4. Technical Updates since last Resident Liaison Group Meeting (Mar. 10, 2016)

4.1 Transportation

a. Hwy 400 & Forbes Road Interchange

Mr. Mullan reported that the Technical Report regarding the Hwy 400 & Forbes Road interchange was finalized and submitted to the MTO earlier this week. This Report concluded that:

- Widening of Forbes Rd & Russell Rd to four lanes and an upgraded interchange is required in conjunction with Phase 2, but is not required for Phase 1;
- Signalization plus eastbound and westbound turning lanes onto Hwy 400 South at the west ramp terminal in conjunction with the Phase 1.

Mr. Mullan advised that copies of the technical report will be made available to the group following the meeting.

Action By: Ainley

b. Craig Road Extension (including Forbes Road connection)

Mr. Mullan noted that a comprehensive number of alternative alignments have been developed. Each of which were divided into the following segments for the purposes of the evaluation; east of Russell Rd to Gill Rd, to Gill Rd, to Cty 27 and then the intersection with Cty 27.

Mr. Mullan advised that, given the varying challenges associated with each of the alternative alignments, the EA team will be presenting a short list of two or three of the better suited alternatives at the Phase 3 PIC to gather further public and agency input before selecting the preferred Alternative.

Mr. Scanlan noted that in his opinion the Forbes Rd bypass should not be routed north as drivers would take the most direct route south to Barrie through the community of Midhurst rather than take a bypass route that took them north before being able to head south to Barrie.

Mr. Scanlan also noted that if the Forbes Rd bypass was routed north it was very likely that developers would pressure the Township of Springwater to re-designate the green belt between the Doran Road development and the northern routed bypass to Residential use, thus adding even more homes and traffic in the Midhurst area. However, in response Mr. Mullan noted the strip of land immediately south of Craig Road (between Gill Rd & Russell Rd) is already designated future development within the Township Official Plan.

c. Intersection Improvements (including possible Roundabouts)

Mr. Mullan reported that the analysis of roundabouts versus traditional intersection improvements for each of the 11 intersections that were identified in Phases 1 & 2 of the EA is ongoing and that there were no new updates to present at this time.

d. Active Transportation (Trails & Bikes lanes)

Mr. Mullan advised that there were no further updates to report since the last Steering Committee Meeting. However, he noted that all roads, identified in the aforementioned Draft Staging of Road Improvement Plans, will include sidewalk(s) and/trails which will form the back bone of the proposed Active Transportation infrastructure.

e. Transit

Mr. Mullan advised that there were no further updates to report, at this time.

Mr. Strachan noted that residents are concerned with the existing roads will not be able to accommodate the future traffic volumes. Mr. Mullan responded by saying the various

traffic studies and traffic models developed to-date have identified a comprehensive list of road improvement recommendations that will be implemented to address future traffic conditions to ensure arterial/collector roads and associated intersections within Midhurst function properly in terms of capacity, operation and level of service. In addition, Mr. Mullan advised that other levels of government including MTO, Simcoe County and City of Barrie had reviewed and commented on the Phase 1 & 2 Class EA in 2009 and did not raise concerns with respect to the transportation improvements recommended.

In conclusion Mr. Scanlan asked that it be documented that a number of existing residents have concerns with the proposed transportation improvements not being able to accommodate the proposed traffic.

Action By: Ainley

In response to a question from Mr. Scanlan regarding triggers for the approval of development above the currently approved 3,850 units, Mr. Spagnol noted there are provisions established within the Midhurst Secondary Plan that must be satisfied first, including employment development and housing absorption targets, in order to permit an increase from 3,850 to 5,000 units. This is done through a comprehensive justification report prepared by the development group for the County and the Township approval.

After the completion of the aforementioned Technical Reports, all alternatives will be evaluated and Recommended Design Solutions will be compiled for presentation at the Phase 3 Public Information Centre.

Action By: Ainley

4.2 Water

- a. Mr. Mullan reported that the Hydrogeological Report has recently been updated to address a number of minor items but those items had no impact on the size and/or location of the proposed Municipal Wells identified with the previously circulated Hydrogeological Report.
- b. Mr. Mullan reported that the review and finalization of the Draft Technical Report regarding the Water Supply System Alternatives is nearing completion. Furthermore, Mr. Mullan stated that this report will be recommending two separate Water Treatment Plants (WTP); one located in the Doran Road neighborhood and the other in the Carson Road neighbourhood. This approach has the lowest Life Cycle costs and the lowest capital costs mostly because of the elimination of approximately 6 km of transmission mains between the two neighbourhoods.
- c. Mr. Mullan noted the review and finalization of the Draft Technical Report regarding the Evaluation of Water Supply and Water Treatment Alternatives is nearing completion. This report will be recommending the following:

Carson Area Neighborhood

- Construction of 3 production wells at the Sand and Gravel site with any 2 being capable of providing a total of 73 L/s to provide Phase 1 water demand,
- Construction of two production wells at West Snow Valley Site each capable of producing 8 L/s, complete with a raw water transmission main to the Sand and Gravel site,
- A WTP built at the Sand and Gravel Site (Snow Valley and Wilson Dr) to treat ground water from proposed Municipal Wells. The WTP will have an Ion

Exchange (IX) system for nitrate removal. The WTP will also include a filter system with special filter media for removal of iron and manganese. The disinfection system will include chlorine storage tank and a feed system;

- An Inground reservoir with a minimum 3,868 m³ storage capacity to provide emergency, fire storage and equalisation volume for peak hours for Phase 1 & 2;
- A pump station to provide the peak hourly demand of the Carson Area and to maintain the pressure range between 50 and 90 psi throughout the system. The pump station will also include fire pump(s) to provide the required fire flow of 133 L/s.

Mr. Mullan reported the capital costs associated with the Carson WTP are approximately \$10.8 Million for Phase 1 and an additional 6.0 Million for Phase 2.

Doran Area Neighborhood

- Construction of 3 production wells at the Alliance Well Site, with any 2 being capable of providing a total of 100 L/s, complete with a raw water transmission main to the WTP site;
- Construction of 3 production wells at the Old School Road Well Site with any 2 being capable of providing 40 L/s, complete with a raw water transmission main to the WTP site;
- A WTP to treat ground water from the aforementioned well sites. The WTP would include filter system with special filter media for removal of iron and manganese. The disinfection system would include chlorine storage and, feed system;
- An Inground reservoir, with a minimum 3,500 m³ for Phase 1 to provide emergency, fire storage and equalisation volume for peak hours, and for Phase 2 the storage volume would be expanded to 5,400 m³,
- A pump station to provide the peak hourly demand of the Doran Area and to maintain the pressure range between 50 and 90 psi throughout the system. The pump station will also include fire pump(s) to provide the required fire flow of 133 L/s.

Mr. Mullan reported the capital costs associated with the Doran WTP are approximately \$11.6 Million for Phase 1 and an additional 8.0 Million for Phase 2.

Mr. Mullan advised that copies of the updated technical reports will be made available to the group following the meeting.

Action By: Ainley

In response to a question from Mr. Scanlan, Mr. Mullan confirmed that the employment lands will be serviced by the Carson WTP.

In response to a question from Mr. Strachan, Mr. Mullan confirmed that the development group is responsible for the costs of constructing the WTP.

Once the aforementioned Technical Reports are finalized, the Recommended Design Alternatives and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action By: Ainley

4.3 Wastewater

a. **7Q20 Flow Assessment for Willow Creek**

Mr. Mullan reported that the 7Q20 Flow Assessment report has recently been updated with the 2015 flow data, which provides the required 10 years of the flow data for the calculation of 7Q20 flow in accordance with MOECC guidelines. Mr. Mullan noted that the values identified within this updated report are slightly higher than the values within the June 2015 Report (430L/s versus 405L/s). Mr. Mullan further advised that the slightly larger number is better as it identifies a slightly higher base flow.

b. **Willow Creek - Assimilative Capacity Study**

Mr. Mullan reported that the Willow Creek - Assimilative Capacity Study has recently been completed utilizing the updated information from the 7Q20 Report.

Mr. Mullan noted that various models were used within this study to model the mixing of ammonia, dissolved oxygen and assimilation (nitrification) of ammonia, plus complete a mass balance model for total phosphorus (TP) concentrations.

The report identifies that:

- the existing water quality record shows that the present-day 75th percentile concentration of total phosphorus in Willow Creek is 0.035 mg/L, and therefore it is considered a “Policy 2” receiver for TP.
- This report identifies that the effluent from the WWTP at full build out, would actually reduce total phosphorus concentrations within Willow Creek, under summer low flow conditions, from 0.035 to 0.034 mg/L or less (worse case scenario).

Mr. Mullan advised that the issue of total phosphorus (TP) loading to Willow Creek will be addressed as part of the Report regarding the Overall Phosphorus Budget for the Midhurst Secondary Plan Area.

c. **Wastewater Treatment Plant (including proposed treatment processes and effluent discharge criteria)**

Mr. Mullan reported that the preparation of the Report regarding the Wastewater Treatment Plant treatment processes and effluent discharge criteria utilizing the latest information from the 7Q20 Report and the Assimilative Capacity Study is nearing completion.

Mr. Mullan noted the liquid treatment train within a Wastewater Treatment Plant is the wastewater treatment process commencing at the head of the plant and finishing with the discharge of treated effluent at Willow Creek. Mr. Mullan advised that the forthcoming report will be recommending a preferred liquid treatment solution consisting of the following:

- A Step Feed Biological Nitrogen Removal (BNR) secondary process followed by Membrane tertiary treatment. In particular, the preliminary treatment includes screening and degritting and then the flow will be distributed to two main bioreactors that have four steps. Tertiary treatment will follow the secondary clarifier. As stated previously, it is recommended membrane filtration technology is acceptable technologies for the tertiary treatment. Final treatment will include UV disinfection before pumping to the discharge point.

Mr. Mullan reported the capital costs associated with the Wastewater Treatment Plant are \$55.0 Million for Phase 1 and an additional 40.0 Million for Phase 2.

d. Pumping Stations and Trunk Force mains

Mr. Mullan advised that there were no further updates to the Forcemain(s) routes from the East to the West from what was presented at the last meeting (Note the route of Finlay Mill Rd is still the recommended route as per the Phase 1 & 2 Report).

e. Cumulative Assessment Report of Phosphorous loading the Willow Creek

Mr. Mullan reported that the Draft Report regarding the Phosphorus Budget for the Midhurst Secondary Plan Area is nearing completion. Mr. Mullan also noted that the Work Plan (frame of the report) was agreed to by the NVCA and XCG at a recent meeting; therefore, subsequent to being received, a meeting will be arranged with the NVCA and XCG to review and discuss the report.

In response to a question from Mr. Strachan, Mr. Mullan confirmed that there is no safety concerns associated with locating the Carson WTP next to the WWTP.

After the completion of the aforementioned Technical Reports all alternatives will be evaluated and Recommended Design Solutions and Staging Plans will be prepared for presentation at the Phase 3 Public Information Centre.

Action By: Ainley

5. Schedule

Mr. Mullan presented the following key milestone dates for the completion of the Class EA.:

- A Council Presentation, providing a brief update on the status of the Class EA on Jun 15, 2016;
- The Phase 3 Public Information Centre (PIC) on Thursday June 30, 2016 (location yet to be determined);
- A 4-week comment period following the PIC (as opposed to the regulatory 2-week);
- Steering Committee and Resident Liaison Group meeting's in Sep. Oct & Nov.
- A Council Presentation, providing a brief update on the status of the Class EA on Dec, 2016;
- Open House No. 2 in January 2017;
- The formal 30 Day Public Review Period associated with the filing of the Environmental Study Report (ESR) from mid Jan 2017 to mid Feb 2017.
- Finalization of the Class EA process in March 2017 (assuming no Part II order is received).

Post Meeting Note: Subsequent to this meeting it was determined that the PIC would be postponed until Sept 2016.

6. Other Business

No other business was brought forward by the group.

Post Meeting Note: After the meeting Mr. Frankcom spoke with Mr. Mullan to convey his view that the Craig Road alignment would be better suited along the northern portion of the settlement boundary to avoid having a major arterial road next to the Doran development community. Also, Mr. Frankcom believes the extension of St. Vincent Street would be best delayed to help encourage traffic to utilize Forbes Road to Highway 400 rather than travelling south on St. Vincent. Other traffic calming measures, including stop new stop or signal control on St. Vincent at the various side road intersections may also help to deter traffic from travelling south.

7. Next Meeting

Mr. Mullan noted that new meeting dates have not been set yet; however, the next tentative meeting date is early Sept, 2016.

8. Adjournment

The meeting was adjourned at approximately 8:00pm.

Minutes prepared and finalized by:



J. A. Mullan
Ainley & Associates Limited

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PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Thursday, Oct 13, 2016**

LOCATION: Township Office

TIME: 6:30pm

INVITEES:

Mayor Bill French	-	Township of Springwater
Councillor Sandy McConkey	-	Township of Springwater
Robert Brindley	-	Township of Springwater
Mark Archer	-	Township of Springwater
Vimal Patel	-	Geranium Corporation
Mario Giampietri	-	Geranium Corporation
Alex Troop	-	Alliance Homes
Tiziano Zaghi	-	Residents Representatives
David Strachan	-	Residents Representatives
Robert Wright	-	Residents Representatives
Gerald Scanlan	-	Residents Representatives
Regan Frankcom	-	Residents Representatives
Brad Kalus	-	Ainley Group
Joe Mullan	-	Ainley Group

ABSENT:

Deputy Mayor Don Allen	-	Township of Springwater
Councillor Jack Hanna	-	Township of Springwater

PURPOSE: Resident Liaison Group Meeting

1. Review and Approval of Minutes (Revised) of May. 12, 2016 Resident Liaison Group Meeting

No comments were provided on the revised minutes and therefore they are approved as printed.

2. Non-Technical Updates since last Resident Liaison Group Meeting (May 12, 2016)

It was noted that there were no non-technical updates to report to the group from the last meeting.

3. Updates Regarding Clearance of Draft Plan Conditions

Mr. Brindley noted that there were no Draft Plan condition clearance updates to report to the group from the last meeting. However, the Township expects to start soon with the clearance process.

4. Overview of Public Information Centre (PIC) Display Boards

Mr. Mullan provided an overview of the PIC format, including the formal presentation which will be followed by a question and answer period. Mr. Mullan then proceeded to provide a high level review of the PIC display boards. The following comments were provided by the group.

- i) Copies of the display board (slides) will be posted on the Township's website following the PIC.

Action By: Ainley/Township

- ii) It was requested that Ainley summarize the Traffic count data on a number of key streets into an easily to read table. After a brief discussion regarding clarification Ainley noted that they will review and prepare such a table as part of updates reports.

Action By: Ainley

- iii) Slides 43 to 49 – add north arrow or turn image so north is to the top.

Action By: Ainley

- iv) Slide 54 – highlight location of railway crossing on CR 27, note distance between CR 27/Craig Road connection to CR27/Doran Road intersection.

Action By: Ainley

- v) Slide 55 – describe or add figure / schematic illustrating what on-road bike lanes look like, what buffered bike lanes look like and what a multi-use trail looks like. This could be done by using the bike lane figures provided in the OTM Book 18 or by adding example photographs from the internet or google earth.

Action By: Ainley

- vi) Slide 57 – add note that after Phase 4 of the EA, Phase 5 Implementation process (i.e. design and construction) may proceed.

Action By: Ainley

- vii) Suggest more time will be needed to present material and complete question and answer session.

- viii) Comments received at and following the PIC will be summarized for discussion purposes at the next meeting.

Action By: Ainley

- ix) Council input expected to occur between January 2017 to March 2017.

- x) Public comments shall become part of the Class EA file. The approach to circulating the summary of comments and responses to the public is yet to be confirmed.

5. Other Business

No other business was brought forward by the group.

6. Next Meeting

Next Resident Liaison Group Meeting set for Thurs; Dec 8, 2016 @ 6:30pm;

7. **Adjournment**

The meeting was adjourned at approximately 8:30 p.m.

Minutes prepared and finalized by:

Ainley & Associates Limited



J. A. Mullan, P.Eng.
President & CEO

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PROJECT: Township of Springwater
Midhurst– Class Environmental Assessment Phase 3 & 4
Ainley Project Number - 113027

DATE: **Thursday, Dec 08, 2016**

LOCATION: Township Office

TIME: 6:30pm

ATTENDEES:

Mayor Bill French	-	Township of Springwater
Deputy Mayor Don Allen	-	Township of Springwater
Councillor Sandy McConkey	-	Township of Springwater
Councillor Jack Hanna	-	Township of Springwater
Robert Brindley	-	Township of Springwater
Mark Archer	-	Township of Springwater
Vimal Patel	-	Geranium Corporation
Mario Giampietri	-	Geranium Corporation
Alex Troop	-	Alliance Homes
Tiziano Zaghi	-	Residents Representatives
David Strachan	-	Residents Representatives
Gerald Scanlan	-	Residents Representatives
Regan Frankcom	-	Residents Representatives
Joe Mullan	-	Ainley Group

PURPOSE: Resident Liaison Group Meeting

1. Review and Approval of Minutes of Oct 13, 2016 Resident Liaison Group Meeting

No comments were received on the minutes and therefore they are approved as printed.

2. Non-Technical Updates since last Resident Liaison Group Meeting (Oct 13, 2016)

It was noted that there were no non-technical updates to report to the group from the last meeting.

3. Updates Regarding Clearance of Draft Plan Conditions

It was noted that the no additional Draft Plan Conditions had been cleared by Township;

4. Overview of Public Information Centre (PIC) & Summary of Next steps

Mr. Mullan noted that approximately 160 individuals signed in at the Public Information Centre (PIC) that was held at Snow Valley Resort on Oct 18, 2016. Mr. Mullan also noted that overall the meeting went well in that people liked the opportunity to have a one-on-one with the Technical staff, as well as the formal presentation and Q&A period afterwards.

Mr. Mullan also noted that a total of 67 Comments were received during the official comment period (Oct 18 to Dec 1, 2016) via handwritten sheets, emails, and/or letters.

The schedule was discussed and Mr. Mullan noted the during the earlier Steering Committee meeting the following tentative schedule was generally agreed to:

- Steering Committee Meeting to be held mid-January 2017 to review and discuss draft response comments;
- Resident Liaison Group Meeting to be held mid February 2017 to present general response comments;
- Ainley would prepare the Draft Environmental Study Report by mid to late March 2017;
- The Township will review if Council can be briefed on the Draft Environmental Study Report, in a non-public forum, prior to its submission to MOECC;
- Submission of Draft Environmental Study Report to the MOECC in March/April 2017;

5. Other Business

No other business was brought forward by the group.

6. Next Meeting

It was noted that Mr. Brindley would review Councilor's agendas and then set new meeting dates in Jan and Feb, as noted earlier;

7. Adjournment

The meeting was adjourned at approximately 7:30 p.m.

Ainley & Associates Limited



J. A. Mullan, P.Eng.
President & CEO

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APPENDIX 'D'

Stage 1 Archaeological Assessment for the Proposed Craig Road Extension – Archeoworks Inc., June 8, 2016

ARCHEOWORKS INC.

**Stage 1 Archaeological Assessment for the
Proposed Craig Road Extension as part of the
Midhurst Class Environmental Assessment Phase 3 & 4
In the Geographic Township of Vespra
Historical County of Simcoe
Township of Springwater
County of Simcoe
Ontario**

**Project #: 091-MI1577-15
Licensee (#): Nimal Nithiyantham (P390)
PIF#: P390-0206-2016**

Original Report

June 8th 2016

Presented to:

Ainley & Associates
280 Pretty River Parkway
Collingwood, Ontario
L9Y 4J5
T: 705.445.3460

Prepared by:

Archeoworks Inc.
16715-12 Yonge Street, Suite 1029
Newmarket, Ontario
L3X 1X4
T: 416.676.5597
F: 416.676.5810

EXECUTIVE SUMMARY

Archeoworks Inc. was retained by *Ainley & Associates* to conduct a Stage 1 Archaeological Assessment (AA) for the proposed extension of Craig Road from Russell Road to County Road 27, as part of the Midhurst Class Environmental Assessment Phase 3 & 4. A total of 10 potential alignments have been proposed for this Class EA (*see Map 1*). All 10 alignments, including a 50-metre buffer around each option, will be investigated within this study, and will collectively be herein referred to as the “study area”. The study area is located within part of Lots 9 and 10, from Concessions 3 to 5 and Lots 25 to 26, Concession 2, in the Geographic Township of Vespra, historical County of Simcoe, Township of Springwater, County of Simcoe, Ontario.

Background research identified elevated potential for the recovery of archaeologically significant materials within the study area based on the close proximity (within 300 metres) of: historic structures, historic transportation routes, and secondary water sources.

To determine if the archaeological potential classification of the study area is relevant, a desktop review of ground conditions was undertaken using historical aerial photography and satellite imagery obtained through the Google Earth application. Both sources revealed that the study area has undergone various minor changes since 1954. Most notably, these changes include the construction of existing structures, roadways, roadside ditches/embankments, utilities, gravel shoulders/driveways, and parking areas. As these activities contribute to the removal of archaeological resources, the areas where these disturbances have occurred, if confirmed during an on-site property inspection, can become classified as “no archaeological potential”. Permanently wet areas associated with the various tributaries bisecting the study area were also identified; these areas also classified as having “no archaeological potential”. Where removal of archaeological resources and, thus, elimination of archaeological potential cannot be conclusively stated, Stage 2 testing will always be required. In the case of this study, Stage 2 testing will be required for those areas corresponding to ploughed agricultural fields, woodlots, overgrown grassed margins, areas of manicured grass and areas of heavy brush/vegetation.

In conclusion, the following recommendations are presented:

1. Areas that exhibit disturbed conditions (per *Section 1.3.1* of the *2011 S&G*) need to be confirmed through an on-site property inspection during a Stage 2 AA.
2. Lands evaluated as having no or low potential (per *Section 2.1, Standard 2.a* of the *2011 S&G*), need to be confirmed through an on-site property inspection during a Stage 2 AA.
3. All identified areas which contain archaeological potential, must be subjected to a Stage 2 AA.

The agricultural fields will require pedestrian survey at five metre intervals, which involves systematically walking ploughed areas and mapping and collecting any artifacts found on

the ground surface. The land must be recently ploughed and subjected to the appropriate weathering requirements, in accordance with *Section 2.1.1* of the *2011 S&G*, in advance of pedestrian archaeological survey.

Where ploughing in advance of pedestrian archaeological survey will not be possible, such as the woodlots, overgrown grassed margins, areas of manicured grass and areas of heavy brush/vegetation, these areas will need to be subjected to a Stage 2 shovel test pit survey at five metre intervals, in accordance with *Section 2.1.2* of the *2011 S&G*.

No construction activities shall take place within the study area prior to the *Ministry of Tourism, Culture and Sport* (Archaeology Program Unit) confirming in writing that all archaeological licensing and technical review requirements have been satisfied.

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PROJECT CONTEXT

1.1 Objective

The objectives of a Stage 1 Archaeological Assessment (AA), as outlined by the 2011 *Standards and Guidelines for Consultant Archaeologists* ('2011 S&G') published by the *Ministry of Tourism, Culture, and Sport (MTCS)* (2011), are as follows:

- To provide information about the property's geography, history, previous archaeological fieldwork and current land condition;
- To evaluate in detail the property's archaeological potential, which will support recommendations for Stage 2 survey for all or parts of the property; and
- To recommend appropriate strategies for Stage 2 survey.

1.2 Development Context

Archeoworks Inc. was retained by *Ainley & Associates* to conduct a Stage 1 AA for the proposed extension of Craig Road from Russell Road to County Road 27, as part of the Midhurst Class Environmental Assessment Phase 3 & 4. A total of 10 potential alignments have been proposed for this Class EA (*see Map 1*). All 10 alignments, including a 50-metre buffer around each option, will be investigated within this study, and will collectively be herein referred to as the "study area". The study area is located within part of Lots 9 and 10, from Concessions 3 to 5 and Lots 25 to 26, Concession 2, in the Geographic Township of Vespra, historical County of Simcoe, Township of Springwater, County of Simcoe, Ontario (*see Appendix A – Map 2*). Currently, the Township of Springwater does not have an archaeological management plan (AMP).

This study was triggered by the *Environmental Assessment Act*. This Stage 1 AA was conducted under the project direction of Mr. Nimal Nithiyantham, under the archaeological consultant licence number P390, in accordance with the *Ontario Heritage Act* (2009). Permission to investigate the study area was granted by *Ainley & Associates* on May 3rd, 2016.

1.3 Historical Context

To establish the archaeological and historical significance of the study area, *Archeoworks Inc.* conducted a comprehensive review of Aboriginal and Euro-Canadian settlement history, local history, designated and listed heritage properties, commemorative markers, as well as consulted with available historical mapping. Furthermore, an examination of registered archaeological sites and previous AAs within close proximity to its limits, and review of the physiography of the overall area and its correlation to locating archaeological remains, was performed.

The results of this background research are documented below and summarized in **Appendix B – Summary of Background Research**.

1.3.1 Pre-Contact Period

1.3.1.1 The Paleoindian Period (ca. 11,000 to 7,500 B.C.)

The region in which the study area is situated was first inhabited after the final retreat of the North American Laurentide ice sheet 15,000 years ago (or 13,000 B.C.) (Stewart, 2013, p.24). Initial vegetation of the majority of Southern Ontario was tundra-like. As the average climatic temperature began to warm, small groups of Paleoindians entered Southern Ontario (Karrow and Warner, 1990, p.22; Stewart, 2013, p.28). Generally, Paleoindians are thought to have been small groups of nomadic hunter-gatherers who depended on naturally available foodstuffs such as game or wild plants (Ellis and Deller, 1990, p.38). For much of the year, Paleoindians “hunted in small family groups; these would periodically gather into a larger grouping or bands during a favourable period in their hunting cycle, such as the annual caribou migration” (Wright, 1994, p.25).

Paleoindian sites are extraordinarily rare and consist of “stone tools clustered in an area of less than 200-300 metres” (Ellis, 2013, p.35). These sites appear to have been campsites used during travel episodes and can be found on well-drained soils in elevated situations, which would have provided a more comfortable location in which to camp and view the surrounding territory (Ellis and Deller, 1990, p.50). Traditionally, Paleoindian sites have been located primarily along abandoned glacial lake strandlines or beaches. However, this view is biased as these are only areas in which archaeologists have searched for sites, due to the current understanding of the region’s geological history (Ellis and Deller, 1990, p.50; Ellis, 2013, p.37). In areas where attention has been paid to non-strandline areas and to older strandlines, sites are much less concentrated and more ephemeral (Ellis and Deller, 1990, p.51).

Artifact assemblages from this period are characterized by fluted and lanceolate stone points, scrapers, and small projectile points produced from specific chert types (Ellis and Deller, 1990). Distinctive dart heads were used to kill game, and knives were used for butchering and other tasks (Wright, 1994, p.24). These items were created and transported over great distances while following migratory animals within a massive territory.

1.3.1.2 The Archaic Period (ca. 7,800 to 500 B.C.)

As the climate continued to warm, deciduous trees slowly began to permeate throughout Southern Ontario, creating mixed deciduous and coniferous forests (Karrow and Warner, 1990, p.30). The “Archaic peoples are the direct descendants of Paleoindian ancestors” having adapted to meet new environmental and social conditions (Ellis, 2013, p.41; Wright, 1994, p.25). The Archaic period is divided chronologically and cultural groups are divided geographically and sequentially. Archaic Aboriginals lived in “hunter-gatherer bands whose social and economic organization was probably characterized by openness and flexibility” (Ellis et al., 1990, p.123). This fluidity creates ‘traditions’ and ‘phases’ which encompasses large groups of Archaic Aboriginals (Ellis et al., 1990, p.123).

Few Archaic sites have faunal and floral preservation; hence lithic scatters are often the most commonly encountered Archaic Aboriginal site type (Ellis et al., 1990, p.123). House structures

have “left no trace” due to the high acidic content of Ontario soils (Wright, 1994, p.27). Burial/grave goods and ritual items appear, although very rarely. By the Late Archaic, multiple individuals were interred together suggesting semi-permanent communities were in existence (Ellis, 2013, p.46). Ceremonial and decorative items also appear on Archaic Aboriginal sites through widespread trade networks, such as conch shells from the Atlantic coast and galena from New York (Ellis, 2013, p.41). Through trade with the northern Archaic Aboriginals situated around Lake Superior, native copper was initially utilized to make hooks and knives but gradually became used for decorative and ritual items (Ellis, 2013, p.42).

During the Archaic period, stone points were reformed from fluted and lanceolate points to stone points with notched bases to be attached to a wooden shaft (Ellis, 2013, p.41). The artifact assemblages from this period are characterized by a reliance on a wide range of raw lithic materials in order to make stone artifacts, the presence of stone tools shaped by grinding and polishing, and an increase in the use of polished stone axes and adzes as wood-working tools (Ellis et al., 1990, p.65; Wright, 1994, p.26). Ground-stone tools were also produced from hard stones and reformed into tools and throwing weapons (Ellis, 2013, p.41). The bow and arrow was first used during the Archaic period (Ellis, 2013, p.42).

1.3.1.3 The Early Woodland Period (ca. 800 to 0 B.C.)

Early Woodland cultures evolved out of the Late Archaic period (Ferris and Spence, 1995, p.89; Spence et al., 1990, p.168). The Early Woodland period is divided into two complexes: the Meadowood complex and the Middlesex complex. The Middlesex complex appears to be restricted to Eastern Ontario, particularly along the St. Lawrence River while Meadowood materials depict a broad extent of occupation in southwestern Ontario (Spence et al., 1990, p.134, 141). The distinguishing characteristic of the Early Woodland period is the introduction of pottery (ceramics). The earliest forms were coil-formed, “thick, friable and often under fired, and must have been only limited to utility usage” (Ferris and Spence, 1995, p.89; Williamson, 2013, p.48).

Cache Blades, a formal chipped stone technology, and side-notched Meadowood points, were commonly employed tools that were often recycled into a number of other tool forms such as end scrapers (Spence et al., 1990, p.128; Ferris and Spence, 1995, p.93). These tools were primarily formed from Onondaga chert (Spence et al., 1990, p.128). Meadowood sites have produced a distinctive material culture that functioned in both domestic and ritual spheres (Ferris and Spence, 1995, p.90; Spence et al., 1990, p.128). This allows correlations to be made between habitations and mortuary sites, creating a well-rounded view of Meadowood culture (Ferris and Spence, 1995, p.90; Spence et al., 1990, p.128). However, their settlement-subsistence system is poorly understood as only a “few settlement types have been adequately investigated, and not all of these are from the same physiographic regions” (Ferris and Spence, 1995, p.93; Spence et al., 1990, p.136). Generally, Meadowood sites are in association with the Point Peninsula and Saugeen complexes which “then eventually changed or were absorbed into the Point Peninsula complex” (Wright, 1994, pp.29-30).

1.3.1.4 The Middle Woodland Period (ca. 200 B.C. to A.D. 900)

During the Middle Woodland period, three primary cultural complexes developed in Southern Ontario. The Couture complex was located in the southwestern-most part of Ontario (Spence et al., 1990, p.143). The Point Peninsula complex was “distributed throughout south-central and eastern Southern Ontario, the southern margins of the Canadian Shield, the St. Lawrence River down river to Quebec City, most of southeastern Quebec, along the Richelieu River into Lake Champlain” (Spence et al., 1990, p.157; Wright, 1999, p.633). The Saugeen complex occupied “southwestern Southern Ontario from the Bruce Peninsula on Georgian Bay to the north shore of Lake Erie to the west of Toronto” (Wright, 1999, p.629; Wright, 1994, p.30).

The Saugeen and Point Peninsula cultures appear to have shared Southern Ontario but the borders between these three cultural complexes are not well defined, and many academics believe that the Niagara Escarpment formed a frontier between the Saugeen complex and the Point Peninsula complex (Spence et al., 1990, p.143; Wright, 1999, p.629; Ferris and Spence, 1995, p.98). Consequently, the dynamics of hunter-gatherer societies shifted territorial boundaries resulting in regional clusters throughout Southern Ontario that have been variously assigned to Saugeen, Point Peninsula, or independent complexes (Spence et al., 1990, p.148; Wright, 1999, p.649).

Middle Woodland pottery share a preference for stamped, scallop-edged or tooth-like decoration, but each cultural complex had distinct pottery forms (such as globular pots), finishes, and zones of decoration (Williamson, 2014, p.49; Ferris and Spence, 1995, p.97; Spence et al., 1990, p.143). Major changes in settlement-subsistence systems occurred during the Middle Woodland period, particularly the introduction of large ‘house’ structures and substantial middens associated with these structures (Spence et al., 1990, p.167; Ferris and Spence, 1995, p.99). The larger sites likely indicate a prolonged period of macroband settlement and a more consistent return to the same site, rather than an increase in band size (Spence et al., 1990, p.168). Environmental constraints in different parts of Southern Ontario all produced a common implication of increased sedentism caused by the intensified exploitation of local resources (Ferris and Spence, 1995, p.100). Burial offerings became more ornate and encompassed many material mediums, including antler, whetstones, copper, and pan pipes (Ferris and Spence, 1995, p.99). Burial sites during this time were set away from occupation sites and remains were interred at time of death; secondary burials were not common (Ferris and Spence, 1995, p.101). Small numbers of burial mounds are present, particularly around Rice Lake, and both exotic and utilitarian items were left as grave goods (Williamson, 2013, p.51; Ferris and Spence, 1995, p.102).

1.3.1.5 The Late Woodland Period (ca. A.D. 900 to 1600)

At the onset of the Late Woodland Period, the transitional Princess Point complex arrived in Ontario. Sites attributed to the Princess Point complex exhibit few continuities from earlier developments. These sites appear to have arisen suddenly and suggest a well-developed state with no apparent predecessors. It is hypothesised that this complex migrated into Ontario, possibly from the southwest. The material culture includes ‘Princess Point Ware’ vessels that are collarless, with everted rims and semi-conical bases. Decorations include horizontal lines with an

encircling row of circular exterior punctates. Smoking pipes and ground stone tools are rare. Triangular arrow points predominate the lithic assemblage, where some exhibit weakly notched bases. Subsistence patterns include the hunting of deer, bear, squirrels and fish with gathering of berries. Corn horticulture has been attributed to the Princess Point complex. Little is known about the settlement patterns, but it has been suggested that they followed a pattern of warm season macroband and cold season microband dispersal (Fox, 1990, pp.174-179).

During the Late Woodland Period (A.D. 900-1600), multiple sub-stages, and complexes have been assigned, which are divided spatially and chronologically (Fox, 1990; Williamson, 1990; Dodd et al., 1990; Warrick, 2000). Although several migration theories have been suggested explaining the Ontario Iroquoian origins, an “available date from Southern Ontario strongly suggests continuity (*in situ*) from the Middle-Late Woodland Transitional Princess Point complex and Late Woodland cultural groups” (Ferris and Spence, 1995, p.105; Smith, 1990, p.283).

1.3.1.6 The Early Ontario Iroquois Stage (ca. A.D. 900 to 1300)

Two primary cultural groups have been assigned to the Early Ontario Iroquois Period and were located in Southern Ontario. The Glen Meyer cultural group was located primarily in southwestern Ontario, whose territory “encompassed a portion of southwestern Ontario extending from Long Point on the north shore of Lake Erie to the southeastern shore of Lake Huron” (Williamson, 1990, p.304). The Pickering cultural group is “thought to be much larger encompassing all of the region north of Lake Ontario to Georgian Bay and Lake Nipissing” (Williamson, 1990, p.304). Regional clusters of these groups appear within riverine or lacustrine environments with a preference for sandy soils.

The material culture of Early Iroquois consisted of well-made and thin-walled clay vessels that were more globular in shape with rounded bottoms. These vessels were produced by modelling rather than coil-formed. Decorative stamping, incising, and punctation along the exterior and interior rim region of the vessels were favoured. Material cultural remains also included crudely made smoking pipes, gaming discs, triangular-shaped, concave projectile chert points, and worked bone and antlers. House structures gradually became larger, longer, and wider but variations depended on settlement type and season of occupation. Subsistence patterns indicate a quick adoption of a greater variety of harvest products. Burial practices during this period saw an evolution to the ossuary burials; however burial patterns are still not well understood (Williamson, 1990, pp.304-311).

1.3.1.7 The Middle Ontario Iroquois Stage (ca. A.D. 1300 to 1400)

The Middle Ontario Iroquois began “with the fusion of [Glen Meyer and Pickering] caused by the conquest and absorption of Glen Meyer by Pickering” (Dodd et al., 1990, p.321). This fusion resulted in two cultural horizons located throughout most of Southern Ontario and lasting approximately 100 years. Within these 100 years, two cultural groups were present and divided chronologically into two 50-year timespans: the Uren sub-stage (A.D. 1300-1350) and the Middleport sub-stage (A.D. 1350-1400). The chronology of this stage has been contested and reflects a probable overlap with earlier stages. It is theorized that the Uren sub-stage represents a fusion of Glen Meyer and Pickering branches of the Early Ontario Iroquois while the Middleport

sub-stage gave rise to the Huron, Petun, Neutral groups of the Late Ontario Iroquois stage (Dodd et al., 1990, pp.321, 356).

Uren sites are distributed throughout much of southwestern and southcentral Ontario, and generally coincide with Early Ontario Iroquoian Stage sites. Middleport sites generally correlate with Uren sites, representing a continuation of local cultural sequences. The material culture of the Uren sub-stage includes rolled rim clay vessels with horizontal indentation on the exterior of the vessel; pipes that gradually improve in structure; gaming discs; and projectile points that favour triangular points. The material culture of Middleport sub-stage includes collared vessels decorated with oblique and horizontal indentation; a well-developed clay pipe complex that includes effigy pipes; and a marked increase in notched projectile points (Dodd et al., 1990, p. 330-342).

Settlement patterns of the Uren sub-stage reflect a preference for sand plains and do not appear to have had defensive palisades surrounding clusters of small longhouses. Subsistence patterns indicate an increasing reliance on corn cultivation, suggesting villages were occupied in the winter and campsites were occupied during the spring to fall. Settlement patterns of the Middleport sub-stage reflect a preference for drumlinized till plains. Small villages are present where palisades first appear, and longhouses are larger than those found in the Uren sub-stage. Subsistence patterns reflect an increasing reliance on corn and beans with intensive exploitation of locally available land and water species. Burial patterns graduate to ossuaries by the Middleport sub-stage (Dodd et al., 1990, pp.342-356).

1.3.1.8 The Late Ontario Iroquois Stage (ca. A.D. 1400 to 1600)

During the Late Ontario Iroquoian Stage, the Iroquoian-speaking linguistic and cultural groups developed. Prior to European Contact, neighbouring Iroquois-speaking communities united to form several confederacies known as the Huron (Huron-Wendat), Neutral (called Attiawandaron by the Wendat), Petun (Tionnontaté or Khionontateronon) in Ontario, and the Five Nations (later Six Nations) of the Iroquois (Haudenosaunee) of upper New York State (Birch, 2010, p.31; Warrick, 2013, p.71). These groups are located primarily in south and central Ontario. Each group was distinct but shared a similar pattern of life already established by the 16th century (Trigger, 1994, p.42).

Prior to European contact, the geographic distribution of pre-contact Ontario Iroquoian sites describes two major groups east and west of the Niagara Escarpment: the ancestral Attiawandaron to the west, and the ancestral Huron-Wendat to the east (Warrick, 2000, p.446). Ancestral Huron-Wendat villages have been located as far east as the Trent River watershed, where “concentrations of sites occur in the areas of the Humber River valley, the Rouge and Duffin Creek valleys, the lower Trent valley, Lake Scugog, the upper Trent River and Simcoe County” (Ramsden, 1990, p.363). These concentrations are distributed in a triangular area along the north shore of Lake Ontario and northward bounded by the Trent River system and the Niagara Escarpment (Ramsden, 1990, p.363).

To traverse their territory, the Huron-Wendat used multiple trails, portage and watercourse routes throughout their territory to travel from the north shores of Lake Ontario inland to the upper Great Lakes. These trail systems included the 'Nine-Mile Portage' from Kempenfeldt Bay to Willow Creek, a branch of the Nottawasaga River that connected Lake Ontario to Lake Huron through Simcoe County (Hunter, 1909a, p.80).

Settlement types included longhouse, whose sizes depended on the size of the extended family that inhabited it; however, archaeological evidence suggests that the average longhouse was 25 feet by 100 feet, with heights about the same as widths (Heidenreich, 1978, p.366). Village size gradually enlarged as horticulture began to take on a more central importance in subsistence patterns, particularly the farming of maize, squash, and beans, supplemented by fishing, hunting, and gathering. Sites were chosen for their proximity to sources of "water, arable soils, available firewood, [and] a young secondary forest, [as well as] a defendable position" (Heidenreich, 1978, p.375). Later villages consisted of up to 100 longhouses clustered closely together, and only the largest villages on the frontier were fortified (Heidenreich, 1978, p.377).

Subsistence patterns reflect a horticultural diet that was supplemented with fish rather than meat (Heidenreich, 1978, p.377). 'Slash-and-burn' farming was used to quickly and efficiently clear trees and brushwood for flour and flint corn fields (Heidenreich, 1978, p.380). These were consistently cultivated until no longer productive, at which point the village was abandoned, an event that took place about every eight to 12 years (Heidenreich, 1978, p.381). Consequently, as horticulture became the primary mode of subsistence, pre-contact native groups gradually relocated from the northern shores of Lake Ontario to further inland, likely as a result of depleting resources and growing aggression between native communities.

1.3.2 Contact Period (ca. A.D. 1600 to 1650)

At the time of European Contact, the area "south of Lake Simcoe and along the north shore of Lake Ontario remained a no-man's land during this period, with no permanent settlements and traversed only by raiding parties from the north or from the south" (Robinson, 1965, p.11). The Huron-Wendat villages were located north of Lake Simcoe, and their territorial hunting grounds stretched roughly between the Canadian Shield, Lake Ontario and the Niagara Escarpment (Warrick, 2008, p.12). The Haudenosaunee were primarily located south of Lake Ontario but hunted in the lands north of Lake Ontario.

Records left by explorers, Jesuit missionaries, and fur traders provide a history of Euro-Canadian involvement in territory identified as Huron-Wendat. By 1609, Samuel de Champlain had encountered the Huron-Wendat north of Lake Simcoe, and desiring greater quantities of furs, the French initiated a trading relationship with the Huron-Wendat (Trigger, 1994, p.68; Heidenreich, 1978, p.386). By mid-1620, the Huron-Wendat had exhausted all available pelts in their own hunting territories and opted to trade European goods for tobacco and furs from their neighbours (Trigger, 1994, pp.49-50). During the 1630s, Jesuit missionaries attempted to convert the entire Huron-Wendat Confederacy to Christianity as the initial phase of a missionary endeavour to convert all native people in Southern Ontario (Trigger, 1994, p.51). However, the Jesuits' presence in the region became precarious after a series of major epidemics of European

diseases killed nearly two-thirds of the Wendat population (Warrick 2008, p.245; Heidenreich, 1978, p.369).

By 1645, having grown dependent on European goods and with their territory no longer yielding enough animal pelts, the Haudenosaunee became increasingly aggressive towards the Huron-Wendat Confederacy (Trigger, 1994, p.53). Armed with Dutch guns and ammunition, the Haudenosaunee engaged in warfare with the Huron-Wendat Confederacy and brutally attacked and destroyed several Huron-Wendat villages throughout Southern Ontario (Trigger, 1994, p.53). After the massacres of 1649-50, the small groups that remained of the Huron-Wendat Confederacy became widely dispersed throughout the Great Lakes region, ultimately resettling in Quebec (Schmalz, 1991, p.17). After the massacres of 1649-50, and “for the next forty years, the Haudenosaunee used present-day Ontario to secure furs with the Dutch, then with the English” (Smith, 2013, p.19; Schmalz, 1991, p.17; Coyne, 1895, p.20).

1.3.3 Post Contact Period (ca. A.D. 1650 – 1800)

Although their homeland was located south of the lower Great Lakes, the Haudenosaunee controlled most of Southern Ontario after the 1660s, occupying at “least half a dozen villages along the north shore of Lake Ontario and into the interior” (Schmalz, 1991, p.17; Williamson, 2013, p.60). The Haudenosaunee established “settlements at strategic locations along the trade routes inland from the north shore of Lake Ontario. Their settlements were on canoe-and-portage routes that linked Lake Ontario to Georgian Bay and the upper Great Lakes” (Williamson, 2013, p.60). As a consequence of the French being allies of the Huron-Wendat, the Haudenosaunee prevented French explorers and missionaries from utilizing the St. Lawrence River and traveling within their territory north of Lake Ontario (Lajeunesse, 1960, p.xxix).

At this time, several Algonquin-speaking linguistic and cultural groups within the Anishinaabeg (or Anishinaabe) began to challenge the Haudenosaunee dominance in the region (Johnston, 2004, pp.9-10; Gibson, 2006, p.36). The Anishinaabeg were originally located primarily in Northern Ontario. Before contact with the Europeans, the Ojibwa territorial homeland was situated inland from the north shore of Lake Huron, particularly near Sault Ste. Marie (MNCFN, ND, p.3; Hunter, 1909a, p.10). The English referred to those Algonquin-speaking linguistic and cultural groups that settled in the area bounded by Lakes Ontario, Erie, and Huron as Chippewas or Ojibwas (Smith, 2002, p.107). In 1640, the Jesuit fathers had recorded the name “*oumisagai*, or Mississaugas, as the name of an Algonquin group near the Mississagi River on the northwestern shore of Lake Huron, in Algoma District (Hunter, 1909a, p.10). The French, and later English, applied this same designation to all Algonquian [-speaking groups] settling on the north shore of Lake Ontario” (Smith, 2002, p. 107; Smith, 2013, pp.19-20). “The term ‘Mississauga’ perplexed the Algonquins, or Ojibwas, on the north shore of Lake Ontario, who knew themselves as the Anishinaabeg” (Smith, 2013, p.20).

A major smallpox epidemic combined with the capture of New Netherland by the English, access to guns and powder became increasingly restricted for the Haudenosaunee. After a series of successful attacks against the Haudenosaunee by groups within the Anishinaabeg, the Haudenosaunee dominance in the region began to fail (Warrick, 2008, p.242; Schmalz, 1991,

p.20). Prior to 1680, groups within the Anishinaabeg had begun to settle just north of the evacuated Huron-Wendat territory and with the English entering the fur-trading market, began to expand further into Southern Ontario (Gibson, 2006, p.36; Schmalz, 1991, p.18). By the 1690s, Haudenosaunee settlements along the northern shores of Lake Ontario were abandoned (Williamson, 2013, p.60). By 1701, after a series of successful battles throughout Ontario, the Haudenosaunee were defeated and expelled from Ontario (Gibson, 2006, p.37; Schmalz, 1991, p.27; Coyne, 1895, p.28). After these battles, the Anishinaabeg replaced the Haudenosaunee in Southern Ontario (Schmalz, 1991, p.29).

In 1701, representatives of several groups within the Anishinaabeg and the Haudenosaunee, collectively known as the First Nations, assembled in Montreal to participate in Great Peace negotiations, sponsored by the French (Johnston, 2004, p.10; Trigger, 2004, p.58). The Mississaugas were granted sole possession of the territory along and extending northward of Lake Ontario and Lake Erie (Hathaway, 1930, p.433). The Ojibway settled in County of Simcoe (Hunter, 1909a, p.10).

The Seven Years War brought warfare between the French and British in North America. In 1763, the Royal Proclamation declared the Seven Years War over, giving the British control of New France. The British did not earn the respect of the Anishinaabeg, as the British did not honour fair trade nor the Anishinaabeg occupancy of the land as the French had. Consequently, the Pontiac Uprising, also known as the Beaver Wars, began that same year (Schmalz, 1991, p.70; Johnston, 2004, pp.13-14). This uprising involved both groups within the Haudenosaunee and groups within the Anishinaabeg. After numerous attacks on the British, the Pontiac Uprising was over by 1766 when a peace agreement was concluded with Sir William Johnson, the Superintendent of Indian Affairs (Schmalz, 1991, p.81). The fur-trade continued throughout Southern Ontario until the beginning of British colonization.

1.3.4 Euro-Canadian Settlement Period (A.D. 1800 to present)

After the American War of Independence in the late 1700s, United Empire Loyalists and American immigrants began to move into Southern Ontario, putting greater demand on the quantity of lands available for settlement within Upper Canada. Early settlement occurred primarily along the Lake Ontario shoreline. In 1793, Lieutenant-Governor John Graves Simcoe arrived at the entrance of Penetanguishene Bay and sought to establish a fort in this easily defensible location should the Americans provoke an attack from the south. In 1798, William Claus, Superintendent of Indian Affairs, bargained on behalf of the British Government for a tract of land adjacent to the harbour of Penetanguishene, and purchased the tip of the peninsula for cloth, blankets and kettles valued at £101 of Quebec currency (Surtees, 1994, p.109; Pencen Museum, 2013; Hunter, 1909a, p.12).

In 1810, North West Company, a fur trade company, began to complain about American customs officers interfering along the route to the west via Lake Ontario, the Niagara River, Lake Erie and the Detroit River. The British government proposed a new route that would largely utilize existing native trail systems, such as the Toronto Carrying Place trail, which linked Lake Ontario to Lake Simcoe by ways of the Rouge River or Humber River to the Holland River, to avoid American

customs officials. This proposed route would require the construction of a road from Lake Simcoe to the Fort at Penetanguishene. In 1811, William Claus reached an agreement with the Lake Simcoe Ojibwa at a cost of £4,000. However, the War of 1812 broke out and the agreement was not finalized until 1815. This treaty was known as the Lake Simcoe Purchase and included the east part of the Township of Vespra (Surtees, 1994, p. 111; Hunter, 1909a, p.84; N.A. 1891, p.lviii).

After the War of 1812, a second wave of settlers arrived in Upper Canada. Between 1815 and 1824 the non-Aboriginal population doubled as a result of heavy immigration from Britain (Surtees, 1994, p. 112). In 1818, William Claus assembled an Ojibwa council and “asked for over a million hectares to the west and south of Lake Simcoe” (Surtees, 1994, p. 115; Hunter, 1909a, p.14). At this council, William Claus advised settlement would take several years and the Aboriginals residing in the area were still able to occupy the area while receiving annual clothing and the usual presents distributed by the King (Surtees, 1994, p. 116). The government agreed to pay an annuity of £1200 currency in goods (Surtees, 1994, p.116; Hunter, 1909a, p. 15). This tract included 1, 592,000 acres of land containing the majority of the County of Simcoe, and was known as the Lake Simcoe-Nottawasaga Treaty. This treaty included the west part of the Township of Vespra (Hunter, 1909a, p.15; Surtees, 1994, p.103; N.A., 1891, p. xxiv).

Township of Vespra was surveyed by several individuals beginning in 1811 and completed by 1835. In 1811, Samuel S. Wilmot was instructed to survey a road leading from Kempenfeldt Bay to Penetanguishene Harbour and lay lots on either side of the road for settlement purposes. In 1820, James G. Chewett partially surveyed Vespra and in 1835, John Goessman continued the survey of Vespra. Consequently, the survey of the township was inconsistent with some half lots receiving more acres while others fell short (Anderson and Anderson, 1987, pp.25-26, 41).

The Township of Vespra contained 67,720 acres and settlement in the township did not occur until after the War of 1812. By 1819, a series of settlements were established along Penetanguishene Road. Most of the Township of Vespra’s Euro-Canadian development is tied to the establishment of Barrie as a military port during the War of 1812 and the township did not progress until the 1830s. In 1847, a stage coach service was introduced which utilized Penetanguishene Road to allow passengers to commute from Holland’s Landing to Penetanguishene Harbour. By 1850, the Township of Vespra had doubled its population to 1,254 individuals, but the cultivated land did not increase proportionately. In 1859, Vespra became a separate municipality from the Townships of Flos, and Sunnidale and a new town hall was built in Midhurst (Belden, 1881, pp.7-8; Anderson and Anderson, 1987, pp.55, 111-112; Smith, 1851, p.56).

As the Township of Vespra continued to develop, small clusters of settlements began to appear throughout the Township such as Midhurst, located at the intersection of Highway 26 and Bayfield Street, and lies southwest of the study area. In 1825, a saw and grist mill was constructed on the banks of Willow Creek by subscriptions from settlers and was operated by George Oliver, and John and Thomas Mair. This community was first known as Oliver’s Mills. Soon, four additional mills, a soap factory, a distillery and two hydro plans were established in the community. In 1864, George Sneath a settler from Midhurst, England suggested the community

be renamed to Midhurst to honor himself and the original 16 settlers from Midhurst, England. The lumber industry thrived in the area and Midhurst grew to include four taverns, a blacksmith shop, post office, three churches, several schools and a general store (Hunter, 1909b, pp.210-211; Midhurst Community, 2016).

1.3.5 Past Land Use

To assess the study area's potential for the recovery of historic pre-1900 remains, the 1881 *Simcoe Supplement in Illustrated Historical Atlas of the Dominion of Canada* was reviewed (*see Map 3*). This mapping revealed that the study area was located along original road allowances established during the survey of the Township of Vespra. Where the study area extends outside the open road allowances, it falls within lands owned by several property owners (*see Table 1*). It should be kept in mind, however, that not all historic features would have been depicted in the Township of Vespra as this resource required a paid subscription from the residents in the County of Simcoe for inclusion (Benson, N.D., p.4). It must be noted that Lots 9 and 10 are incorrectly identified within the Simcoe Supplement as Lots 10 and 11, respectively. **Table 1** provides the corrected Lot identification

Table 1: Historic Structures within the Study Area in the 1881 Simcoe Supplement

Con.	Lot	Occupant/Owner	Structure(s)
2	25, all	Unlisted	No structures
2	26, all	Unlisted	No structures
3	9, all	John (Jno.) Russell	No structures
3	10, all	Unlisted	No structures
4	9, east half	E. Dwyer	No structures
4	9, west half	R. McGowan	No structures
4	10, east half	Unlisted	No structures
4	10, west half	J. Robinson	No structures
5	9, all	James (Jas.) McCraigh	No structures
5	10, all	Unlisted	No structures

According to the 1881 *Simcoe Supplement*, no historic structures were situated within the study area. An additional four historic homesteads, a saw mill, and a blacksmith shop were depicted within 300 metres of the study area. Additionally, the study area is located along four historic roadways: Bayfield Street, Gill Road, Russell Road and Craig Road; which were originally laid out during the survey of Township of Vespra.

In Southern Ontario, the 2011 *S&G* considers areas of early Euro-Canadian settlements (e.g., pioneer homesteads, isolated cabins, farmstead complexes, early wharf or dock complexes, pioneer churches, and early cemeteries), early historic transportation routes (e.g., trails, passes, roads, railways, portage routes), and properties that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations to be of elevated archaeological potential (per *Section 1.3.1* of the 2011 *S&G*). Therefore, based on the close proximity to both historic settlements and historic transportation routes, there is elevated

potential for the location of Euro-Canadian archaeological resources (pre-1900) within portions of the study area which lie within 300 metres and 100 metres, respectively, of these features.

1.3.6 Present Land Use

According to the Township of Springwater - Schedule A – Land Use, the study area encompasses a variety of land uses, including Midhurst Low Density Residential, Environmental Protection Area I, Midhurst Transition Residential, Environmental Protection Area II, and Midhurst Village (Township of Springwater, 2008).

1.4 Archaeological Context

1.4.1 Designated and Listed Cultural Heritage Resources

According to *Section 1.3.1* of the *2011 S&G*, property listed on a municipal register or designated under the *Ontario Heritage Act* or that is a federal, provincial, or municipal historic landmark or site, are considered to have elevated potential.

Consultation with the online inventory entitled ‘Township of Springwater Register of Property of Cultural Heritage Value or Interest: Designated Properties – Part IV of the *Ontario Heritage Act* (Township of Springwater, 2012a), which records municipal properties that have been formally designated until Part IV of the *Ontario Heritage Act*, confirmed the absence of designated heritage resources within and in close proximity to (within 300 metres of) the study area.

Additional consultation with the online inventory entitled, “Township of Springwater Register of Property of Cultural Heritage Value or Interest: Listed (not designated) Properties” (Township of Springwater, 2012b) which identifies properties not formally designated (or listed) heritage properties, confirmed the absence of listed heritage properties within or in close proximity to the study area.

Therefore, based on absence of any designated or listed heritage resources within or in close proximity to the study area, this feature does not aid to further elevate archaeological potential within the study area.

1.4.2 Heritage Conservation Districts

A Heritage Conservation District (HCD) includes areas that have been protected under Part V of the *Ontario Heritage Act*. An HCD can be found in both urban and rural environments and may include residential, commercial, and industrial areas, rural landscapes or entire villages or hamlets with features or land patterns that contribute to a cohesive sense of time or place and contribute to an understanding and appreciation of the cultural identity of a local community, region, province, or nation. An HCD may comprise an area with a group or complex of buildings, or large area with many buildings and properties and often extends beyond its built heritage, structures, streets, landscape and other physical and spatial elements, to include important vistas and views between and towards buildings and spaces within the district (MTCS, 2006, p.5). An

HCD area contains valuable cultural heritage and must be taken into consideration during municipal planning to ensure that they are conserved.

According to *Section 1.3.1* of the *2011 S&G*, heritage resources listed on a municipal register or designated under the *Ontario Heritage Act*, or a federal, provincial, or municipal historic landmark or site, are considered to have elevated archaeological potential. To determine if the study area is located within or in close proximity to (within 300 metres of) an HCD, the Planning and Development Department at the Township of Springwater was contacted (Templeton, 2016). No response was granted by report completion.

1.4.3 Commemorative Plaques or Monuments

According to *Section 1.3.1* of the *2011 S&G*, commemorative markers of Aboriginal and Euro-Canadian settlements, which may include their history, local, provincial, or federal monuments, cairns or plaques, or heritage parks, are considered to have elevated archaeological potential. To determine if any historical plaques are present, the Ontario Historical Plaques inventory, which contains a catalogue of federal Historic Sites and Monuments Board of Canada plaques, the provincial Ontario Heritage Trust plaques, plaques identified by various historical societies, and other published plaques located in Ontario, was reviewed (Ontario Historical Plaques, 2016). This review confirmed the absence of commemorative plaques within or in close proximity to (within 300 metres of) the study area. Therefore, based on the absence of commemorative markers within or in close proximity to study area, this feature does not further elevate archaeological potential within the study area.

1.4.4 Registered Archaeological Sites

In order provide a summary of registered or known archaeological sites within a minimum one kilometre distance from the study area limits, as per *Section 1.1, Standard 1* and *Section 7.5.8, Standard 1* of the *2011 S&G*, the *Ontario Archaeological Sites Database (OASD)* maintained by the *MTCS* was consulted (MTCS, 2016). Every archaeological site is registered according to the Borden System, which is a numbering system used throughout Canada to track archaeological sites and their artifacts.

According to the MTCS (2016), one archaeological site has been registered within one-kilometre of the study area. No registered sites fall within close proximity (within 300 metres) of the study area limits (*see Table 2*).

Table 2: Registered Archaeological Sites within One Kilometre of the Study Area

Borden #	Name	Cultural Affiliation	Type
BcGw-81	Midhurst H1	Post-contact	Homestead

According to *Section 1.3.1* of the *2011 S&G*, previously identified archaeological sites are considered to be features of elevated archaeological potential. Therefore, based on the absence of a registered archaeological site within close proximity of the study area, this criterion does not further elevate archaeological potential within the study area.

Having noted the presence of this site in relation to the study area, it is useful to place it in the proper context by reviewing the cultural history of occupation in Southern Ontario provided in **Table 3**. This data provides an understanding of the potential cultural activity that may have occurred within the study area (Ferris, 2013, p.13).

Table 3: History of Occupation in Southern Ontario

Period	Archaeological Culture	Date Range	Attributes
PALEO-INDIAN			
Early	Gainey, Barnes, Crowfield	>11000-8500 BC	Big game hunters. Fluted projectile points
Late	Holcombe, Hi-Lo, Lanceolate	8500-7500 BC	Small nomadic hunter-gatherer bands. Lanceolate projectile points
ARCHAIC			
Early	Side-notched, corner notched, bifurcate-base	7800-6000 BC	Small nomadic hunter-gatherer bands; first notched and stemmed points, and ground stone celts.
Middle	Otter Creek, Brewerton	6000-2000 BC	Transition to territorial settlements
Late	Narrow, Broad and Small Points Normanskill, Lamoka, Genesee, Adder Orchard etc.	2500-500 BC	More numerous territorial hunter-gatherer bands; increasing use of exotic materials and artistic items for grave offerings; regional trade networks
WOODLAND			
Early	Meadowood, Middlesex	800BC-0BC	Introduction of pottery, burial ceremonialism; panregional trade networks
Middle	Point Peninsula, Saugeen, Jack's Reef Corner Notched	200 BC-AD 900	Cultural and ideological influences from Ohio Valley complex societies; incipient horticulture
Late	Algonquian, Iroquoian, Western Basin	AD 900-1250	Transition to village life and agriculture
	Algonquian, Iroquoian, Western Basin	AD 1250-1400	Establishment of large palisaded villages
	Algonquian, Iroquoian	AD 1400-1600	Tribal differentiation and warfare
HISTORIC			
Early	Huron, Neutral, Petun, Odawa, Ojibwa, Five Nations Iroquois	AD 1600 – 1650	Tribal displacements
Late	Six Nations Iroquois, Ojibwa, Mississauga	AD 1650 – 1800s	Migrations and resettlement

Period	Archaeological Culture	Date Range	Attributes
	Euro-Canadian	AD 1780 - present	European immigrant settlements

1.4.5 Previous Archaeological Assessments

In order to further establish the archaeological context of the study area, a review of previous archaeological fieldwork carried out within the limits of, or immediately adjacent (i.e., within 50 metres) to the study area (per *Section 1.1, Standard 1*), as documented by all available reports was undertaken. According to the *OASD and Report Module in Past Port*, there has been no documentation for other archaeological fieldwork previously conducted within or directly adjacent (i.e. within 50 metres) to the study area.

1.4.6 Physical Features

An investigation of the study area's physical features was conducted to aid in the development of an argument for archaeological potential based on the environmental conditions of the study area. Environmental factors such as close proximity to water, soil type, and nature of the terrain, for example, can be used as predictors to determine where human occupation may have occurred in the past.

The study area is located within the Simcoe Uplands physiographic region of Southern Ontario. The Simcoe Uplands is characterized by broad and rolling till plains, and are separated by steep-sided and flat-floored valleys (Chapman and Putnam, 1984, p.181). These till plains and valleys are "encircled by numerous shorelines, indicating they were islands in Lake Algonquin" (Chapman and Putnam, 1984, p.181). The till is comprised primarily of Pre-Cambrian rock instead of limestone, providing a gritty loam texture that becomes sandier toward the north. Heavier, more calcareous till occurs near Lake Simcoe and Midland. The original forests of the land included hardwoods, mainly sugar maple and beech with white pine. Other common trees include yellow birch, basswood and hemlock. The agriculture can be classified as mixed farming based on a variety of products such as milk, cream, beef, veal, hogs, eggs, and poultry. Over the years, the region generally saw a "moving away" from agriculture, as fewer farms existed within the area, however, those that did remain saw a great increase in size and improvement. Although the uplands did not develop any market centres, it is connected by good highways to Barrie and Orillia, the major urban centres of the Lake Simcoe Basin, and in proximity to small ports by the Georgian Bay shore (Chapman and Putnam, 1984, pp. 182-184).

The native soil type within the study area is Vasey sandy loam, which is a Brown Podzolic and Grey-Brown Podzolic soil characterized as light gray calcareous and non-calcareous sandy loam till. It has good drainage and the topography may be described as smooth, moderately to steeply sloping and moderately to very stony (Ontario Agricultural College, 1959).

In terms of archaeological potential, potable water is a highly important resource necessary for any extended human occupation or settlement. As water sources have remained relatively stable in Southern Ontario since post-glacial times, proximity to water can be regarded as a useful index

for the evaluation of archaeological site potential. Indeed, distance from water has been one of the most commonly used variables for predictive modeling of site location. A watershed is an area drained by a river and its tributaries. As surface water collects and joins a collective water body, it picks up nutrients, sediment and pollutants, which may altogether, affect ecological processes along the way. Hydrological features such as primary water sources (i.e. lakes, rivers, creeks, streams) and secondary water sources (i.e. intermittent streams and creeks, springs, marshes, swamps) would have helped supply plant and food resources to the surrounding area and are indicators of archaeological potential (per *Section 1.3.1* of the *2011 S&G*).

The study area is bisected by small tributaries, which appear to drain into Little Lake. Based on the presence of secondary water sources within the study area (per *Section 1.3.1* of the *2011 S&G*), there is elevated potential for the location of archaeological resources within portions of the study area which lie within 300 metres of this feature.

1.4.7 Current Land Conditions

The study area is situated within a rural landscape just north of the Town of Midhurst. The study area currently encompasses Bayfield Street, Gill Road, Russell Road, and Craig Road, the road right-of-way (ROW), agricultural fields, tributaries, overgrown grassed margins and woodlots. The topography within the study area inclines moving west to east, with the elevation ranging from 240 to 290 metres above sea level.

1.4.8 Date of Review

A desktop review of field conditions using historical aerial photography and current satellite imagery obtained through the Google Earth application was undertaken on May 27th, 2016.

1.5 Confirmation of Archaeological Potential

Based on the information gathered from background research documented in the preceding sections, potential for the recovery of archaeological resources within any portions of the study area limits has been established. Features contributing to archaeological potential are summarized in **Appendix B**.

2.0 ANALYSIS AND CONCLUSIONS

In combination with data gathered from background research (*see Sections 1.3 and 1.4*) and an inspection of satellite imagery and aerial photography, an evaluation of archaeological potential was performed.

2.1 Historical Imagery

Data gathered from background research (*see Sections 1.3 and 1.4*) was used to perform an assessment of archaeological potential. Additionally, a detailed review of aerial photographs taken from 1954 (*see Map 4*), and satellite imagery taken in 2006 to 2015 (*see Maps 5-6*), reveals that the study area has undergone significant changes since 1954.

The 1954 aerial photograph reveals that the study area encompassed numerous agricultural fields, extant roads, a woodlot and one homestead within the east side of the study area (*see Map 4*). The study area has remained relatively unchanged by 2006, with the exception of some commercial developments along the western side of County Road 27 and residential homesteads within the eastern portion of the study area (*see Map 5*). By 2015, a homestead within the eastern portion of the study area was demolished (*see Map 6*).

2.2 Identified Deep and Extensive Disturbances

The study area was evaluated for extensive disturbances that have removed archaeological potential. Per *Section 1.3.2* of the *2011 S&G*, disturbances may include but are not limited to: grading below topsoil, quarrying, building footprints, or sewage and infrastructure development. *Section 1.3.2* of the *2011 S&G* considers infrastructure development among those “features indicating that archaeological potential has been removed.”

Such disturbances were noted consisting of: existing structures, roadways, roadside ditches/embankments, utilities, a gravel shoulders/driveway, and parking areas (*see Maps 7-8; Appendix C - Images 1-6*). The construction of these features during the 20th century was confirmed in historical aerial imagery, and would have resulted in severe damage to the integrity of any archaeological resources which may have been present within their footprints. The aforementioned areas of deep and extensive disturbances should only be considered as *likely* not requiring Stage 2 survey. A Stage 2 visual inspection is still required to provide on-site confirmation and documentation of the actual condition and exact extent of the disturbances.

2.3 Physiographic Features of No or Low Archaeological Potential

The study area was also evaluated for physical features of no or low archaeological potential. These usually include but are not limited to: permanently wet areas, exposed bedrock, and steep slopes (greater than 20°) except in locations likely to contain pictographs or petroglyphs, as per

Section 2.1, Standard 2.a. of the 2011 S&G. Permanently wet areas associated with the various tributaries bisecting the study area, were identified as physical features of no or low archaeological potential (*see Maps 7-8*). A Stage 2 visual inspection is required to provide on-site confirmation and documentation of the actual condition and exact extent of these features.

2.4 Identified Areas of Archaeological Potential

Portions of the study area that exhibit neither extensively disturbed conditions, nor contain physical features of no or low archaeological potential are considered to have archaeological potential. The ploughed agricultural fields, woodlots, overgrown grassed margins, areas of manicured grass and areas of heavy brush/vegetation are considered to retain archaeological potential (*see Maps 7-8; Images 2, 4-6*).

3.0 RECOMMENDATIONS

In light of the findings detailed in preceding sections, the following recommendations are presented:

1. Areas that exhibit disturbed conditions (per *Section 1.3.1* of the 2011 S&G) need to be confirmed through an on-site property inspection during a Stage 2 AA.
2. Lands evaluated as having no or low potential (per *Section 2.1, Standard 2.a* of the 2011 S&G), need to be confirmed through an on-site property inspection during a Stage 2 AA.
3. All identified areas which contain archaeological potential, must be subjected to a Stage 2 AA.

The agricultural fields will require pedestrian survey at five metre intervals, which involves systematically walking ploughed areas and mapping and collecting any artifacts found on the ground surface. The land must be recently ploughed and subjected to the appropriate weathering requirements, in accordance with *Section 2.1.1* of the 2011 S&G, in advance of pedestrian archaeological survey.

Where ploughing in advance of pedestrian archaeological survey will not be possible, such as the woodlots, overgrown grassed margins, areas of manicured grass and areas of heavy brush/vegetation, these areas will need to be subjected to a Stage 2 shovel test pit survey at five metre intervals, in accordance with *Section 2.1.2* of the 2011 S&G.

No construction activities shall take place within the study area prior to the MTCS (Archaeology Program Unit) confirming in writing that all archaeological licensing and technical review requirements have been satisfied.

4.0 ADVICE ON COMPLIANCE WITH LEGISLATION

1. This report is submitted to the *MTCS* as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the *MTCS*, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.
2. It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.
3. Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the *Ontario Heritage Act*.
4. The *Cemeteries Act*, R.S.O. 1990 c. C.4 and the *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the *Ministry of Consumer Services*.

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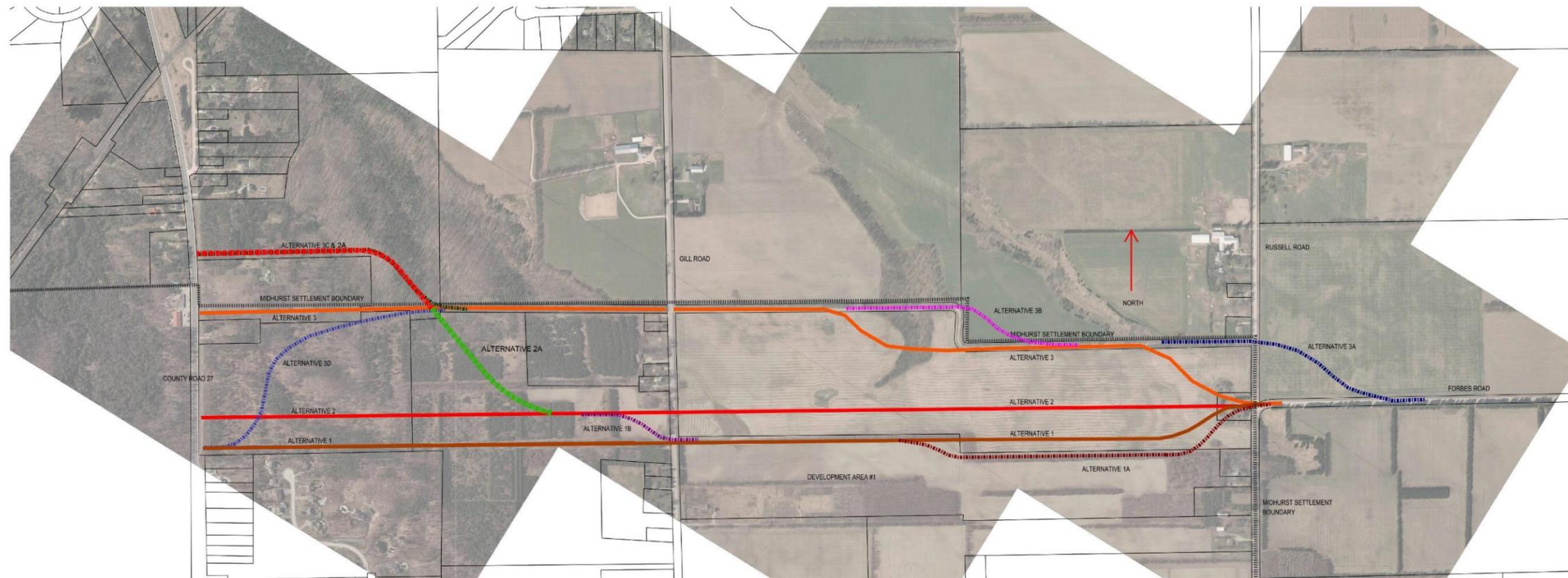
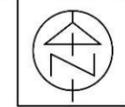
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APPENDICES

APPENDIX A: MAPS



PLOT 1=1

NOTES

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Plotted by: AMILLER on May 5, 2016 at 2:26pm
File: \\113027\Drawings\Craig Road Options\113027-Craig Road-Options Overview.dwg Layout: P1

NO.	REVISIONS	DATE	INITIAL

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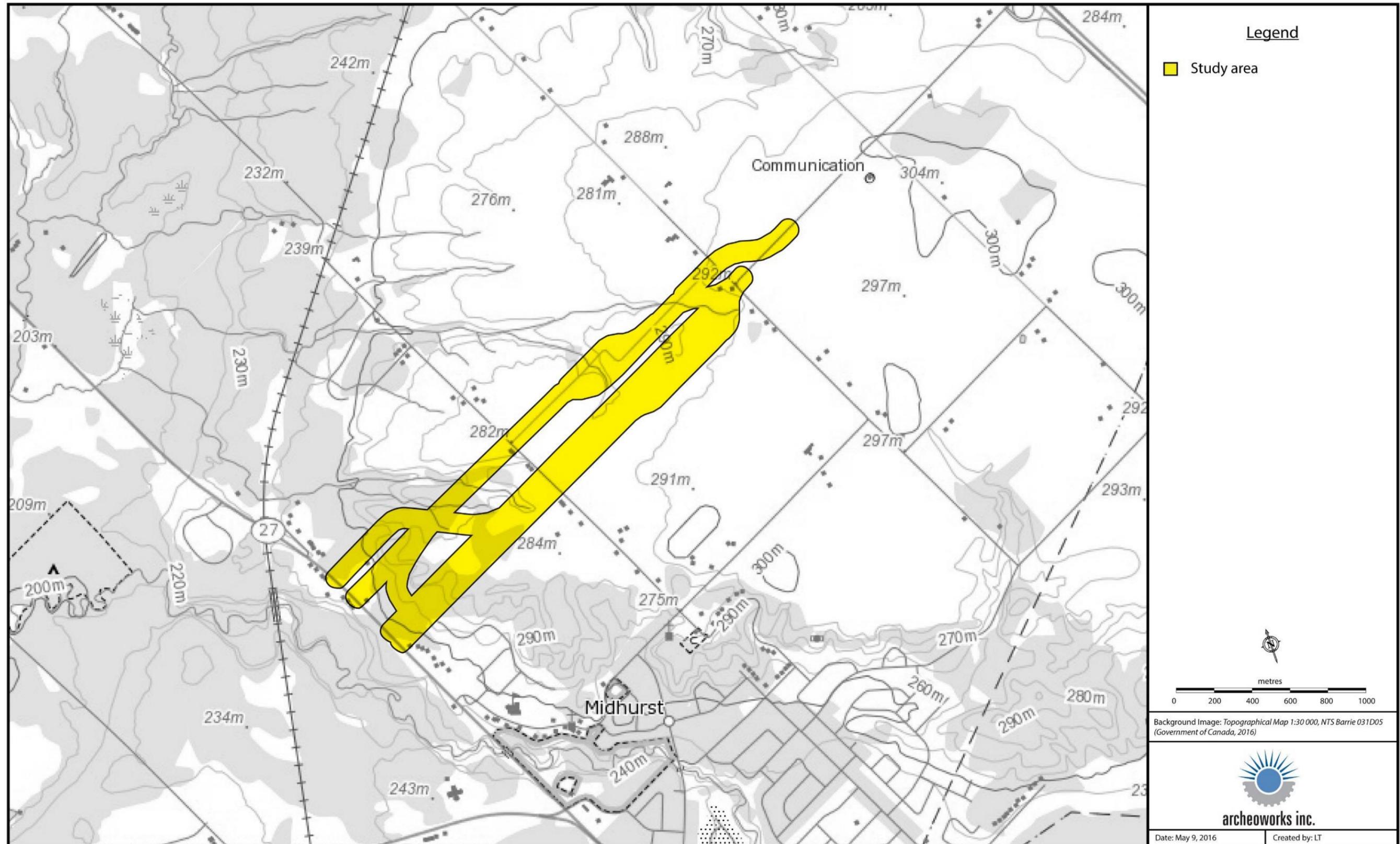
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THE TOWNSHIP OF SPRINGWATER
MIDHURST PHASING PLAN
CRAIG ROAD OPTIONS

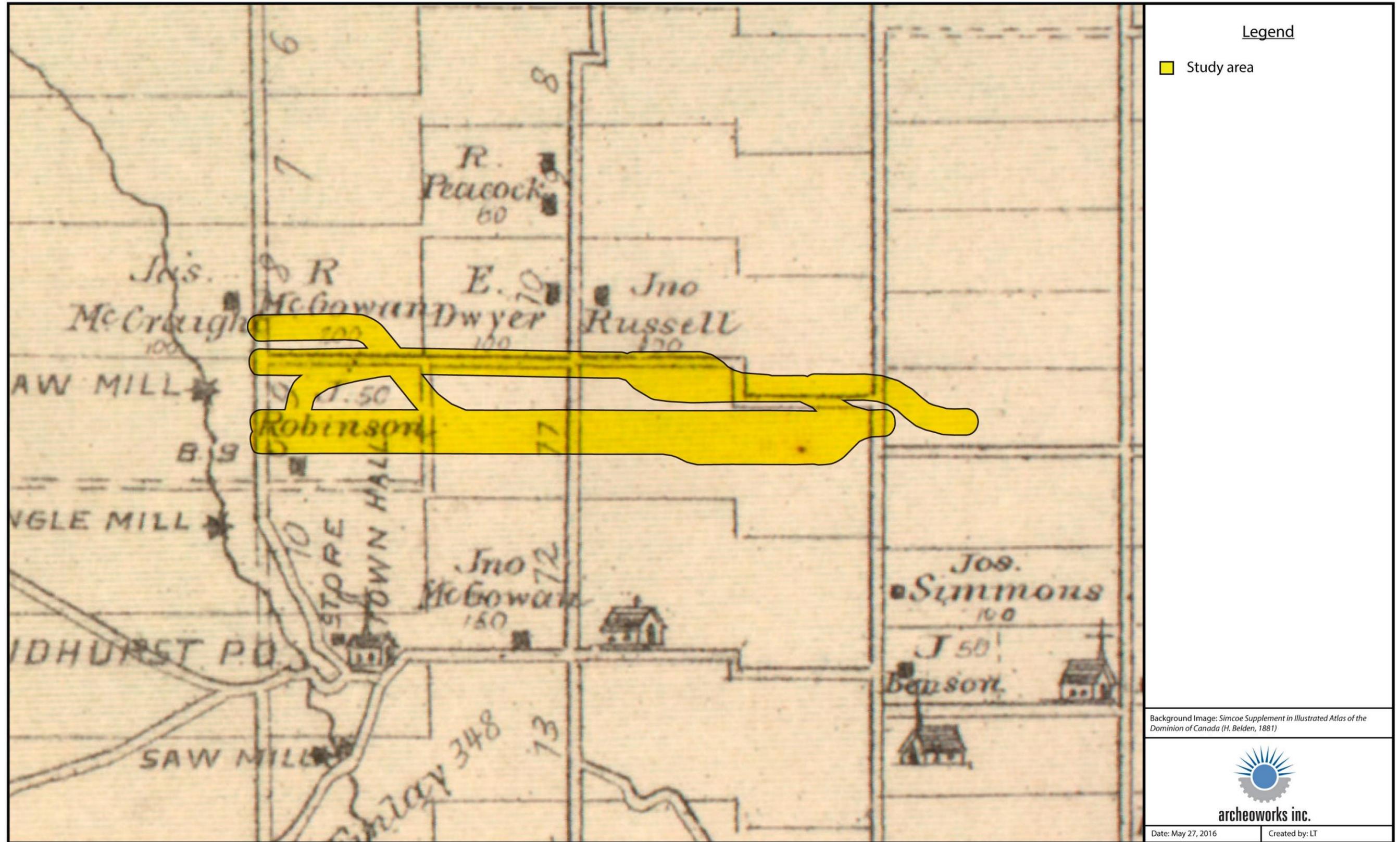


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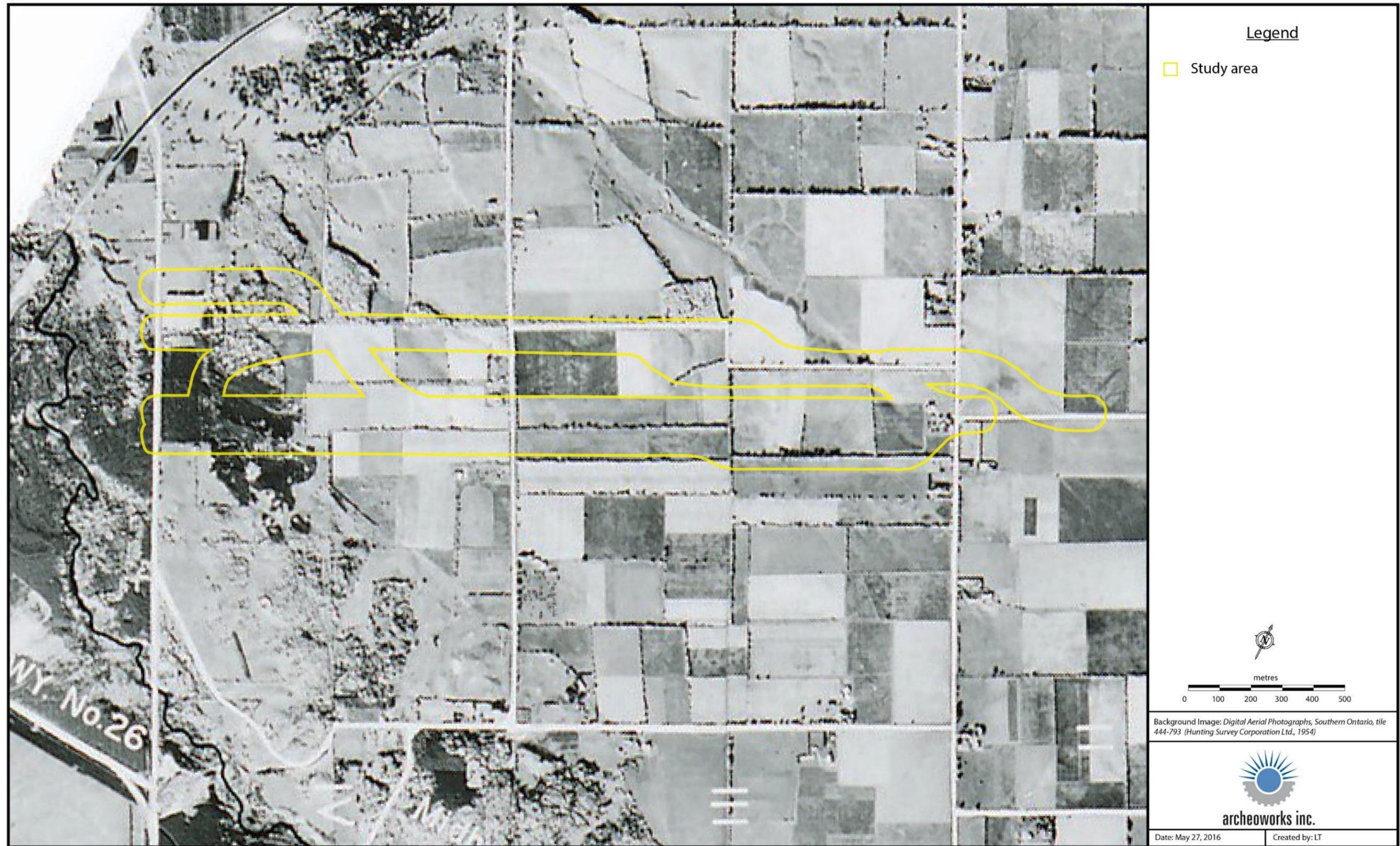
Map 1: Proposed alignments for the Craig Road Extension (Courtesy of Ainley & Associates).



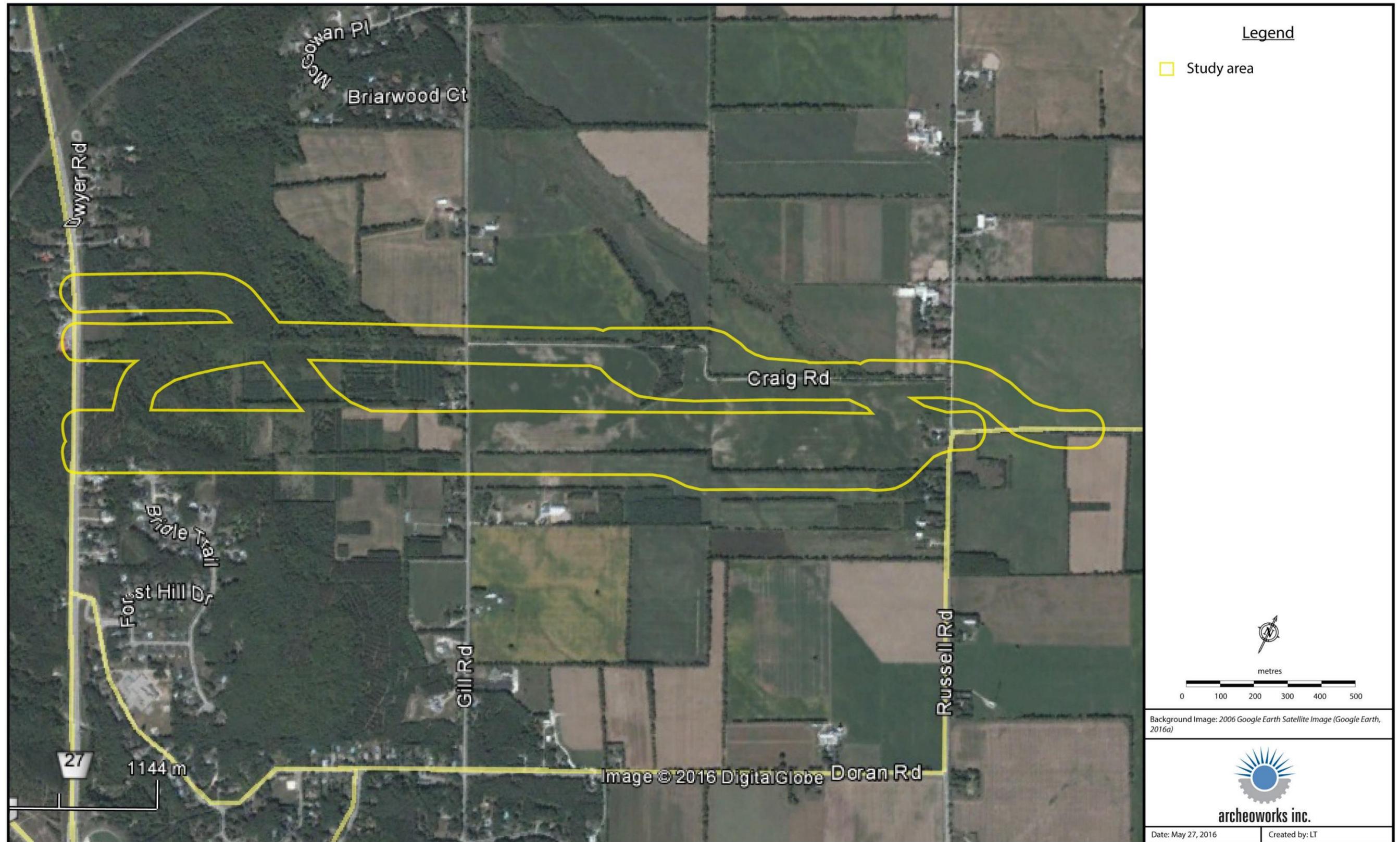
Map 2: Topographical map 1:30000, NTS Barrie 031D05 (Government of Canada, 2016) identifying the Stage 1 AA study area.



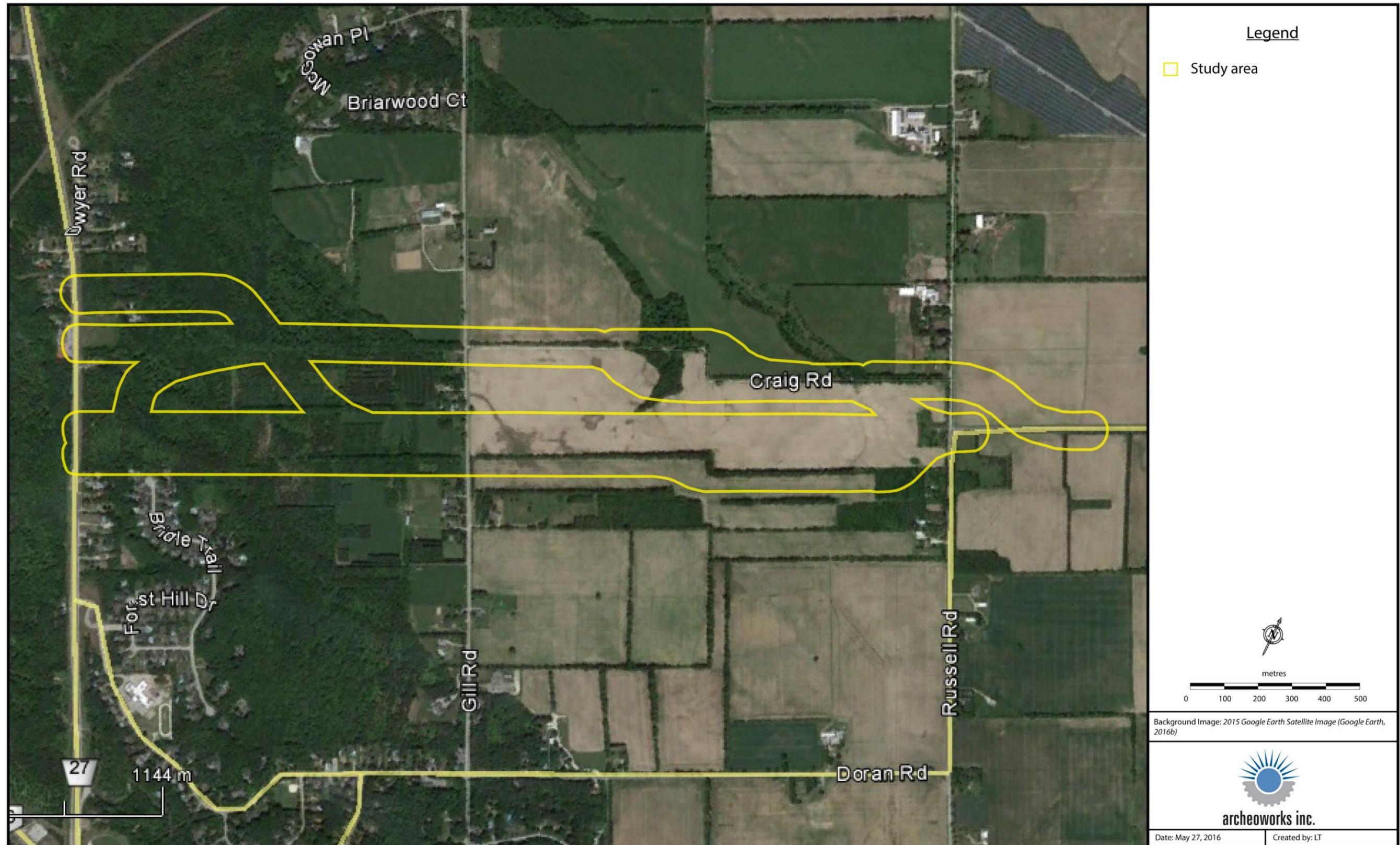
Map 3 The Stage 1 AA study area within the Simcoe Supplement in the Illustrated Atlas of the Dominion of Canada (H. Belden, 1881). Note -Due to imprecision of the Simcoe Supplement mapping, the overlay of the study area was guided by its placement in reality and matched as closely as possible to its equivalent in the Simcoe Supplement. Also note the inaccurate identification of Lots 9 and 10 as Lots 8 and 9, respectively.



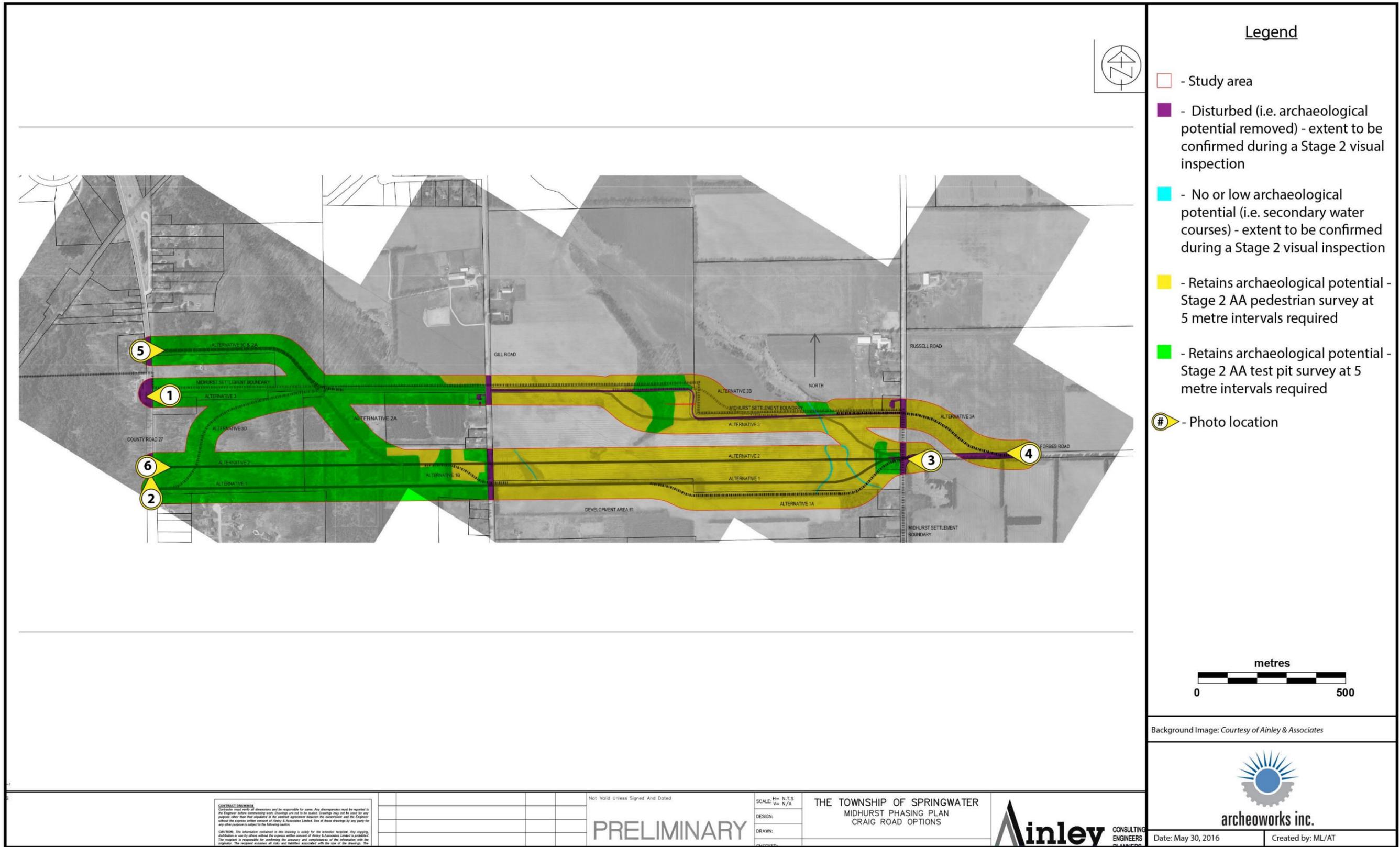
Map 4: Stage 1 AA study area within a 1954 aerial photograph (Hunting Survey Corporation Ltd., 1954).



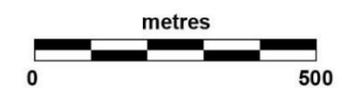
Map 5: Stage 1 AA study area within a 2006 satellite image (Google Earth, 2016a).



Map 6: Stage 1 AA study area within a 2015 satellite image (Google Earth, 2016b).



- Legend**
- Study area
 - Disturbed (i.e. archaeological potential removed) - extent to be confirmed during a Stage 2 visual inspection
 - No or low archaeological potential (i.e. secondary water courses) - extent to be confirmed during a Stage 2 visual inspection
 - Retains archaeological potential - Stage 2 AA pedestrian survey at 5 metre intervals required
 - Retains archaeological potential - Stage 2 AA test pit survey at 5 metre intervals required
 - # - Photo location



Background Image: Courtesy of Ainley & Associates



archeoworks inc.

Date: May 30, 2016

Created by: ML/AT

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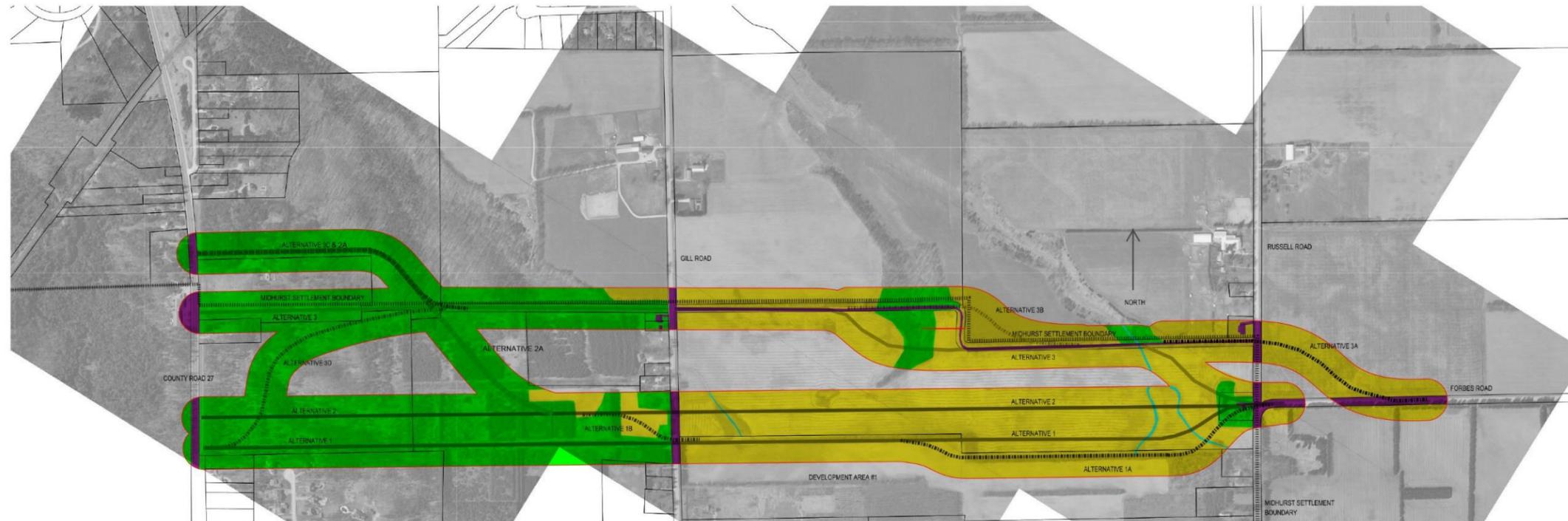
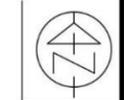
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THE TOWNSHIP OF SPRINGWATER
MIDHURST PHASING PLAN
CRAIG ROAD OPTIONS

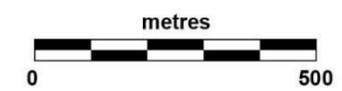


Map 7: Stage 1 AA results of the study area with photo locations indicated.



Legend

- Study area
- Disturbed (i.e. archaeological potential removed) - extent to be confirmed during a Stage 2 visual inspection
- No or low archaeological potential (i.e. secondary water courses) - extent to be confirmed during a Stage 2 visual inspection
- Retains archaeological potential - Stage 2 AA pedestrian survey at 5 metre intervals required
- Retains archaeological potential - Stage 2 AA test pit survey at 5 metre intervals required



Background Image: Courtesy of Ainley & Associates



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Date: May 30, 2016

Created by: ML/AT

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THE TOWNSHIP OF SPRINGWATER
MIDHURST PHASING PLAN
CRAIG ROAD OPTIONS



Map 8: Stage 1 AA results of the study area.

APPENDIX B: SUMMARY OF BACKGROUND RESEARCH

Feature of Archaeological Potential		Yes	No	Unknown	Comment
1	Known archaeological sites within 300 m?		X		If Yes, potential confirmed
Physical Features		Yes	No	Unknown	Comment
2	Is there water on or near the property?	X			Storm water management facility
2a	Presence of primary water source within 300 metres of the study area (lakes, rivers, streams, creeks)		X		If Yes, potential confirmed
2b	Presence of secondary water source within 300 metres of the study area (intermittent creeks and streams, springs, marshes, swamps)	X			If Yes, potential confirmed
2c	Features indicating past presence of water source within 300 metres (former shorelines, relic water channels, beach ridges)		X		If Yes, potential confirmed
2d	Accessible or inaccessible shoreline (high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh)		X		If Yes, potential confirmed
3	Elevated topography (knolls, drumlins, eskers, plateaus, etc.)		X		If Yes to two or more of 3-5 or 7-10, potential confirmed
4	Pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground		X		If Yes to two or more of 3-5 or 7-10, potential confirmed
5	Distinctive land formations (mounds, caverns, waterfalls, peninsulas, etc.)		X		If Yes to two or more of 3-5 or 7-10, potential confirmed
Cultural Features		Yes	No	Unknown	Comment
6	Is there a known burial site or cemetery that is registered with the Cemeteries Regulation Unit on or directly adjacent to the property?		X		If Yes, potential confirmed
7	Associated with food or scarce resource harvest areas (traditional fishing locations, food extraction areas, raw material outcrops, etc.)		X		If Yes to two or more of 3-5 or 7-10, potential confirmed
8	Indications of early Euro-Canadian settlement (monuments, cemeteries, structures, etc.) within 300 metres	X			If Yes to two or more of 3-5 or 7-10, potential confirmed
9	Associated with historic transportation route (historic road, trail, portage, rail corridor, etc.) within 100 metres of the property	X			If Yes to two or more of 3-5 or 7-10, potential confirmed
Property-specific Information		Yes	No	Unknown	Comment
10	Contains property designated under the Ontario Heritage Act		X		If Yes to two or more of 3-5 or 7-10, potential confirmed
11	Local knowledge (aboriginal communities, heritage organizations, municipal heritage committees, etc.)		X		If Yes, potential confirmed
12	Recent ground disturbance, not including agricultural cultivation (post-1960, extensive and deep land alterations)	X – Parts of study area			If Yes, low archaeological potential is determined

APPENDIX C: IMAGES

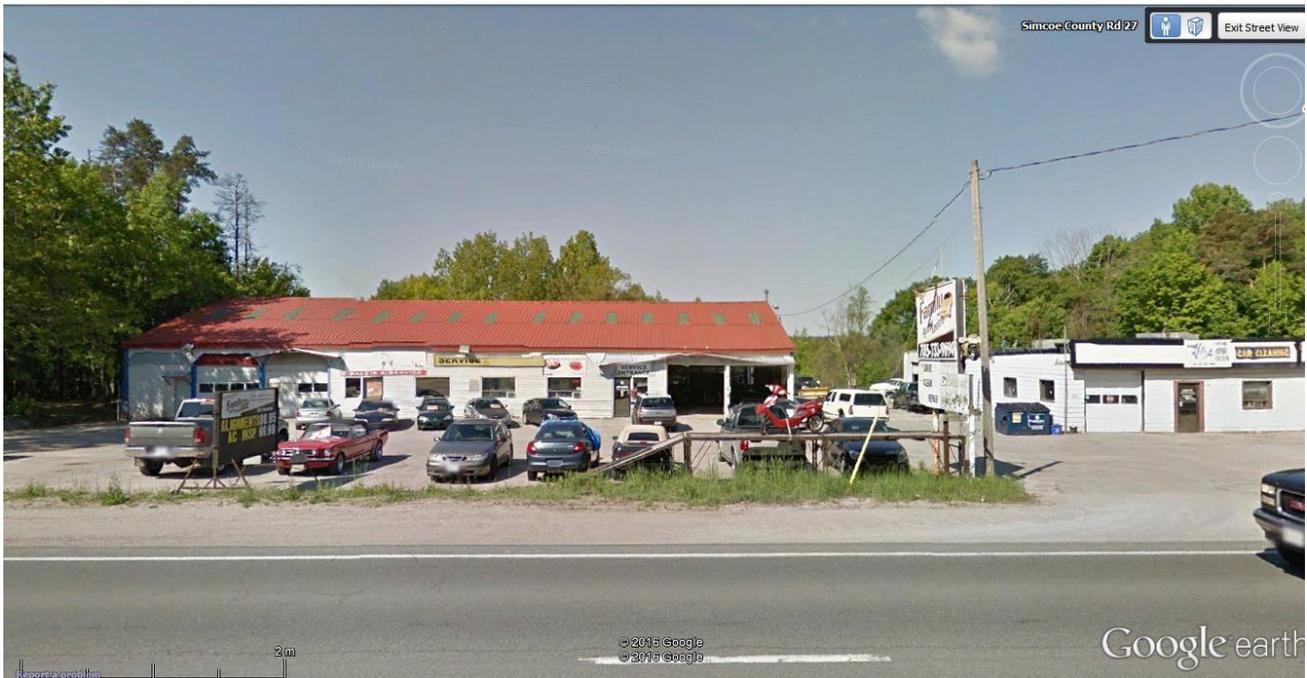


Image 1: View of disturbances associated with extant commercial structures, paved road, gravel shoulder and gravel parking lots, and utilities (Google Earth, 2016c).

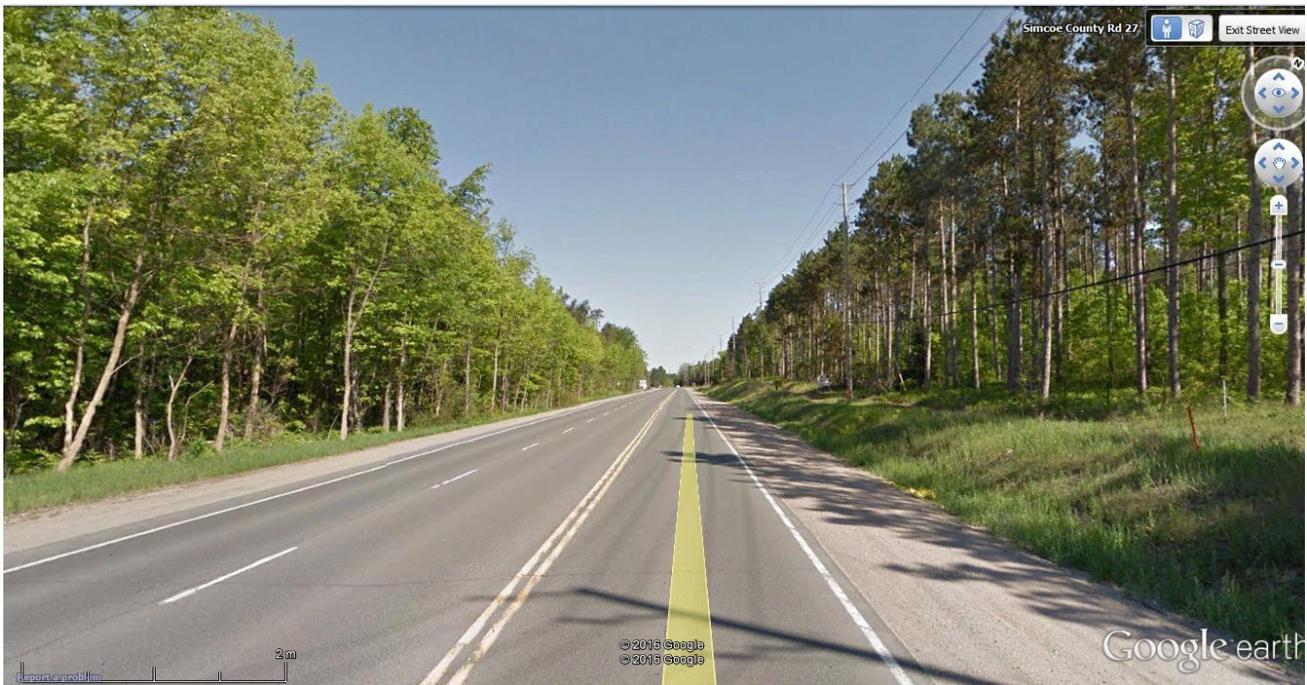


Image 2: View of disturbances associated with paved roadway, gravel shoulders, roadside ditches/embankments, and utilities. Also a view of wood lots retaining archaeological potential (Google Earth, 2016c).

STAGE 1 AA FOR THE PROPOSED CRAIG ROAD EXTENSION
TOWNSHIP OF SPRINGWATER, COUNTY OF SIMCOE, ONTARIO



Image 3: View of disturbances associated with paved road, gravel shoulders and driveway, and utilities (Google Earth, 2016c).



Image 4: View of disturbances associated with paved road, gravel shoulder, roadside ditches/embankments and utilities. Also a view of ploughed agricultural fields retaining archaeological potential (Google Earth, 2016c).

STAGE 1 AA FOR THE PROPOSED CRAIG ROAD EXTENSION
TOWNSHIP OF SPRINGWATER, COUNTY OF SIMCOE, ONTARIO



Image 5: View of disturbances associated with roadside ditching/embankment and utilities. Also a view of a wood lot retaining archaeological potential (Google Earth, 2016c).



Image 6: View of disturbances associated with gravel shoulder, roadside ditching/embankment, and utilities. Also a view of a wood lot retaining archaeological potential (Google Earth, 2016c).

APPENDIX D: INVENTORY OF DOCUMENTARY AND MATERIAL RECORD

Project Information:				
Project Number:		091-MI1577-15		
Licensee:		Nimal Nithiyanantham (P390)		
MTCS PIF:		P390-0206-2016		
Document/ Material			Location	Comments
1.	Research/ Analysis/ Reporting Material	Digital files stored in: /2015/091-MI1577-15 - Craig Road Extension - Midhurst/Stage 1	Archeoworks Inc., 16715-12 Yonge Street, Suite 1029, Newmarket, ON, Canada, L3X 1X4	Stored on Archeoworks network servers
2.	Digital Images	Digital Images: Six (6) digital images	Archeoworks Inc., 16715-12 Yonge Street, Suite 1029, Newmarket, ON, Canada, L3X 1X4	Stored on Archeoworks network servers

Under Section 6 of Regulation 881 of the *Ontario Heritage Act*, *Archeoworks Inc.* will, “keep in safekeeping all objects of archaeological significance that are found under the authority of the licence and all field records that are made in the course of the work authorized by the licence, except where the objects and records are donated to Her Majesty the Queen in right of Ontario or are directed to be deposited in a public institution under subsection 66 (1) of the Act.”

APPENDIX 'E'

Memorandum – Update to EA Traffic Forecasts Based on Updated Employment Estimates – BA Group, May 23, 2014

Memorandum

TO:

The Township of Springwater c/o
Joe Mullan
Ainley and Associates

FROM:

Mark D. Jamieson, P.Eng.

PROJECT:

6860-10
Midhurst

DATE:

May 23, 2014

SUBJECT: UPDATE TO EA TRAFFIC FORECASTS BASED ON UPDATED EMPLOYMENT ESTIMATES

Per the meeting held on March 5th at Ainley's office and at Ainley's request, BA Group has revised the future traffic forecasts for the Midhurst Secondary Plan area to include more detailed planning estimates for the employment lands in the Secondary Plan area than previously used. The purpose of the analysis was to confirm whether including a more refined projection for employment / mixed use / retail land uses in the Midhurst Secondary Plan would result in any impact to the findings of the Phase 1-2 EA that was completed by Ainley in 2009.

The Phase 1 and 2 Class EA included an estimate of the future employment uses in the Secondary Plan of 1050 person, or an equivalent residential allocation of 350 units. More recently, planning and economic consultants for the Midhurst Landowners Group (MLG) have projected a series of revised employment land use estimates that assess the maximum potential Gross Floor Area (GFA) which could be developed on the employment lands within the Secondary Plan area. The table below summarizes the MLG employment land use assumptions:

TABLE 1 UPDATED LAND USE PROJECTIONS

Type of Use	Approx. Size	Location
Light Industrial / General Employment	Approx. 3,130 jobs ¹	Employment areas north and south of Snow Valley Road
Major Community Focus Retail / Highway Commercial Retail	Approx. 500,000 sq. ft. GFA ²	Future mixed use & retail redevelopment on mixed use lands along Highway 26 corridor
Doran Road Community Mixed Use	Approx. 50,000 sq. ft. GFA ²	Mixed use lands proposed within Doran area
Carson Road Community Mixed Use	Approx. 70,000 sq. ft. GFA ²	Mixed use lands proposed within Carson area

Notes: 1. Based on memo from Altus Group dated December 18th 2012
2. Based on September 3rd 2013 Memorandum from urbanMetrics Inc. commercial needs assessment.

BA Group has analysed the MLG employment estimates for the purposes of confirming the transportation conclusions in the Phase 1&2 Class EA for Midhurst. This in turn would confirm that the recommended road network improvements outlined in the Phase 1-2 EA are still appropriate to accommodate full build out of the Secondary Plan. Our analysis is briefly summarized below.

Revised Trip Generation

Trips associated with the mixed use areas within the development areas (i.e. Carson and Doran) will be locally oriented within each specific community and will not generate any significant external traffic outside of the development areas. The internal mixed use areas were therefore assumed not to generate any traffic external beyond the immediate draft plan area. Trips associated with these land uses were therefore excluded from the long-term EA traffic forecasts.

With respect to the general employment and major community retail areas, a revised traffic generation & assignment was undertaken. The Institute for Transportation Engineers (ITE) Trip Generation Manual was used to estimate the future traffic generation for the general employment uses and the major community focus retail along the Highway 26 corridor; ITE Code 110 (Light Industrial) and 820 (Shopping Centre) were used respectively.

Trips associated with the residential areas were undertaken using a blended trip rate that was obtained through averaging trip rates contained within the ITE Trip Generation Manual with trip rates derived from traffic surveys of existing neighbourhoods undertaken by BA Group in the communities of Bond Head, Elmvale, Midhurst, and Hillsdale.

The total trip forecasts were discounted 5% to account for trip internalization within the draft plan areas. A further 5 to 10% of the total trips (in the AM peak hour and PM peak hour respectively) were discounted from the residential traffic forecasts to account for trip interaction between the employment and retail uses and the residential areas (i.e. to ensure trips within the residential areas travelling to/from the employment and retail areas were not double counted).

The resulting trip generation calculation for the full build-out of the entire Secondary Plan is attached to this document. The corresponding trip generation calculation for the build out of the initial 300 hectares of new residential development, which also includes the redevelopment of other existing provincially approved lands within the Secondary Plan (e.g. the employment and retail uses), is also attached.

Revised Traffic Forecasts

Revised future traffic forecasts for the weekday morning peak hour and weekday afternoon peak hour associated with the full build-out of the Secondary Plan area are attached. The build-out traffic forecasts were used to evaluate the continued applicability of the conclusions of the Phase 1-2 EA to ensure the revised employment estimates did not have an impact on the EA findings regarding the required road network improvements to accommodate the build-out of the Secondary Plan.

Revised future traffic forecasts for the 300 hectares of initial development, which as per the above also includes the redevelopment of other existing provincially approved lands within the Secondary Plan, have also been attached.



Key Findings of Revised Analysis

An analysis of the updated traffic forecasts was undertaken to confirm the conclusions of the Phase 1-2 EA. Our review included an analysis of the anticipated link volumes throughout the Secondary Plan network and an intersection capacity analysis using Synchro Capacity Analysis Software. A table summarizing the Synchro results for the weekday afternoon peak hour is provided in the Appendix. The weekday afternoon peak hour results represent the critical design period due to the additional traffic volumes being generated by the assumed retail uses along the Highway 26 corridor.

Key findings are outlined below:

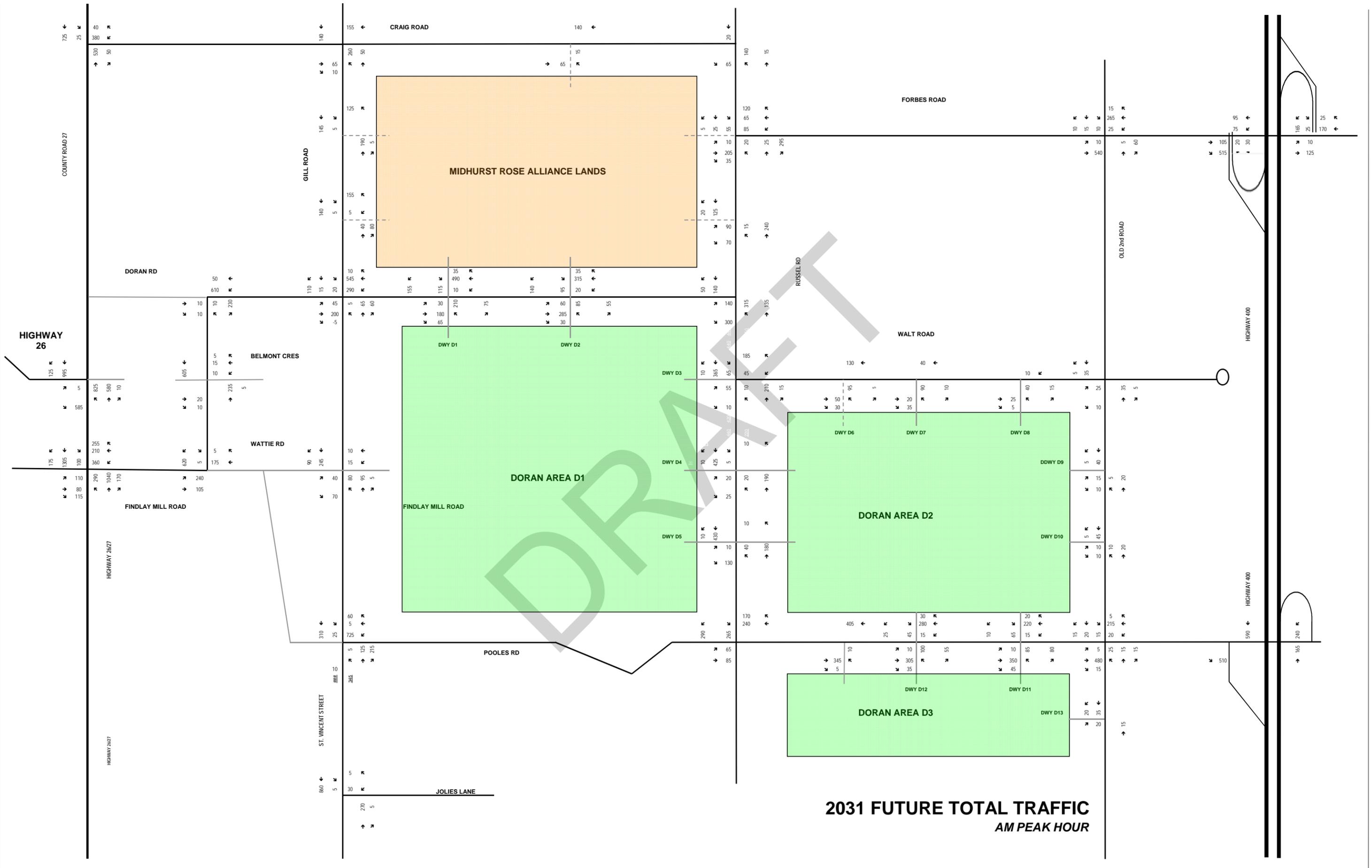
- Utilizing the maximum potential gross floor area that could be generated on the employment lands and the commercial lands, the revised employment and retail land use estimates will add several hundred peak hour trips to the area road network compared to the previous estimate based on 350 equivalent residential units.
- Intersections located along the Highway 26 corridor and the Finlay Mill corridor will experience added pressure from the changes to the assumed employment and retail land uses. However the intersections influenced by the higher employment / retail traffic volumes were identified in the Phase 1-2 EA as requiring improvements to increase capacity (e.g. construction of additional turning lanes). With improvements in place, the additional traffic generated by the employment and retail land uses can be accommodated at the key intersections within the Secondary Plan. The extent of the intersection improvements will be confirmed through additional analysis.
- All other intersections and road links within the study area (i.e. the Secondary Plan) can accommodate the potential increases in traffic associated with the employment / retail uses with no change to the conclusions of the Phase 1&2 EA.
- The build-out of the employment and retail areas will place additional traffic demand on Finlay Mill Road during the weekday afternoon peak hour. Under build-out traffic volumes, Finlay Mill Road will be approaching the capacity of a two-lane road during the weekday afternoon peak hour. The recommended EA configuration for Finlay Mill is to upgrade the road to add sidewalks but to maintain the current two-lanes of throughput capacity (one lane per direction). As a result Finlay Mill may become congested during the peak periods and some trips may choose to use alternate routes (e.g. St. Vincent Street, the future Craig Road extension, the future Pooles Road interchange) in order to avoid the congestion.

Based on the foregoing, the changes to the employment and retail land use estimates will increase the projected build-out traffic volumes associated with the Secondary Plan. However the increases can be accommodated within the identified road network improvements identified in the Phase 1-2 EA for Midhurst. The findings of the Phase 1-2 EA are therefore still applicable using the revised employment & retail land use assumptions.

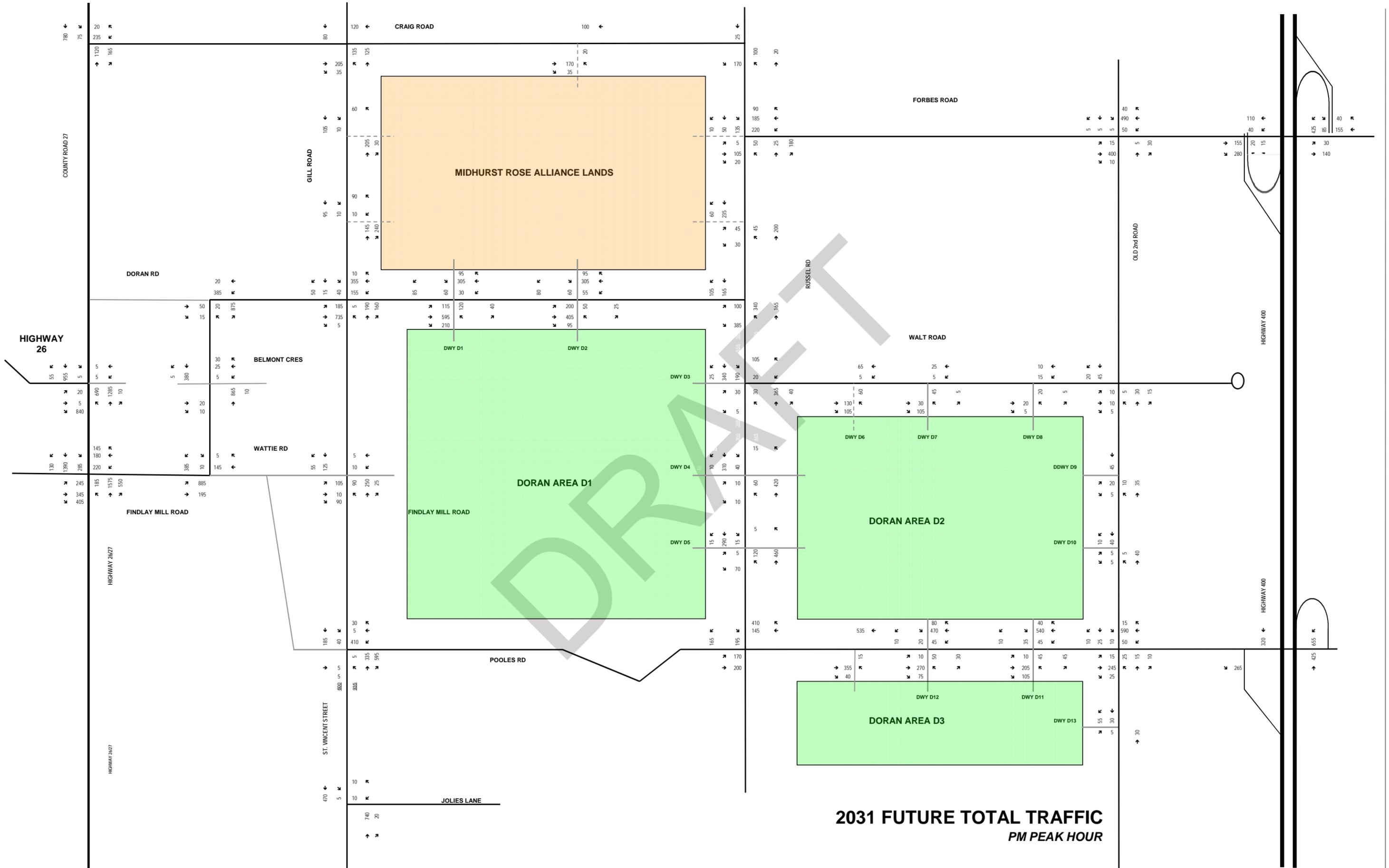
ATTACHMENTS

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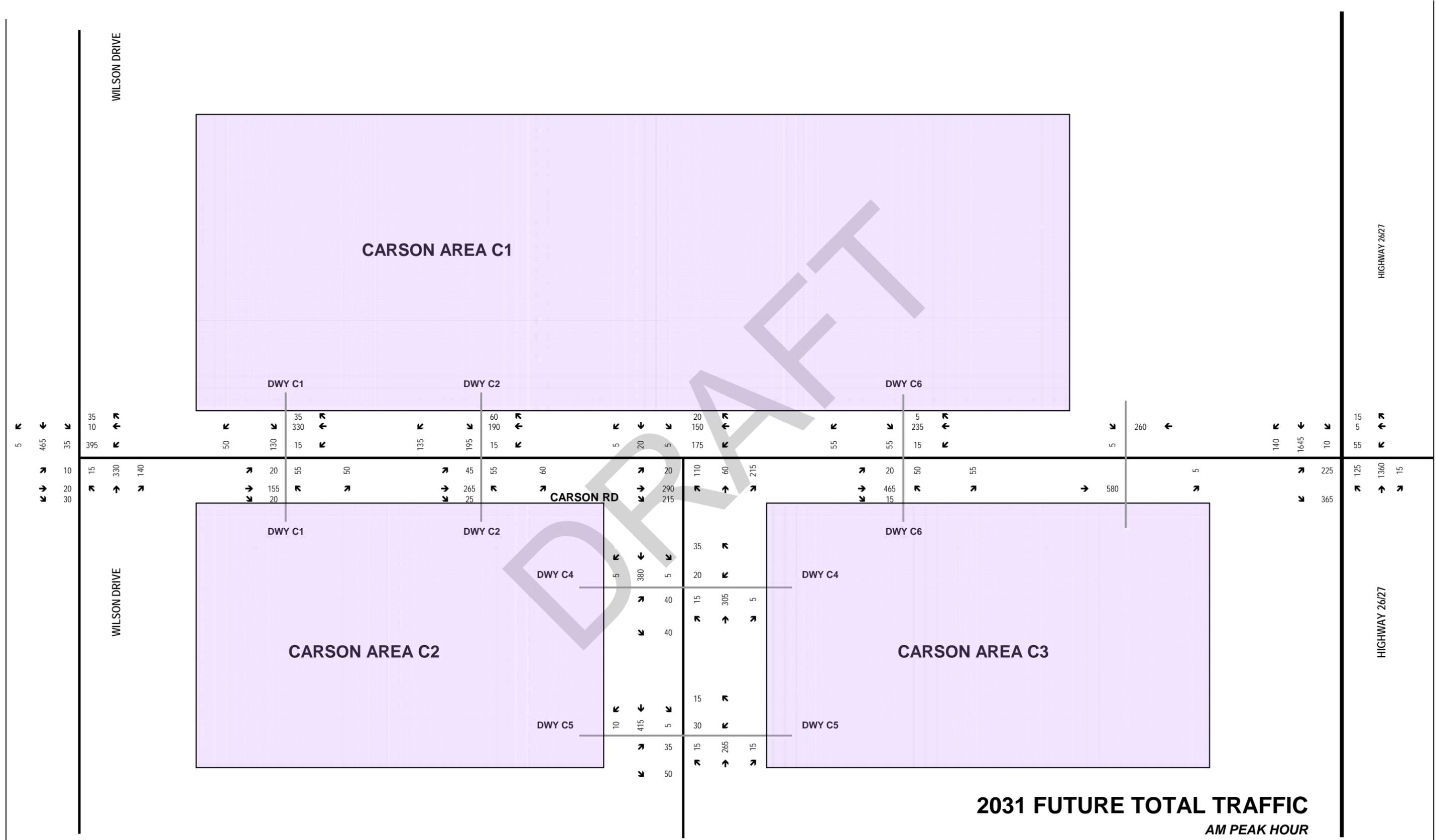


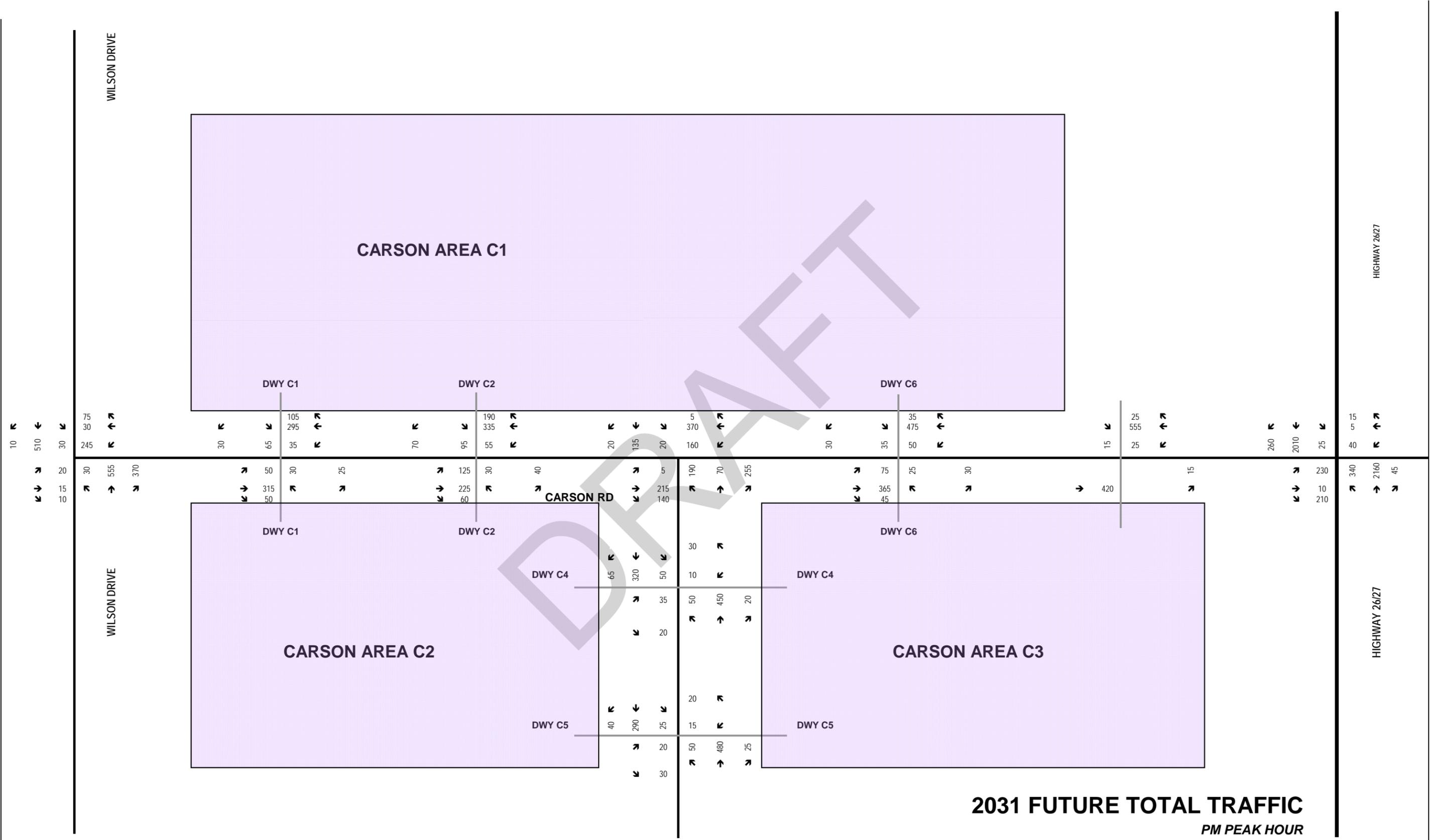


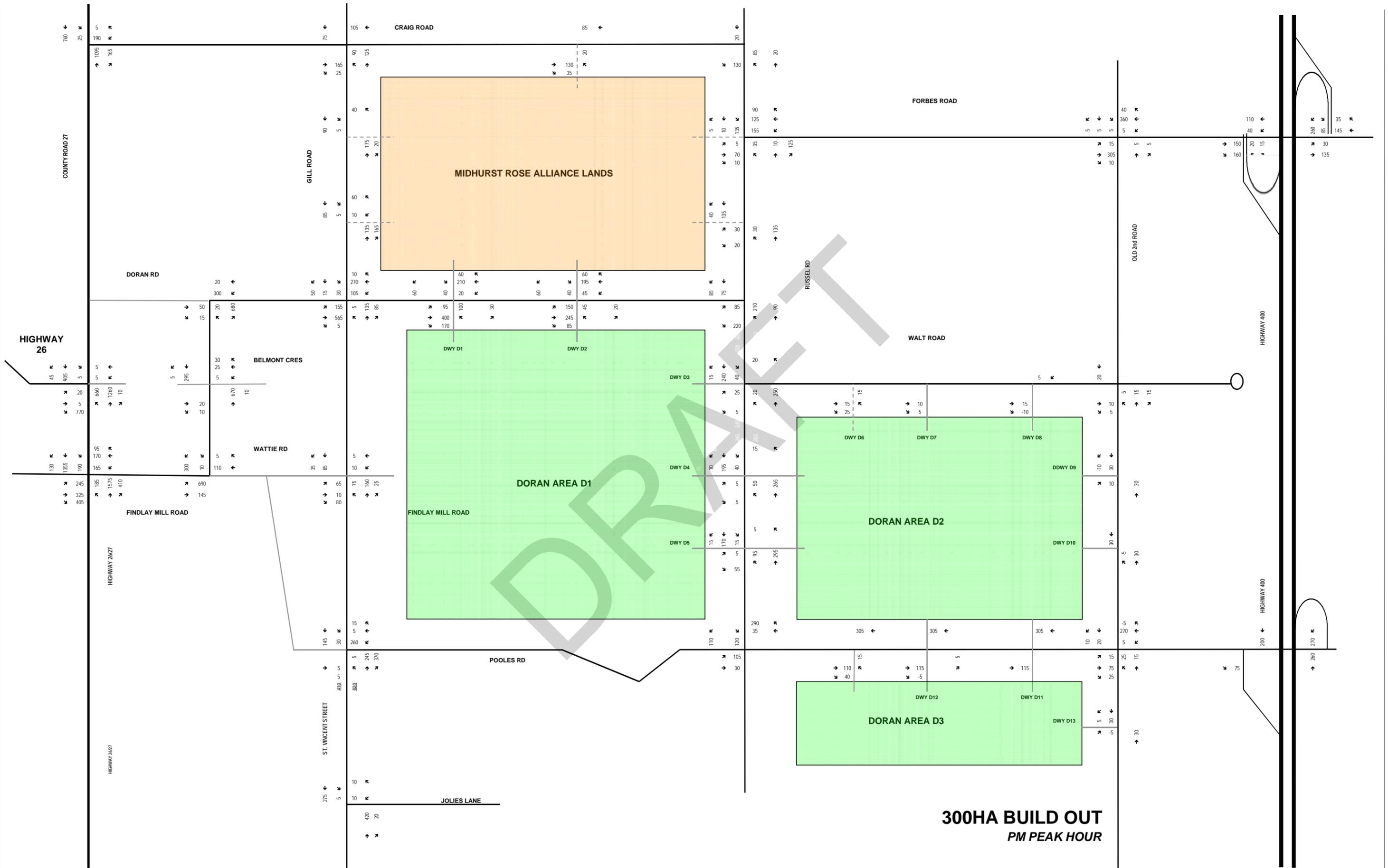
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AM PEAK HOUR



2031 FUTURE TOTAL TRAFFIC
PM PEAK HOUR







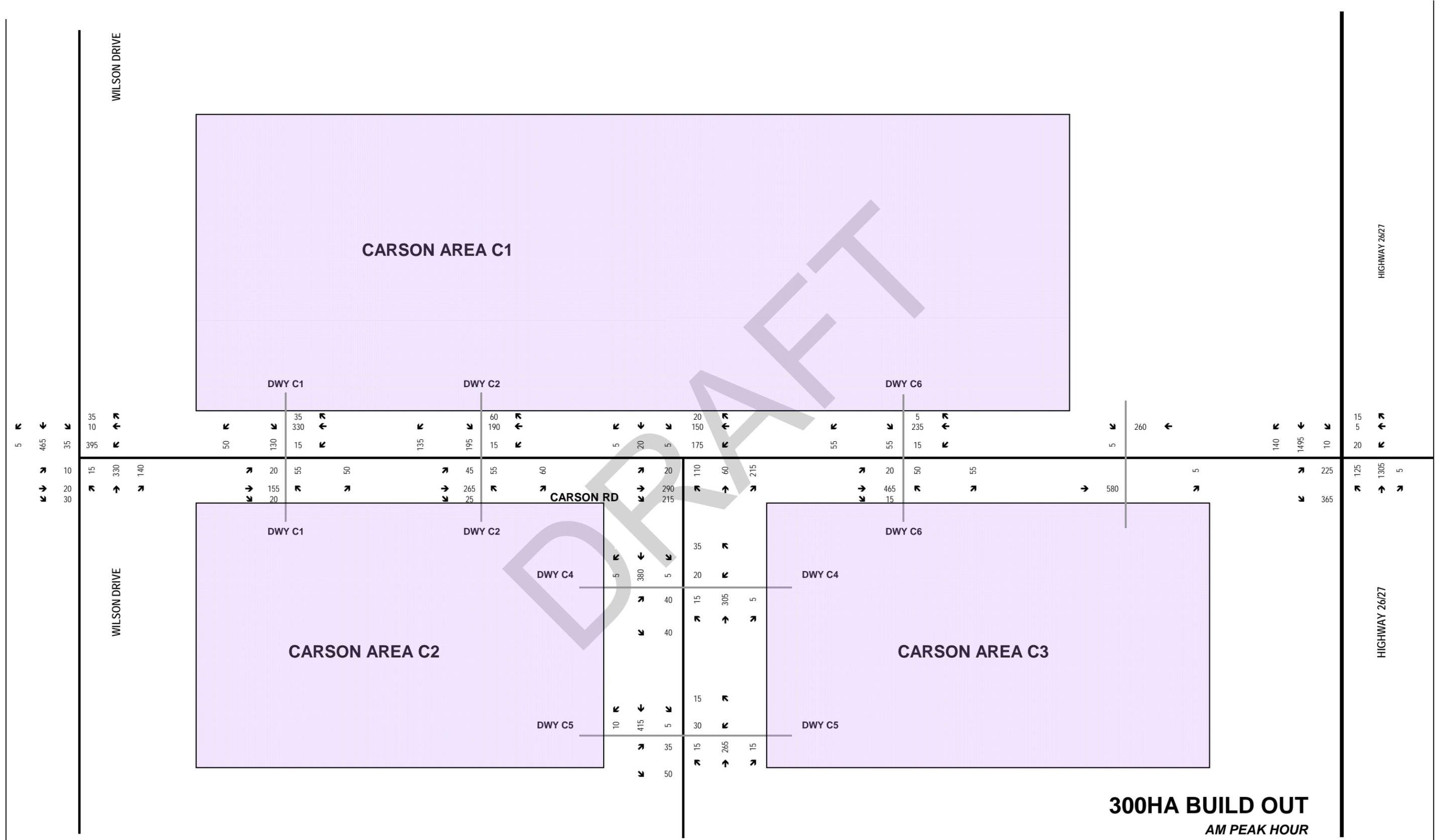
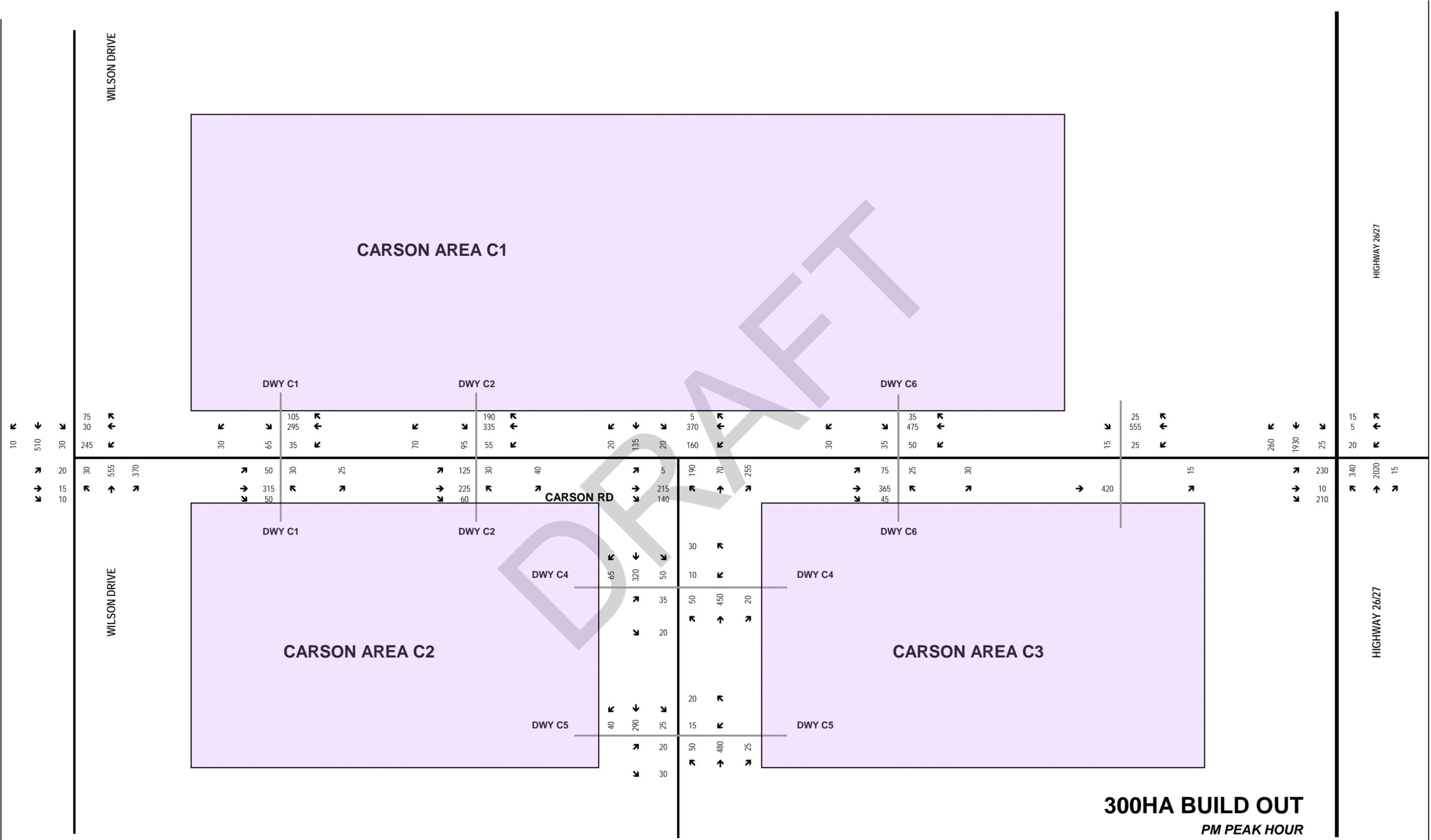


Figure 7



Attachment 1

Revised Trip Generation Information Including Revised Employment Estimates - Full Build-Out

16-May-14

Project No. 6860-10

P:\6860\10 Midhurst\Analysis\May 2014 LU Update\6860-10_Traffic Table_May 2014.xls\Trip Gen
23/05/2014 15:12

		SINGLE FAMILY RATE PER UNIT												MEDIUM DENSITY RATES PER UNIT									
Trip Rate / Unit	Rate ²	AM PEAK HOUR			PM PEAK HOUR			Trip Rate / Unit	Rate ²	AM PEAK HOUR			PM PEAK HOUR			Trip Rate / Unit	Rate ³	AM PEAK HOUR			PM PEAK HOUR		
		IN	OUT	2-WAY	IN	OUT	2-WAY			IN	OUT	2-WAY	IN	OUT	2-WAY			IN	OUT	2-WAY	IN	OUT	2-WAY
Development Area 2 (DORAN SOUTH)		Development Area 2 (DORAN SOUTH)												Community Area D									
Area D1- No. of Units¹:		Area D1- No. of Units¹:												Area D1- No. of Units¹:									
Total Trip Gen	1,285	220	680	900	655	375	1030	1,285	220	680	900	655	375	1030		0	0	0	0	0	0		
5% Reduction		10	35	45	35	20	55		10	35	45	35	20	55		0	0	0	0	0	0		
Empl. Reduction (5%AM; 10%PM)		10	30	45	60	35	100		10	30	45	60	35	100		0	0	0	0	0	0		
Resultant Trips		200	615	815	560	320	880		210	645	855	620	355	975		0	0	0	0	0	0		
Area D2 - No. of Units¹:		Area D2 - No. of Units¹:												Area D2 - No. of Units¹:									
Total Trip Gen	905	155	480	635	460	260	720	905	155	480	635	460	260	720		0	0	0	0	0	0		
5% Reduction		10	25	35	25	15	40		10	25	35	25	15	40		0	0	0	0	0	0		
Empl. Reduction (5%AM; 10%PM)		5	25	30	45	25	70		5	25	30	45	25	70		0	0	0	0	0	0		
Resultant Trips		140	430	570	390	220	610		145	455	600	435	245	680		0	0	0	0	0	0		
Area D3 - No. of Units¹:		Area D3 - No. of Units¹:												Area D3 - No. of Units¹:									
Total Trip Gen	730	125	385	510	370	210	580	730	125	385	510	370	210	580		0	0	0	0	0	0		
5% Reduction		5	20	25	20	10	30		5	20	25	20	10	30		0	0	0	0	0	0		
Empl. Reduction (5%AM; 10%PM)		5	20	25	35	20	55		5	20	25	35	20	55		0	0	0	0	0	0		
Resultant Trips		115	345	460	315	180	495		120	365	485	350	200	550		0	0	0	0	0	0		
Dev. Area 2 Totals	2,920	455	1390	1845	1265	720	1985	2,920	475	1465	1940	1405	800	2205	0	0	0	0	0	0	0		
Development Area 1 (ALLIANCE)		Development Area 1 (ALLIANCE)												Community Area B									
Area B		Alliance												Area B									
Total Trip Gen	2,379	405	1260	1665	1215	690	1905	2,379	405	1260	1665	1215	690	1905		0	0	0	0	0	0		
5% Reduction		20	65	85	60	35	95		20	65	85	60	35	95		0	0	0	0	0	0		
Empl. Reduction (5%AM; 10%PM)		20	60	80	115	65	180		20	60	80	115	65	180		0	0	0	0	0	0		
Resultant Trips		365	1135	1500	1040	590	1630		385	1195	1580	1155	655	1810		0	0	0	0	0	0		
Total Community Area B Trips	2,379	365	1135	1500	1040	590	1630	2,379	385	1195	1580	1155	655	1810	0	0	0	0	0	0	0		
Development Area 3 (CARSON)		Development Area 3 (CARSON)												Community Area C									
Area C1- No. of Units¹:		Area C1- No. of Units¹:												Area C1- No. of Units¹:									
Total Trip Gen	1,407	240	745	985	720	410	1130	1,407	240	745	985	720	410	1130		0	0	0	0	0	0		
5% Reduction		10	35	45	35	20	55		10	35	45	35	20	55		0	0	0	0	0	0		
Empl. Reduction (5%AM; 10%PM)		10	35	45	70	40	110		10	35	45	70	40	110		0	0	0	0	0	0		
Resultant Trips		220	675	895	615	350	965		230	710	940	685	390	1075		0	0	0	0	0	0		
Area C2- No. of Units¹:		Area C2- No. of Units¹:												Area C2- No. of Units¹:									
Total Trip Gen	768	130	405	535	390	225	615	768	130	405	535	390	225	615		0	0	0	0	0	0		
5% Reduction		5	20	25	20	10	30		5	20	25	20	10	30		0	0	0	0	0	0		
Empl. Reduction (5%AM; 10%PM)		5	20	25	35	20	60		5	20	25	35	20	60		0	0	0	0	0	0		
Resultant Trips		120	365	485	335	195	530		125	385	510	370	215	585		0	0	0	0	0	0		
Area C3- No. of Units:		Area C3- No. of Units:												Area C3- No. of Units:									
Total Trip Gen	384	65	205	270	195	110	305	384	65	205	270	195	110	305		0	0	0	0	0	0		
5% Reduction		5	10	15	10	5	15		5	10	15	10	5	15		0	0	0	0	0	0		
Empl. Reduction (5%AM; 10%PM)		5	10	15	20	10	30		5	10	15	20	10	30		0	0	0	0	0	0		
Resultant Trips		55	185	240	165	95	260		60	195	255	185	105	290		0	0	0	0	0	0		
Total Community Area C Trips	2,559	395	1225	1620	1115	640	1755	2,559	415	1290	1705	1240	710	1950	0	0	0	0	0	0	0		
EMPLOYMENT TRIPS		EMPLOYMENT TRIPS												MIXED USE EMPLOYMENT									
EMPLOYMENT	Rate²	AM			PM			EMPLOYMENT	Rate⁴	0.24 0.05 0.29			0.06 0.25 0.31			Community Area C	Rate	0.40 0.24 0.64			2.00 3.00 5.00		
ZONE E1 (North of SVR)	2,655	In	Out	2-way	In	Out	2-way	Area E1 # of Jobs (ppi)³	2,655	0.24	0.05	0.29	0.06	0.25	0.31	Area E2 (MU GFA)							
Total Trip Gen		635	135	770	160	665	825	Total Trip Gen		635	135	770	160	665	825	Total Trip Gen	0	0	0	0	0	0	
5% Reduction		30	5	35	10	35	45	5% Reduction		30	5	35	10	35	45	5% Reduction	0	0	0	0	0	0	
Resultant Trips		605	130	735	150	630	780	Resultant Trips		605	130	735	150	630	780	Resultant Trips	0	0	0	0	0	0	
ZONE E2 (south of SVR)	495,475	AM			PM			Area E1 # of Jobs (ppi)³	475	0.24 0.05 0.29			0.06 0.25 0.31			Area E2 (MU GFA)²	495,000						
Total Trip Gen	475	315	145	460	1020	1605	2625	Total Trip Gen		115	25	140	30	120	150	Total Trip Gen	200	120	320	990	1485	2475	
5% Reduction		15	5	20	50	80	130	5% Reduction		5	0	5	0	5	5	5% Reduction	10	5	15	50	75	125	
Pass By Trips (25%)		50	30	80	250	370	620	Pass By Trips (25%)		30	5	35	10	30	40	Pass By Trips (25%)	50	30	80	250	370	620	
Resultant Trips		250	110	360	720	1155	1875	Resultant Trips		80	20	100	20	85	105	Resultant Trips	140	85	225	690	1040	1730	
Total Employment	498,605	855	240	1095	870	1785	2655	Total Employment	3,130	685	150	835	170	715	885	Total Employment	495,000	140	85	225	690	1040	1730
TOTAL TRIPS³		2070	3990	6060	4290	3735	8025	TOTAL TRIPS⁴		1960	4100	6060	3970	2880	6850	TOTAL TRIPS³	140	85	225	690	1040	1730	

Notes:

- Number of units for each area assumed based on relative proportion of land area.
- Trip Rate based upon Bond Head TIS, and ITE Land Use Codes 230, ITE 110, ITE 820
- Based on total number of residential units, forecast employment numbers, mixed-use GFA

Notes:

- Number of units for each area assumed based on relative proportion of land area
- Trip Rate based upon Bond Head TIS
- Forecast number of employment jobs
- Trip Rates based on ITE Trip Gen, Manual 9th Edition (110 Land Use Code)

Notes:

- Number of units for High Density / Mixed use
- Volume of mixed-use GFA (including retail uses)
- Trip Rates based on ITE Trip Gen, Manual 9th Edition (820 Land Use Code)

Attachment 2

Revised Trip Generation Information Including Revised Employment Estimates - 300 Ha Build-Out

16-May-14

Project No. 6860-10

P:\6860\10 Midhurst\Analysis\May 2014 LU Update\6860-10_Traffic Table_May 2014.xls\Trip Gen
23/05/2014 15:15

		SINGLE FAMILY RATE PER UNIT												MEDIUM DENSITY RATES PER UNIT									
Trip Rate / Unit	Rate ²	AM PEAK HOUR			PM PEAK HOUR			Trip Rate / Unit	Rate ²	AM PEAK HOUR			PM PEAK HOUR			Trip Rate / Unit	Rate ³	AM PEAK HOUR			PM PEAK HOUR		
		IN	OUT	2-WAY	IN	OUT	2-WAY			IN	OUT	2-WAY	IN	OUT	2-WAY			IN	OUT	2-WAY	IN	OUT	2-WAY
Development Area 2 (DORAN SOUTH)		Development Area 2 (DORAN SOUTH)												Community Area D									
Area D1- No. of Units¹:		Area D1- No. of Units¹:												Area D1- No. of Units¹:									
Total Trip Gen	992	220	680	900	655	375	1030	1,285	220	680	900	655	375	1030			0	0	0	0	0	0	
5% Reduction		10	35	45	35	20	55		10	35	45	35	20	55			0	0	0	0	0	0	
Empl. Reduction (5%AM; 10%PM)		10	30	45	60	35	100		10	30	45	60	35	100			0	0	0	0	0	0	
Resultant Trips		200	615	815	560	320	880		210	645	855	620	355	975			0	0	0	0	0	0	
Area D2 - No. of Units¹:		Area D2 - No. of Units¹:												Area D2 - No. of Units¹:									
Total Trip Gen		155	480	635	460	260	720	905	155	480	635	460	260	720			0	0	0	0	0	0	
5% Reduction		10	25	35	25	15	40		10	25	35	25	15	40			0	0	0	0	0	0	
Empl. Reduction (5%AM; 10%PM)		5	25	30	45	25	70		5	25	30	45	25	70			0	0	0	0	0	0	
Resultant Trips		140	430	570	390	220	610		145	455	600	435	245	680			0	0	0	0	0	0	
Area D3 - No. of Units¹:		Area D3 - No. of Units¹:												Area D3 - No. of Units¹:									
Total Trip Gen		125	385	510	370	210	580	730	125	385	510	370	210	580			0	0	0	0	0	0	
5% Reduction		5	20	25	20	10	30		5	20	25	20	10	30			0	0	0	0	0	0	
Empl. Reduction (5%AM; 10%PM)		5	20	25	35	20	55		5	20	25	35	20	55			0	0	0	0	0	0	
Resultant Trips		115	345	460	315	180	495		120	365	485	350	200	550			0	0	0	0	0	0	
Dev. Area 2 Totals	992	455	1390	1845	1265	720	1985	2,920	475	1465	1940	1405	800	2205	0	0	0	0	0	0	0	0	
Development Area 1 (ALLIANCE)		Development Area 1 (ALLIANCE)												Community Area B									
Area B		Alliance												Area B									
Total Trip Gen	1,570	405	1260	1665	1215	690	1905	2,379	405	1260	1665	1215	690	1905			0	0	0	0	0	0	
5% Reduction		20	65	85	60	35	95		20	65	85	60	35	95			0	0	0	0	0	0	
Empl. Reduction (5%AM; 10%PM)		20	60	80	115	65	180		20	60	80	115	65	180			0	0	0	0	0	0	
Resultant Trips		365	1135	1500	1040	590	1630		385	1195	1580	1155	655	1810			0	0	0	0	0	0	
Total Community Area B Trips	1,570	365	1135	1500	1040	590	1630	2,379	385	1195	1580	1155	655	1810	0	0	0	0	0	0	0	0	
Development Area 3 (CARSON)		Development Area 3 (CARSON)												Community Area C									
Area C1- No. of Units¹:		Area C1- No. of Units¹:												Area C1- No. of Units¹:									
Total Trip Gen	1,407	240	745	985	720	410	1130	1,407	240	745	985	720	410	1130			0	0	0	0	0	0	
5% Reduction		10	35	45	35	20	55		10	35	45	35	20	55			0	0	0	0	0	0	
Empl. Reduction (5%AM; 10%PM)		10	35	45	70	40	110		10	35	45	70	40	110			0	0	0	0	0	0	
Resultant Trips		220	675	895	615	350	965		230	710	940	685	390	1075			0	0	0	0	0	0	
Area C2- No. of Units¹:		Area C2- No. of Units¹:												Area C2- No. of Units¹:									
Total Trip Gen	768	130	405	535	390	225	615	768	130	405	535	390	225	615			0	0	0	0	0	0	
5% Reduction		5	20	25	20	10	30		5	20	25	20	10	30			0	0	0	0	0	0	
Empl. Reduction (5%AM; 10%PM)		5	20	25	35	20	60		5	20	25	35	20	60			0	0	0	0	0	0	
Resultant Trips		120	365	485	335	195	530		125	385	510	370	215	585			0	0	0	0	0	0	
Area C3- No. of Units:		Area C3- No. of Units:												Area C3- No. of Units:									
Total Trip Gen	384	65	205	270	195	110	305	384	65	205	270	195	110	305			0	0	0	0	0	0	
5% Reduction		5	10	15	10	5	15		5	10	15	10	5	15			0	0	0	0	0	0	
Empl. Reduction (5%AM; 10%PM)		5	10	15	20	10	30		5	10	15	20	10	30			0	0	0	0	0	0	
Resultant Trips		55	185	240	165	95	260		60	195	255	185	105	290			0	0	0	0	0	0	
Total Community Area C Trips	2,559	395	1225	1620	1115	640	1755	2,559	415	1290	1705	1240	710	1950	0	0	0	0	0	0	0	0	
EMPLOYMENT TRIPS		EMPLOYMENT TRIPS												MIXED USE EMPLOYMENT									
EMPLOYMENT	Rate²	AM			PM			LIGHT INDUSTRIAL / BASIC EMPLOYMENT						MIXED USE EMPLOYMENT									
		In	Out	2-way	In	Out	2-way	Rate⁴	0.24	0.05	0.29	0.06	0.25	0.31	Rate	0.40	0.24	0.64	2.00	3.00	5.00		
ZONE E1 (North of SVR)	2,655	635	135	770	160	665	825	2,655	635	135	770	160	665	825									
Total Trip Gen		30	5	35	10	35	45		30	5	35	10	35	45									
5% Reduction		605	130	735	150	630	780		605	130	735	150	630	780									
Resultant Trips																							
ZONE E2 (south of SVR)	495,475	315	145	460	1020	1605	2625	475	115	25	140	30	120	150	495,000	200	120	320	990	1485	2475		
Total Trip Gen	475	15	5	20	50	80	130		5	0	5	0	5	5		10	5	15	50	75	125		
5% Reduction		50	30	80	250	370	620		30	5	35	10	30	40		50	30	80	250	370	620		
Pass By Trips (25%)		250	110	360	720	1155	1875		80	20	100	20	85	105		140	85	225	690	1040	1730		
Resultant Trips																							
Total Employment	498,605	855	240	1095	870	1785	2655	3,130	685	150	835	170	715	885	495,000	140	85	225	690	1040	1730		
TOTAL TRIPS³		2070	3990	6060	4290	3735	8025	TOTAL TRIPS⁴	1960	4100	6060	3970	2880	6850	TOTAL TRIPS³	140	85	225	690	1040	1730		

Notes:
 1. Number of units for each area assumed based on relative proportion of land area.
 2. Trip Rate based upon Bond Head TIS, and ITE Land Use Codes 230, ITE 110, ITE 820
 3. Forecast number of employment jobs
 4. Trip Rates based on ITE Trip Gen. Manual 9th Edition (110 Land Use Code)

ATTACHMENT 3: Synchro Capacity Analysis Results
Weekday PM Peak Hour, Full Built-Out of Secondary Plan, With Revised
Employment Land Use Estimates
 May 16 2014

Intersection	Weekday Afternoon Peak Hour								
	Overall			Movements of Interest					
	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	Queue (m)	
								50th	95th
Doran Rd & Russell Rd	0.38	11.1	B	EBL	0.27	15.0	B	7.3	18.6
				EBR	0.26	15.0	B	0.0	17.3
				NBL	0.46	6.0	A	10.0	28.6
				NBT	0.17	4.9	A	5.6	16.1
				SBT	0.39	15.0	B	12.0	28.7
				SBR	0.07	13.4	B	0.0	9.4
Doran Rd & Dwy D2	0.47	7.9	A	EBL	0.48	7.2	A	7.4	23.5
				EBT	0.59	8.0	A	18.7	47.1
				WBL	0.17	5.6	A	1.7	7.0
				WBT	0.47	6.8	A	13.5	34.3
				NBT	0.19	11.0	B	2.5	12.5
				SBT	0.24	11.2	B	3.0	16.4
Doran Rd & Dwy D1	0.62	14.8	B	EBL	0.23	8.0	A	7.8	16.3
				EBT	0.76	16.1	B	83.9	134.9
				WBL	0.16	8.2	A	2.0	6.3
				WBT	0.37	8.7	A	27.3	44.3
				NBL	0.34	24.9	C	15.8	30.9
				NBT	0.03	20.6	C	0.0	0.0
				SBL	0.16	22.2	C	7.5	17.1
				SBT	0.06	20.9	C	0.0	0.0
Pooles Rd & St. Vincent	0.63	11.5	B	EBT	0.17	27.6	C	0.4	5.0
				WBL	0.65	15.6	B	26.4	84.8
				WBT	0.03	10.2	B	0.3	6.2
				NBL	0.01	12.8	B	0.3	2.7
				NBT	0.64	18.1	B	24.8	65.9
				NBR	0.34	3.7	A	0.0	5.4
				SBL	0.17	13.7	B	2.5	11.2
				SBT	0.35	14.6	B	12.4	36.0
43: Finlay Mill Rd & Hwy 26/27	0.94	48.8	D	EBL	0.91	86.6	F	66.5	#117.5
				EBT	0.94	80.7	F	93.2	#152.9
				EBR	0.27	0.4	A	0.0	0.0
				WBL	0.94	101.2	F	31.3	#56.9
				WBT	0.84	84.2	F	48.6	#90.0
				WBR	0.36	55.7	E	13.4	36.3
				NBL	0.80	58.0	E	31.7	#69.7
				NBT	0.98	48.6	D	215.1	#273.4
				NBR	0.56	26.2	C	53.5	93.3
				SBL	1.00	94.5	F	60.5	#120.7
				SBT	0.89	34.6	C	188.6	226.3
Doran Rd & Russell	0.77	22.0	C	EBL	0.10	10.5	B	3.5	8.9
				EBT	0.87	26.3	C	95.2	#146.8
				WBL	0.72	24.4	C	8.8	#22.8
				WBT	0.36	8.6	A	26.7	42.4
				NBT	0.64	28.1	C	42.8	#80.6
SBT	0.19	20.0	C	6.5	19.9				

Doran

ATTACHMENT 3: Synchro Capacity Analysis Results
Weekday PM Peak Hour, Full Built-Out of Secondary Plan, With Revised
Employment Land Use Estimates
 May 16 2014

Hwy 26 and Hwy. 27	0.87	18.3	B	NBL	0.96	46.9	D	117.3	#226.5
				NBT	0.48	3.3	A	36.9	55.1
				SBT	0.81	31.3	C	89.3	118.9
				SBR	0.06	19.9	B	2.7	11.2
				SEL	0.40	42.5	D	9.6	22.9
				SER	0.56	1.4	A	0.0	0.0
Craig Rd. & Hwy 26/27	0.53	15.8	B	WBL	0.49	39.2	D	51.0	77.5
				WBR	0.01	31.0	C	0.0	6.4
				NBT	0.54	14.2	B	82.7	100.7
				NBR	0.12	9.7	A	1.4	10.0
				SBL	0.38	16.7	B	9.2	22.1
				SBT	0.38	12.0	B	50.0	62.5
Carson Rd West & Wilson Dr	0.38	20.5	C	EBL	0.08	34.0	C	3.4	10.1
				EBT	0.07	33.8	C	2.6	10.2
				WBL	0.55	32.8	C	40.3	65.2
				WBT	0.13	27.1	C	4.5	17.8
				NBL	0.11	17.1	B	3.5	9.7
				NBT	0.38	18.0	B	36.7	50.2
				NBR	0.25	17.0	B	0.0	16.1
				SBL	0.11	15.9	B	3.4	9.4
				SBT	0.36	17.8	B	33.9	46.7
Carson Rd West & Highway 26/27	0.91	30.7	C	EBL	0.87	76.1	E	58.7	#105.9
				EBT	0.17	41.0	D	2.2	24.3
				WBL	0.32	47.4	D	9.0	20.9
				WBT	0.02	38.7	D	1.0	8.2
				NBL	0.96	78.5	E	71.3	#132.3
				NBT	0.88	16.5	B	193.7	237.5
				NBR	0.03	4.4	A	0.0	3.0
				SBL	0.42	36.9	D	3.8	#17.7
				SBT	0.91	31.6	C	187.6	212.9
Carson Rd West & Dwy C3	0.49	18.4	B	EBL	0.01	16.4	B	0.5	2.8
				EBT	0.54	23.5	C	40.8	67.9
				WBL	0.41	15.5	B	13.6	24.4
				WBT	0.43	14.8	B	38.7	60.9
				NBL	0.42	20.7	C	22.9	41.5
				NBT	0.28	17.9	B	7.6	25.7
				SBL	0.07	15.8	B	2.1	6.8
				SBT	0.22	17.1	B	15.8	29.4
Carson Rd West & Dwy C2	0.48	6.6	A	EBL	0.36	5.4	A	4.4	15.6
				EBT	0.30	4.8	A	8.4	22.7
				WBL	0.10	4.2	A	1.7	6.4
				WBT	0.56	6.3	A	17.8	47.1
				NBL	0.10	10.4	B	1.5	7.5
				NBT	0.03	10.1	B	0.0	0.0
				SBL	0.30	11.3	B	4.8	17.7
				SBT	0.05	10.2	B	0.0	0.0

Doran

Carson

APPENDIX 'F'

Memorandum – Midhurst EA Transportation Work Update – BA Group, November 12, 2013

Memorandum

To:
Midhurst Landowners Group
c/o
Vimal Patel
Geranium Corporation

From:
Mark D. Jamieson
Associate

Date:
November 12, 2013

Project:
6860-10
Midhurst Phase 3&4 EA Process
P:\68\60\10 Midhurst\Memos\EA Analysis
Update_Nov2013\BA EA Update Memo - Final
Draft.docx

Page 1 of 3

DRAFT
Privileged and Confidential

**Subject: Midhurst EA Transportation Work
Update (*Draft Privileged and
Confidential*)**

This memorandum provides a brief summary of the work completed to date with respect to the Phase 3 & 4 EA process for the Midhurst Development Area in the Township of Springwater.

Background

BA Group was originally retained by Carson Road Development Inc. (CRDI) and Midhurst Development Doran Road Inc. (MDDRI) to undertake transportation studies with respect to their proposed development applications. In this regard BA Group submitted two reports in September 2009: one in conjunction with an application for CRDI's application for their lands in the Carson Road area, and another report for MDDRI for their lands in the Doran Road area.

At approximately the same time in 2009, Ainley & Associates completed a Phase 1-2 Class Environmental Assessment (EA) Study on behalf of the Township of Springwater. That study identified a recommended future road network for the Midhurst Secondary Plan . Based on the Phase 1-2 EA study, the following transportation improvements required further study as part of a Phase 3-4 EA process:

- construction of a new interchange at Pooles Road with Highway 400
- Construction of a 2-lane Craig Road from Russell Road to County Road 27; and
- a widening of Wilson Drive to 4 lanes from Snow Valley Road to Barrie City Limits.

Ainley & Associates commenced work on a Phase3&4 Class EA for the Water, Wastewater, and Transportation works in April 2013. BA Group was asked by the Midhurst Landowners Group (MLG) to assist with the preparation of background transportation analysis in connection with the three transportation projects that will be evaluated by the Phase 3-4 Class EA.

Work Completed To Date

In preparation for undertaking the analysis for the EA, BA Group undertook a series of traffic counts within, and adjacent to, the Midhurst Secondary Plan Area in June 2013 to update our baseline information that will be used in our analysis for the Phase 3-4 Class EA. Our previous traffic count information was collected in 2008 as part of our work in connection with their applications at the time draft plans. We have subsequently updated our traffic model for the Midhurst Secondary Plan area in preparation for our work on the Phase 3-4 Class EA.

Findings Related to Pre-Approved Schedule A+, A, B Projects

The updated counts suggest that there has been a general increase in traffic volumes between 2013 and 2008, most notably in the PM peak hour. Notwithstanding the increases in traffic volumes, our analysis indicates that the conclusions from the Phase 1-2 Class EA related to the Schedule A+, A, and B projects are still appropriate. No additional Class EA projects were identified through our updated analysis.

Several intersections in the study area were identified as candidates for intersection improvements (i.e. additional turn lanes) and/or improved intersection control (e.g. traffic signals) in the Phase 1-2 Class EA. These projects were classified as Schedule A or B projects and are therefore not included in the Phase 3-4 Class EA process.

While no further EA consideration is required, our analysis has reconfirmed our earlier conclusions with respect to two key intersections in the study area; namely that some intersection improvements will be required at the intersections of Carson Road / Highway 26, and at Highway 26 / Finlay Mill Road in order to accommodate 20 year build-out traffic projections. The design of any potential intersection improvements (including, but not limited to those listed above) will be reviewed and addressed as part of the ongoing draft plan review process.

A table summarizing our updated capacity analysis at key intersections in the study area is attached to this memo for your review. In addition, we have also attached several figures (done in Microsoft Excel format) that illustrate the updated 2013 traffic count information collected for the AM and PM peak hours.

Findings Related to Schedule C Projects

The following are our findings, based on our updated analysis, related to the Schedule C projects identified in the Phase 1&2 EA, being reviewed as part of the Phase 3-4 Class EA Process.

- A widening of Wilson Road to 4 lanes will be required from Snow Valley Road to the Barrie City limits.
- A large proportion of the traffic volumes generated by the Midhurst Secondary Plan areas will utilize the proposed interchange on Highway 400 at Pooles Road. The need for the interchange on Highway 400 will be triggered at full build out as the development areas east of Highway 26 (i.e. Neighbourhoods 2 and 3) develop and as such the interchange is therefore considered a requirement of a future phase of development.

- Traffic volumes generated within Midhurst will primarily be oriented to/from the south (hence resulting in the need to construct an interchange on Highway 400). Given the location of Craig Road at northern limit of the Midhurst Secondary Plan area there will be minimal demand to utilize the Craig Road extension by traffic generated within the Midhurst Secondary Plan area. Rather, our review suggests that the primary benefit of the Craig Road extension will be to off-load existing & future regional commuter traffic volumes (i.e. non-Midhurst vehicles) travelling between the Forbes Road interchange on Highway 400 and County Road 27 that would otherwise use Finlay Mill Road and Doran Road. In this regard, the need for a Craig Road extension is not generated by development within Midhurst itself, but rather is an improvement that is intended to provide a greater network benefit for all area traffic by constructing a new connection between Highway 400 and County Road 27.

Next Steps

We suggest that we have a meeting with you and the staff at Ainley responsible for the Phase 3&4 Class EA to discuss and confirm the scope of our analysis going forward. Specifically we would like to clarify a process for evaluating the three Schedule C transportation projects which are the subject of additional analysis through the Phase 3-4 Class EA process.

I look forward to being able to meet to discuss these things with you. In the meantime, if you have any questions, please feel free to contact me directly.

Intersection Analysis

Intersection	AM Peak Hour		PM Peak Hour		Intersection	AM Peak Hour		PM Peak Hour		Intersection	AM Peak Hour		PM Peak Hour			
	2008	2013	2008	2013		2008	2013	2008	2013		2008	2013	2008	2013		
Highway 26/27 & Carson Rd.	LOS		LOS		Highway 26/27 & Finlay Mill Rd.	LOS		LOS		Wilson Dr. & Carson Rd.	LOS		LOS			
	D	D	D	D		D	D	D	E		B	B	B	B		
	V/C		V/C			V/C		V/C			V/C		V/C		V/C	
	0.97	0.97	0.97	1.02		0.67	0.74	0.85	0.90		0.71	0.70	0.54	0.57		
	Delay		Delay			Delay		Delay			Delay		Delay		Delay	
	42.6	41.7	42.0	42.9		38.0	39.0	47.5	59.5		18.7	18.4	14.2	14.7		

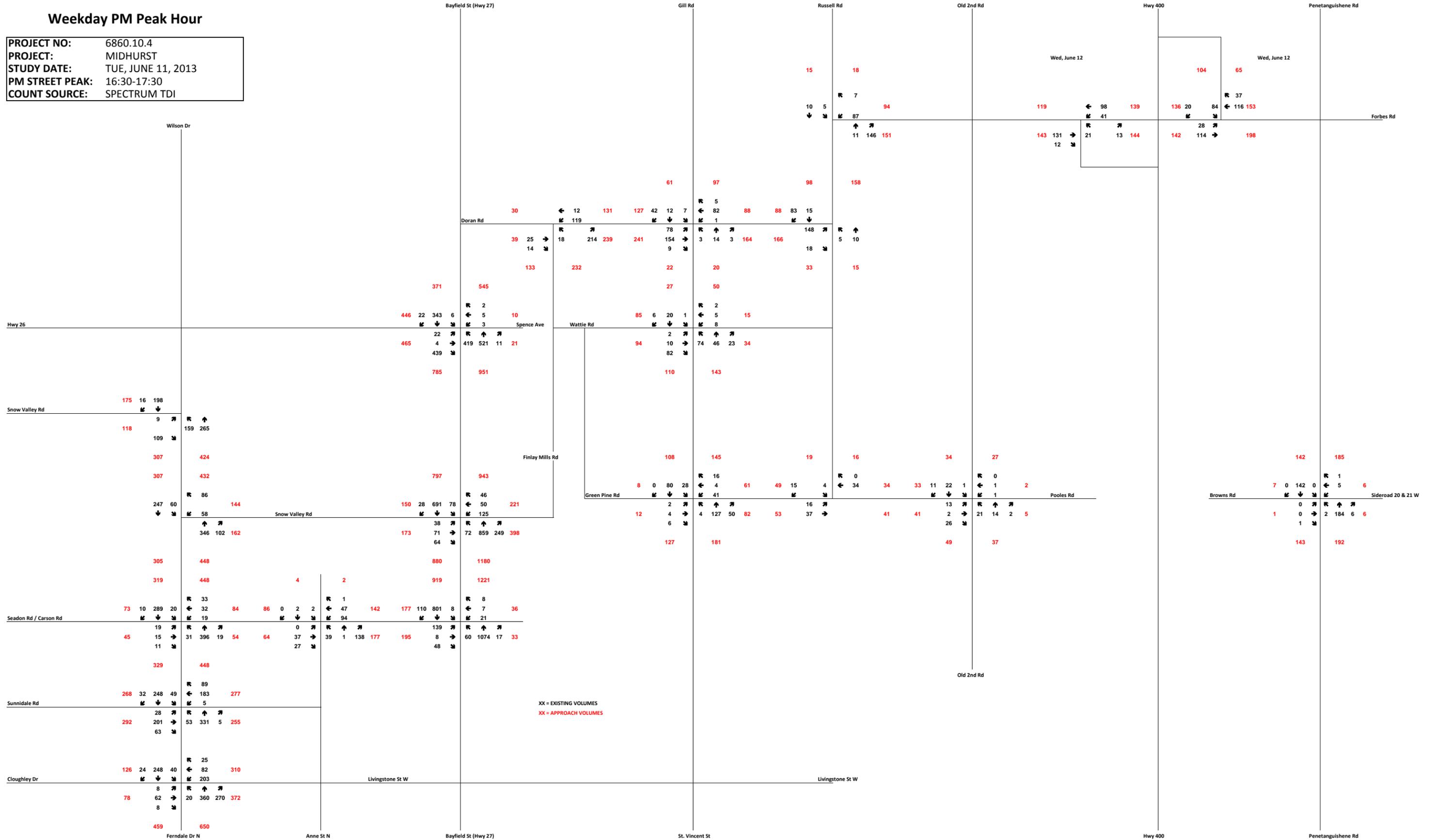
Better LOS
 Worse LOS

Movement Analysis

Intersection	AM PEAK HOUR							PM PEAK HOUR						
	2008 Base Volumes				2013 Base Volumes			2008 Base Volumes				2013 Base Volumes		
	Movement	V/C	Delay (s)	LOS	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	V/C	Delay (s)	LOS
Highway 26/27 & Carson Rd.	EBL	0.98	86.3	F	0.89	68.0	E	EBL	1.02	108.2	F	1.01	94.3	F
	EBTR	0.98	84.8	F	0.98	83.2	F	EBTR	0.17	41.7	D	0.21	42.3	D
	WBL	0.34	50.4	D	0.34	49.7	D	WBL	0.19	44.6	D	0.36	51.0	E
	WBTR	0.01	33.2	C	0.01	32.4	C	WBTR	0.00	39.2	D	0.02	39.4	D
	NBL	0.89	82.5	F	0.91	83.4	F	NBL	1.05	99.9	F	1.06	131.0	F
	NBT	0.41	9.2	A	0.46	10.2	B	NBT	0.67	9.3	A	0.76	11.6	B
	NBR	0.01	6.4	A	0.00	6.7	A	NBR	0.01	4.1	A	0.01	4.1	A
	SBL	0.02	10.6	B	0.04	11.8	B	SBL	0.04	14.9	B	0.14	19.1	B
SBTR	0.97	38.1	D	0.98	40.5	D	SBTR	1.02	55.8	E	1.02	50.4	E	
Highway 26/27 & Finlay Mill Rd.	EBL	0.34	46.9	E	0.52	73.1	E	EBL	0.42	64.4	E	0.68	94.4	F
	EBTR	0.19	42.8	D	0.28	46.1	D	EBTR	0.51	51.8	D	0.69	62.0	E
	WBL	0.70	44.9	D	0.71	43.8	D	WBL	0.67	53.3	D	0.76	59.5	E
	WBTR	0.77	53.8	D	0.78	52.3	D	WBTR	0.42	49.7	D	0.86	80.2	F
	NBL	0.61	58.8	E	0.48	48.4	D	NBL	0.34	34.3	C	0.55	44.1	D
	NBT	0.73	36.4	D	0.80	40.8	D	NBT	0.99	60.5	E	0.99	60.1	E
	NBR	0.16	26.2	C	0.18	27.8	C	NBR	0.81	46.2	D	0.99	72.9	E
	SBL	0.72	49.9	D	0.7	46.5	D	SBL	1.03	93.1	F	1.04	93.1	F
SBTR	0.74	29.8	C	0.74	29.8	C	SBTR	0.63	19.0	B	0.63	16.9	B	
Carson Rd. & Wilson Dr.	WBL	0.74	22.8	C	0.74	23.1	C	WBL	0.49	16.3	B	0.47	15.9	B
	WBR	0.04	8.4	A	0.05	8.4	A	WBR	0.06	8.6	A	0.06	8.5	A
	NBT	0.34	14.2	B	0.36	14.4	B	NBT	0.57	16.0	B	0.64	17.4	B
	NBR	0.12	12.0	B	0.12	12.0	B	NBR	0.32	12.4	B	0.31	12.3	B
	SBL	0.10	12.1	B	0.1	12	B	SBL	0.18	11.7	B	0.21	12.5	B
	SBT	0.69	20.8	C	0.65	19.8	B	SBT	0.45	13.8	B	0.48	14.3	B

Weekday PM Peak Hour

PROJECT NO: 6860.10.4
PROJECT: MIDHURST
STUDY DATE: TUE, JUNE 11, 2013
PM STREET PEAK: 16:30-17:30
COUNT SOURCE: SPECTRUM TDI



APPENDIX 'G'

Memorandum – Updated Midhurst Roundabout Analysis – BA Group, June 11, 2015

Memorandum

TO:

**The Township of Springwater
c/o Ainley and Associates**

FROM:

Ian F. Clark, B.A., M.SC.PI.
Mark Jamieson

PROJECT:

6860-10
Midhurst EA

DATE:

July 18th, 2014.
Updated: June 11th, 2015.

SUBJECT: UPDATED MIDHURST ROUNDABOUT ANALYSIS

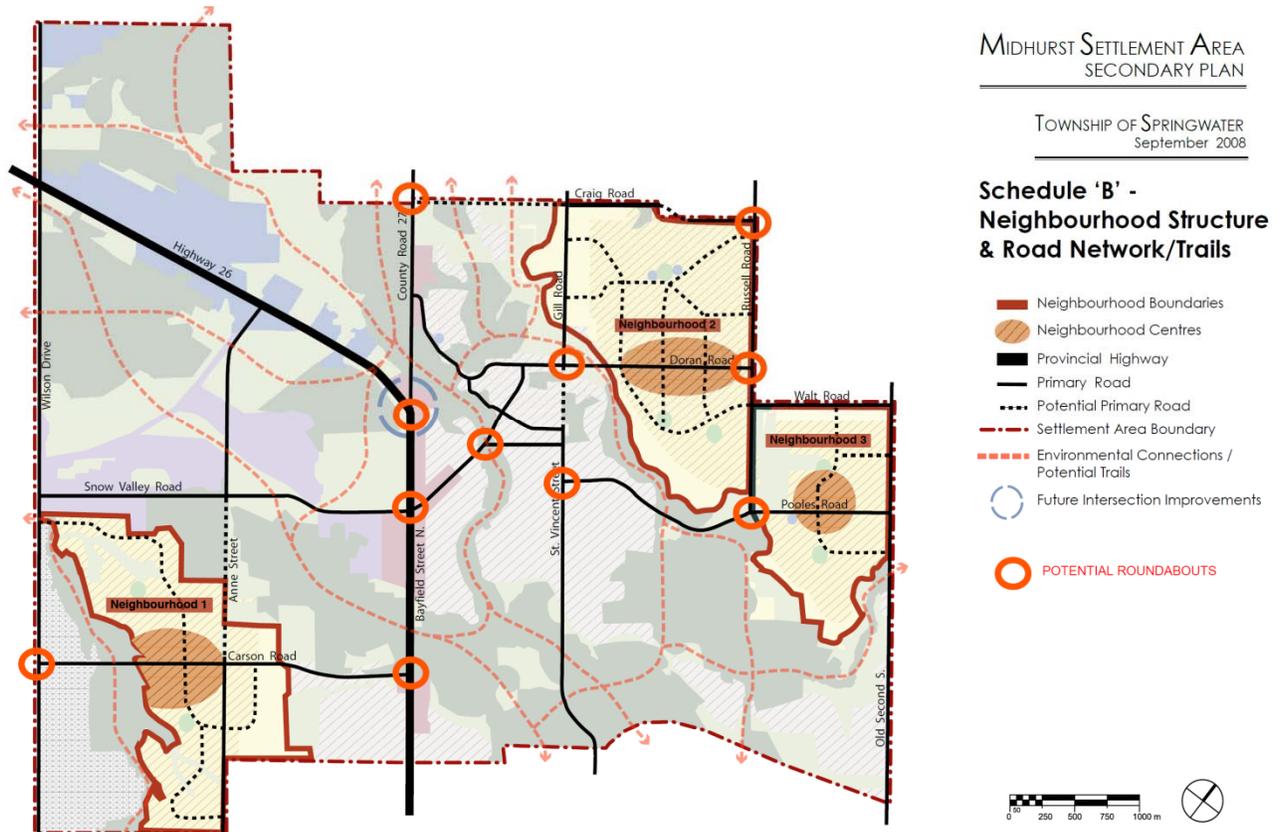
The purpose of this memorandum is to outline and evaluate potential locations for the implementation of roundabouts within the Midhurst Secondary Plan area as requested by Ainley and Associates. Roundabouts, in certain situations, have been shown to effectively improve safety, reduce traffic speeds and delay times, increase traffic capacity, mitigate environmental impacts associated with idling and stop-and-go traffic movements, have lower maintenance costs, and can be aesthetically pleasing.

A map of locations where a roundabout feasibility analysis has been undertaken is shown in Figure 1.

A total of 11 intersections external to the Carson and Doran development areas were considered based on locations where signal or intersection improvements were recommended in the Midhurst Phase 1 & 2 Class EA report from 2008. These 11 intersections comprise a long list of intersections to be analyzed, and are as follows:

1. Wilson Road and Carson Road
2. Bayfield Road and Carson Road
3. Bayfield Road and Finlay Mill Road / Snow Valley Road
4. Highway 26 and Highway 27
5. Highway 27 and future Craig Road
6. Finlay Mill Road and Wattie Road
7. St. Vincent Street / Gill Road and Doran Road
8. St. Vincent Street and Pooles Road
9. Russell Road and Doran Road
10. Russell Road and Pooles Road
11. Russell Road and future Craig Road

FIGURE 1 POTENTIAL ROUNDABOUT LOCATIONS



This memorandum was first submitted for review on July 18th 2014. Preliminary comments were received from the Township of Springwater's engineering consultant (Ainley Group) in February 2015. Specifically a more detailed review of two roundabout locations was requested, namely:

- Finlay Mill Road / Bayfield (Highway 26) / Snow Valley Road; and
- Pooles Road / Russell Road.

Additional analysis has been undertaken in this regard and this revised memorandum summarizes the updated analysis.

LONG LIST: PRELIMINARY REVIEW (PRE-SCREENING ANALYSIS)

BA Group undertook a pre-screening analysis of the aforementioned complete list of potential roundabout intersections. This pre-screening analysis focused on the high-level geometric 'fit' of a roundabout. Key design impacts considered was whether a roundabout could be feasibly constructed with minimal property and environmental impacts and without significant expropriation. In this regard, a roundabout location that was determined to have significant property impacts and / or a significant impact to a natural heritage or environmental area were not carried forward for more detailed analysis.

Base roundabout design criteria for dual-lane (rural application) and single-lane (urban application) roundabouts were adopted based on the Federal Highway Administration (FHWA) guidelines for roundabouts (Roundabouts: An Information Guide). Two different roundabout dimension templates were used based on the context of the roundabout location – either high-capacity rural location or moderate capacity urban location. The high-capacity rural application included a 60 m roundabout diameter (i.e. a double lane roundabout), while the urban application included a 40 m diameter (i.e. a single lane roundabout). These roundabout dimensions were subsequently used in as the primary basis of the pre-screening analysis when determining whether roundabouts could be accommodated without significant property, environmental, and land use impacts. The preliminary pre-screening design ‘fit’ analysis for the roundabout locations are included in **Appendix A**.

Table 1 summarizes the results of this preliminary pre-screening review. This analysis was updated based on comments received from Ainley Group. In Table 1 below an “X” illustrates that the intersection was screened out and not carried forward for a more detailed evaluation. Alternatively, a checkmark indicates that there may be sufficient space to implement an appropriate roundabout (subject to a more detailed evaluation).

TABLE 1 PRE-SCREENING (SIGNIFICANT PROPERTY/ENVIRONMENTAL IMPACTS)

Location	Type	Assessment
Wilson Road and Carson Road	Double Lane	✓
Highway 26 (Bayfield Street) and Carson Road	Double Lane	✓
Highway 26 (Bayfield Street) and Snow Valley Road / Finlay Mill Road	Double Lane	✓
Highway 26 (Bayfield Street) and County Road 27 Split	Double Lane	✓
County Road 27 and Future Craig Road Extension	Double Lane	✓
Finlay Mill Road and Wattie Road ¹	Single Lane	✗
St. Vincent Street and Pooles Road ¹	Single Lane	✗
Doran Road and St. Vincent Street / Gill Road	Single Lane	✓
Russell Road and Pooles Road ²	Single Lane	✗
Russell Road and Doran Road	Single Lane	✓
Russell Road and Forbes Road	Single Lane	✓

Notes: 1. Significant property impact was evaluated on whether a roundabout could not be implemented without having to expropriate an entire adjacent property (versus a portion of property), or if the roundabout required significant expropriation on all four quadrants of the intersection.
2. Significant impact to environmental area.

Based on the pre-screening analysis, three intersections were removed from further evaluation. A brief discussion of the rationale for screening out each intersection is provided below.

The intersections of Finlay Mill Road / Wattie Road and St. Vincent Street / Pooles Road were screened out because it was determined that a roundabout construction in these locations would have significant property



impacts to the adjacent properties. That is, a roundabout could not be implemented without having to expropriate the entire property, or if the roundabout required a significant expropriation from all four corners of the intersection.

With respect to Russell Road / Pooles Road, at the request of Ainley Group a further review of shifting the roundabout northward to avoid impacts to the natural heritage area located on the south side of Pooles Road was undertaken. To assist in the review, input on the potential natural heritage impacts was sought from natural heritage consultant Beacon Environmental. The input received from Beacon determined that the lands north of Pooles Road in the vicinity of Russell Road are classified as 'Environmental Protection Area II' (EPA II) in the Midhurst Secondary Plan. This designation would require an Environmental Impact Statement (EIS) be prepared for and development to proceed adjacent to, or within, an EPA II area.

A preliminary review by Beacon suggests that the lands on the northeast of the intersection would likely be considered a significant woodlot and could not be disturbed. This would require any roundabout to be located completely within the northwest quadrant of the intersection. A fit analysis was therefore undertaken based on upon a northwest quadrant location. The fit analysis indicates that locating a roundabout on the northwest quadrant would require a significant amount of fill (in the order of 2 metres) within the EPA II area to create the roundabout road base. Based on discussions with Beacon this level of impact to the northwest quadrant would likely not be permitted as the northwest quadrant, while it does not have the same extent of mature forest as the northeast quadrant, is still likely a significant habitat for local wildlife.

Therefore based on discussions with Beacon, the impacts of a roundabout at the Pooles Road / Russell Road intersection on the EPA II lands would be inconsistent with conservation mandates to protect natural features including trees, forested areas, and wetlands and would likely not be supported by the conservation authority. As a result the intersection of Pooles Road / Russell Road was not carried forward for a detailed operational evaluation.

The intersection of Highway 26 / Finlay Mill / Snow valley Road was originally pre-screened and not carried forward for additional analysis due to significant property implications. However, based on input received from Ainley Group however additional design options were reviewed and it was determined that a design could be achieved with reduced property impacts and this intersection was therefore carried forward for a more detailed analysis. The results of the revised detailed evaluation are provided below.

Appendix A includes the various roundabout 'fit' design exercises undertaken as part of the pre-screening analysis.

SHORT LIST: DETAILED EVALUATION

A short-list of potential roundabout locations was derived from the pre-screening analysis. This short list of locations was further analyzed to determine their appropriateness for a roundabout. The following eight (8) intersections were determined to have a potential feasibility for a roundabout subject to further detailed evaluation:

1. Wilson Road and Carson Road
2. Highway 26 (Bayfield Street) and Carson Road
3. Highway 26 (Bayfield Street) and County Road 27
4. Highway 26 (Bayfield Street) and Snow Valley / Finlay Mill Road
5. County Road 27 and future Craig Road
6. Russell Road and Doran Road
7. Russell Road and future Craig Road / Forbes Road
8. Doran Road and St. Vincent Street / Gill Road

Methodology

The detailed evaluation for each intersection considered the following methodology:

1) Design Impacts

- Geometry
- Property and natural environment implications
- Grading and sightline issues
- Safety benefits
- Estimated cost

2) Pedestrian and Cyclist Impacts

- Anticipated future pedestrian / cyclists volumes

3) Traffic Operations

- Ability to accommodate forecast traffic volumes
- Ability to improve traffic operations compared to a traffic signals
- Expected traffic flows best suited to a roundabout

The detailed evaluation is segmented into three key components with several criteria for each. The evaluation criteria and the basis for performance are summarized in Table 2.



TABLE 2 DETAILED EVALUATION CRITERIA

Criteria	Performance Measure
Design Impacts	
Geometry	Single lane or dual lane
Property Implications	<p>Low: Little or no intrusion onto surrounding property or natural features (<20m²) and no impact to existing structures.</p> <p>Moderate: Little intrusion onto surrounding property or natural features (<20m²), but with impacts to driveways and / or structures.</p> <p>High: Requires full property expropriation or significant encroachment into surrounding natural areas (>20m²),</p>
Grading and Sightlines	<p>Low: The intersection is built on level terrain with good sightlines for approaching vehicles.</p> <p>Moderate: The intersection is built on level terrain, but with moderately restricted sightlines for approaching vehicles.</p> <p>High: A roundabout would be restricted by undulating geography and would have restricted sightlines for approaching vehicles.</p>
Safety Benefits	<p>Ability to lower speeds to limit collision severity, relative to existing roadway alignment and planned intersections improvements ¹.</p> <p>Negligible: Less than 10km/hr reduction in relative approach speeds.</p> <p>Low: 10km/hr to 20km/hr reduction in relative approach speeds.</p> <p>Moderate: 21km/hr to 40km/hr reduction in relative approach speeds.</p> <p>High: >40km/hr reduction in relative approach speeds.</p>
Estimated Cost	<p>Cost comparison between different types and locations of roundabouts is roughly evaluated based on roundabout size and property/environmental implications.</p> <p>Low: Single-lane roundabout with little to no property impacts.</p> <p>Moderate: Single-lane roundabout with moderate property impacts, or dual-lane roundabout without property impacts.</p> <p>High: Dual-lane roundabout with moderate property impacts.</p>
Pedestrian and Cycling Impacts	
Convenient pedestrian routing	<p>Pedestrian and cyclist routing is inconvenienced by roundabout design relative to traditional intersection design.</p> <p>Rural condition: Low volume of pedestrian and cyclist activity Urban condition: Moderate or frequent volume of pedestrian and cyclist activity</p>



Table 2 Detailed Evaluation Criteria (Table Continued)

<i>Traffic Operations</i>	
Ability to accommodate future forecast traffic volumes	<p>Based on a roundabout capacity analysis assuming forecast future traffic volumes. The key metric is the volume-to-capacity (v/c) ratio, whereby a v/c ratio of 1.00 means the movement is at capacity.</p> <p>Good: 1 or more intersection approaches = v/c ratio <0.80</p> <p>Moderate: 1 or more intersection approaches = v/c ratio 0.80 to 0.99</p> <p>Poor: 1 or more intersection approaches = v/c ratio >0.99</p>
Ability to improve traffic operations compared to a traffic signal	<p>Based on the difference between overall v/c ratios for signalized intersection operations (without improvements) and roundabout intersections during the prevailing afternoon peak hour.</p> <p>Good: Reduction in v/c ratio of >0.15</p> <p>Moderate: Reduction in v/c ratio of <0.15</p> <p>Poor: Increase in v/c ratio</p>
Expected traffic flows best suited to a roundabout	<p>Roundabout traffic operations work best when primary movements do not conflict within a circle. Where heavy approach leg volumes conflict there is prevalence for merging and weaving manoeuvres within the roundabout. The key parameter in this regard is the proportion of high volume traffic merging points. The number of merging points is based on the number of approach legs.</p> <p>Good: 1 major conflict for 3-leg; 2 major conflicts for 4-leg</p> <p>Moderate: 2 major conflicts for 3-leg; 3 major conflicts for 4-leg</p> <p>Poor: 3 major conflicts for 3-leg; 4 major conflicts for 4-leg</p>

Notes:

1. Roundabout speeds assumed to be 30km/hr for single-lane roundabouts and 40km/hr for dual lane roundabouts. Existing speeds assumed to be the posted speed limit plus 10km/hr.

Traffic operations criteria were evaluated based on results obtained from traffic operations analysis undertaken by BA Group using *Rodel Traffic Software*. *Rodel* is a roundabout software analysis program jointly developed by Rodel Software Ltd. and Staffordshire County Council. *Rodel* is a commonly accepted roundabout analysis software program that is utilized in Canadian Municipalities that have been actively implementing roundabout. Examples include the City of Hamilton and Region of Waterloo.

Key analysis inputs for the *Rodel* analysis were derived from the Region of Waterloo's *Rodel* guideline document entitled: *Default Rodel Parameters (2009)*. Traffic forecasts utilized in the analysis were taken from the May 2014 Traffic Projection Estimate Update. The resulting detailed traffic operations analysis for each roundabout is included in **Appendix B**.



Detailed Evaluation Results

A summary of the detailed evaluation is shown in Table 3.

TABLE 3 DETAILED ROUNDABOUT FEASIBILITY EVALUATION

Criteria	Wilson & Carson	Bayfield & Carson	Hwy. 26 & Finlay Mill Rd.	Hwy. 26 & Hwy. 27 Split	County Road 27 & future Craig Rd.	Russell & Doran	Russell & future Craig Rd.	Doran & St. Vincent ³
Design								
Type (single lane vs. double lane)	2-lane 60m diameter	2-lane 60m diameter	2-lane 60m diameter	2-lane 60m diameter	2-lane 60m diameter	1-lane 40m diameter	1-lane 40m diameter	1-lane 40m diameter
Property Implications ¹	Low	Low	Moderate	Low	Pending	Low	Pending	Moderate
Grading and Sightline Issues ¹	Low	Low	Low	Low	Pending	Low	Pending	High
Safety Benefits	Moderate	High	Moderate	High	High	Moderate	High	Moderate
Estimated Cost ¹	Moderate	High	High	Moderate	Moderate to High	Moderate	Low to Moderate	Moderate
Pedestrian / Bicycle Impacts								
Inconvenient routing	Rural condition	Urban condition	Urban condition	Urban condition				
Traffic Operations ⁴								
Ability to Accommodate Future Traffic Volumes	Good	Poor	Poor	Moderate	Good	Good	Good	n/a
Ability to Improve Future Traffic Operations Compared to a Traffic Signal	Good	Moderate	Poor	Moderate	Poor	Moderate	Good	n/a
Expected traffic flows best suited for a roundabout ²	Good	Poor	Poor	Good	Moderate	Good	Good	n/a
Overall Suitability	Good	Poor	Poor	Moderate	Moderate	Good	Good	Poor

Notes:

1. Grading, sightline and property impact issues for future Craig Road intersections ultimately depends on the chosen future alignment of the roadway.
2. Criteria for suitability includes the proportion of high traffic volume merging points anticipated within a roundabout. The number of merging points is based on the number of approach legs.
3. Based on issues related to grading and sightlines, the intersection of Doran Road and St. Vincent Street / Gill Road was removed from the list of potential roundabout locations and was not analyzed as part of the traffic operations evaluation.
4. Detailed traffic operations analysis results included in Appendix B.

Intersections Not Feasible For Roundabouts

Based on the detailed review of design implications, it was determined that the intersection of Doran Road and St. Vincent Street / Gill Road is not an appropriate location for a roundabout due to its location on a westwards downhill slope with significant grading challenges on the intersection's northeast quadrant. Sightline issues may also be prevalent from down-hill locations on Doran Road and St. Vincent Street. Based



on this assessment, the intersection of Doran Road and St. Vincent Street / Gill Road was removed from the list of potential roundabout locations and was not analyzed further.

Two intersections were estimated have poor intersection operations as a roundabout under future traffic volumes. These include the intersection of Finlay Mill Road/ Highway 26 / Snow Valley Road, and the intersection of Carson Road and Highway 26. The roundabout capacity analysis indicates that future traffic volumes at these intersections would not be adequately accommodated by a roundabout. Various movements were shown to operate with a volume to capacity ratio (V/C ratio) during both the weekday morning and afternoon peak hours exceeding 1.0. By way of example, the estimated v/c ratio for the northbound approach at Highway 26 / Finlay Mill Road during the weekday afternoon peak hour is 2.30. As a result these intersections were determined not to be appropriate for a roundabout.

Intersections Moderately Suitable for Roundabouts

The analysis determined two intersections to be moderately suitable for a roundabout. They are the intersection of Highway 26 / County Road 27 (referred to as the Highway 26 split). The roundabout capacity analysis indicates that future traffic volumes at the Highway 26 and County Road 27 split can be accommodated by a roundabout. However, during the weekday afternoon peak hour, the northbound leg would operate near capacity (V/C ratio of 0.96) while southbound and eastbound movements would operate with volume-to-capacity ratios of 0.81 and 0.80, respectively. This resulted in a moderate score in the category of improving traffic operations and ability to accommodate future traffic volumes. From a design perspective however a roundabout design can be reasonably achieved and would provide a safety benefit as it would eliminate the high-speed northbound left turn conflict that currently exists. As a result this intersection was determined to be moderately suited for a roundabout.

The intersection of County Road 27 and the future Craig Road extension was also determined to be moderately suited for a roundabout operation. A roundabout will have safety benefits compared to a typical intersection, however much of the feasibility will depend on the detailed geometric design for the future Craig Road extension which is still to be confirmed. From a traffic operations perspective a roundabout will perform slightly lower than a typical intersection given that the majority of traffic volumes are expected to be north-south on County Road 27 which will experience a higher delay with a roundabout (i.e. it will slow vehicles down) compared to if the intersection operated as a typical T-intersection.

Intersections Well Suited for Roundabouts

Lastly, three intersections were determined to be well suited to being a roundabout. These intersections include:

- Doran Road / Russell Road;
- Wilson Road / Anne Street; and
- Russell Road / Forbes Road / Future Craig Street extension.

Preliminary functional design plans were prepared for each intersection that ranked as moderately or well suited for a roundabout. The preliminary functional design plans are attached in Appendix C.

SUMMARY OF KEY FINDINGS / CONCLUSIONS

This memorandum provides a summary of a roundabout feasibility analysis undertaken by BA Group for selected intersections slated for improvement in the Midhurst Class EA process. This memorandum was originally submitted in July 2014 and has been revised to address comments received from Ainley Group.

The purpose of this memorandum is to identify and evaluate potential locations for the implementation of roundabouts within the Midhurst Secondary Plan area. Our review included an initial pre-screening analysis of eleven potential roundabout locations, followed by a more detailed roundabout evaluation based on additional criteria including design details, pedestrian and cycling impacts, and traffic operations.

Key findings are outlined below:

Pre-screening Analysis

A list of eleven (11) potential roundabout locations were evaluated using a pre-screened analysis to determine whether appropriately proportioned roundabouts could be feasibly accommodated without significant property, environmental, and land use impacts. A total of 11 intersections were evaluated, and includes the following intersections:

1. Wilson Road and Carson Road
2. Highway 26 (Bayfield Street) and Carson Road
3. Highway 26 (Bayfield Street) and Finlay Mill Road / Snow Valley Road
4. Highway 26 (Bayfield Street) and County Road 27
5. County Road 27 and future Craig Road
6. Finlay Mill Road and Wattie Road
7. St. Vincent Street / Gill Road and Doran Road
8. St. Vincent Street and Pooles Road
9. Russell Road and Doran Road
10. Russell Road and Pooles Road
11. Russell Road and future Craig Road / Forbes Road

Three intersections were eliminated in the pre-screening analysis because they were determined to have a significant impact to environmentally sensitive areas, or because they would have significant property implications. The locations eliminated through the pre-screening analysis include:

- St. Vincent Street / Pooles Road;
- Finlay Mill Road / Wattie Road; and
- Pooles Road / Russell Road.

Based on the pre-screening evaluation, a total of eight (8) roundabout locations were deemed appropriate for a more detailed feasibility evaluation. The short-list of intersections carried forward for detailed roundabout feasibility analysis were:

1. Wilson Road and Carson Road
2. Highway 26 (Bayfield Street) and Carson Road
3. Highway 26 (Bayfield Street) and County Road 27



4. Highway 26 (Bayfield Street) and Snow Valley / Finlay Mill Road
5. County Road 27 and future Craig Road
6. Russell Road and Doran Road
7. Russell Road and future Craig Road / Forbes Road
8. Doran Road and St. Vincent Street / Gill Road

Detailed Evaluation

The detailed analysis determined that a roundabout would likely not accommodate future traffic volumes at two intersections along Highway 26 (Bayfield Street). This includes Highway 26 at Snow Valley Road / Finlay Mill Road, and Highway 26 at Carson Road. In both cases there is a large amount of north-south traffic forecasted to occur on Highway 26 which will have significantly worse traffic operations under roundabout operation compared to that of a traffic signal. These two intersections were therefore determined not suitable to operate as a roundabout. In addition, the intersection of Doran Road and St. Vincent Street was also determined to be unsuitable for a roundabout given a more detailed review of road grades on Doran Road which has a large hill in the vicinity of St. Vincent Street due to a roundabout requiring a significant amount of re-grading at the intersection which, in turn, would result in significant property impacts at the intersection.

Of the eight short-listed determined that three (3) intersection locations are **well suited** to accommodating a roundabout. The three locations scored well under all evaluation criteria including ability to accommodate forecast traffic volumes, minimal or manageable property impacts, and provides a safety benefit. The three locations determined to be well suited include:

1. **Wilson Road and Carson Road**
2. **Russell Road and future Craig Road**
3. **Russell Road and Doran Road**

Two (2) other intersection locations are considered **moderately suitable** for roundabout locations. They include Highway 26 / County Road 27 and County Road 27 / the future Craig Road extension. A brief discussion of what resulted in the moderate score is provided below.

4. Highway 26 and County Road 27

Based on the evaluation criteria, this intersection has a number of design benefits and would not have a significant impact on pedestrians and cyclists. Also, traffic volume orientation suggests that traffic flows would best suit a roundabout.

From a traffic operations perspective, this intersection may experience some peak hour capacity constraints under future total traffic conditions. In comparing treatment options for this intersection (signalized or roundabout), the analyses indicate that this intersection is anticipated to operate with an overall intersection V/C ratio of 0.87 under a signalized condition and a V/C ratio of 0.86 under a roundabout condition. The overall intersection V/C ratio is marginally better with a roundabout treatment, but specific movements will operate differently with unique capacity constraints when comparing signalized and roundabout treatment at this location.



5. County Road 27 and future Craig Road

Based on the evaluation criteria, this intersection has a number of design benefits and would not have a significant impact on pedestrians and cyclists. Design parameters would be better evaluated after a chosen roadway alignment for the proposed Craig Road extension.

From a traffic operations perspective, this intersection is anticipated to perform acceptably under future total traffic conditions. However, traffic volume orientation suggests that traffic flows would moderately suit a roundabout, and that a signalized intersection would provide greater residual traffic capacity than a roundabout treatment. Under future total traffic conditions, the traffic capacity analysis indicates an overall intersection V/C ratio of 0.53 with signalized control, compared with the roundabout analysis which indicates an overall intersection V/C ratio of 0.68 with a roundabout treatment.

OVERALL SUMMARY & CONCLUSION

Based on the analysis above, three (3) locations are suitable for considering the implementation of roundabouts, including the intersections of **Wilson Road and Carson Road; Russell Road and future Craig Road; and Russell Road and Doran Road**. Another two (2) locations may warrant consideration for the implementation of roundabouts based on specific components of the evaluation criteria, and include the intersections of **County Road 27 and Highway 26 Split**, and **County Road 27 and the future Craig Road**.



APPENDICES



APPENDIX A: Pre-Screening Analysis

Preliminary Sizing Feasibility Analysis

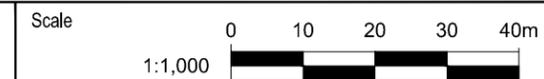


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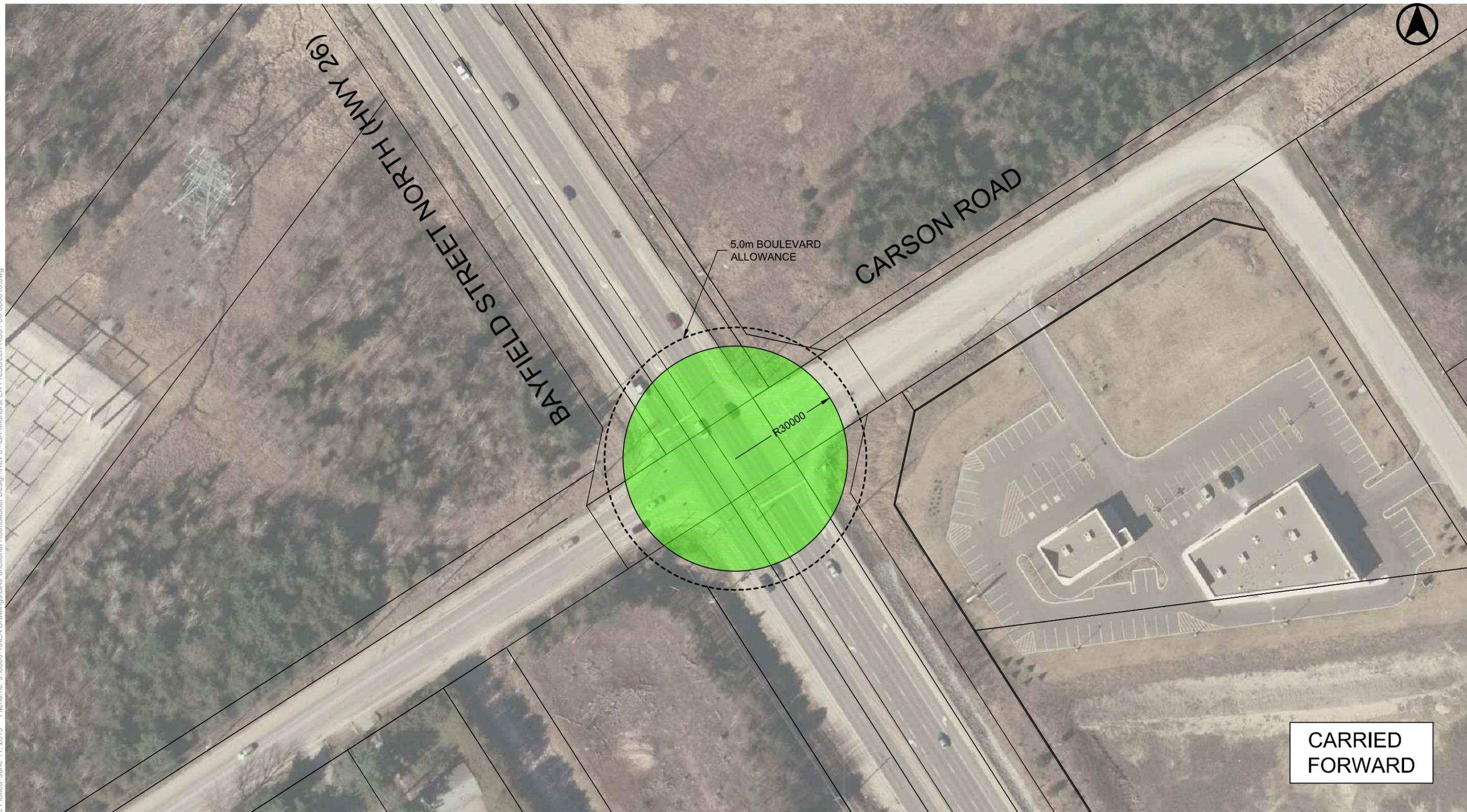
MIDHURST PHASE 3/4 EA - ROUNDABOUT REVIEW
PRE-SCREENING -PRELIMINARY FIT ANALYSIS - POTENTIAL DOUBLE LANE ROUNDABOUT
WILSON DRIVE/CARSON ROAD

Project: Midhurst EA
Project No. 6860-10
Date: May 21, 2014
Revised: June 11, 2015



Drawing No. **A-RD-01**

Date Plotted: June 11, 2015 File name: J:\6860-10\EA Drawings\BA\Functional Roundabout Design\Rev 0 -IBA-Midhurst EA PreScreen-RD01-00-686010.dwg



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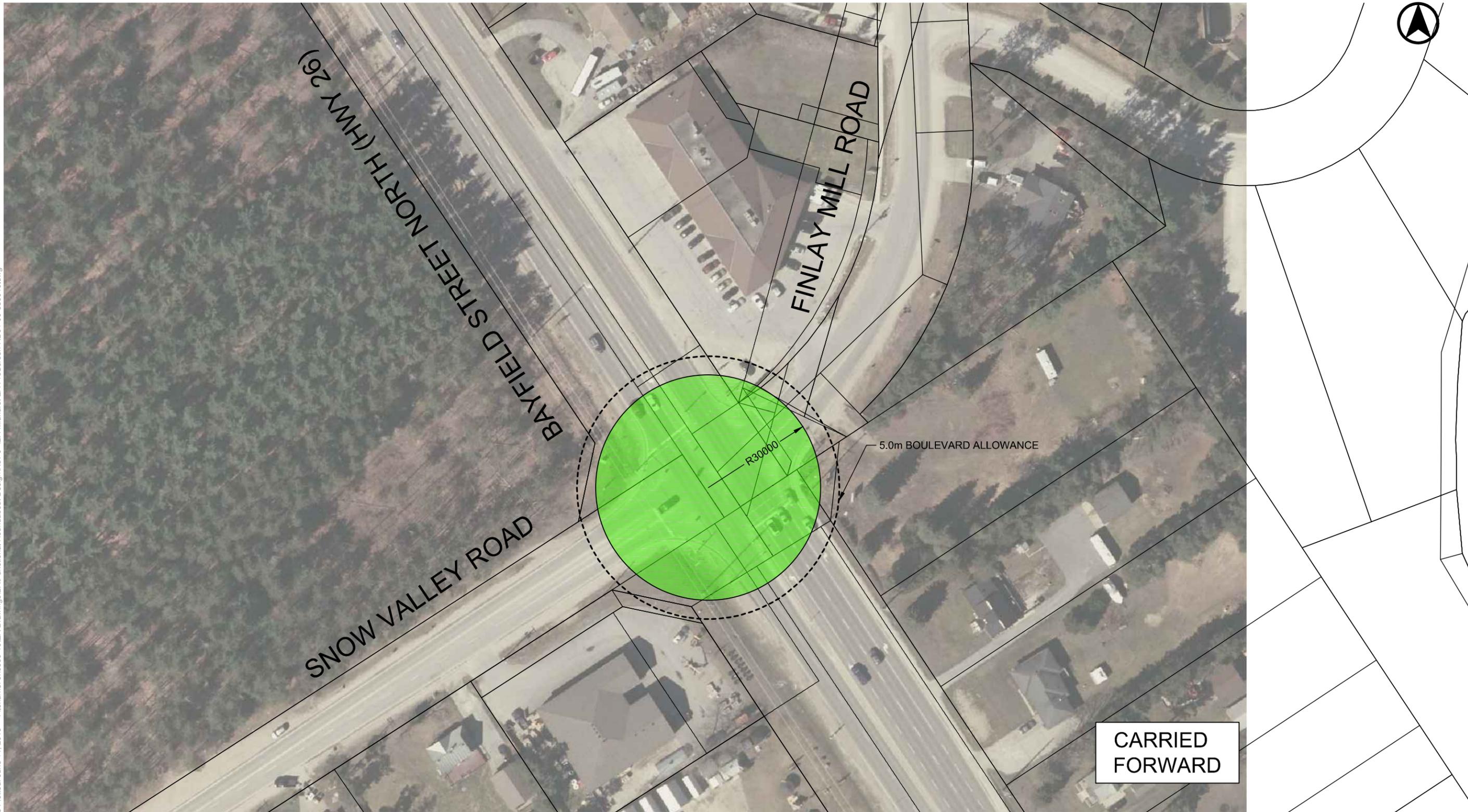
MIDHURST PHASE 3/4 EA - ROUNDABOUT REVIEW
 PRE-SCREENING -PRELIMINARY FIT ANALYSIS - POTENTIAL DOUBLE LANE ROUNDABOUT
 HIGHWAY 26/BAYFIELD STREET AND CARSON ROAD

Project: Midhurst EA
 Project No. 6860-10
 Date: May 21, 2014
 Revised: June 11, 2015



Drawing No. **A-RD-02**

Date Plotted: June 11, 2015 File name: J:\6860-10\EA Drawings\BAF\functional Roundabout Design\Rev 0 -1BA-Midhurst EA PreScreen-RD01-00-686010.dwg



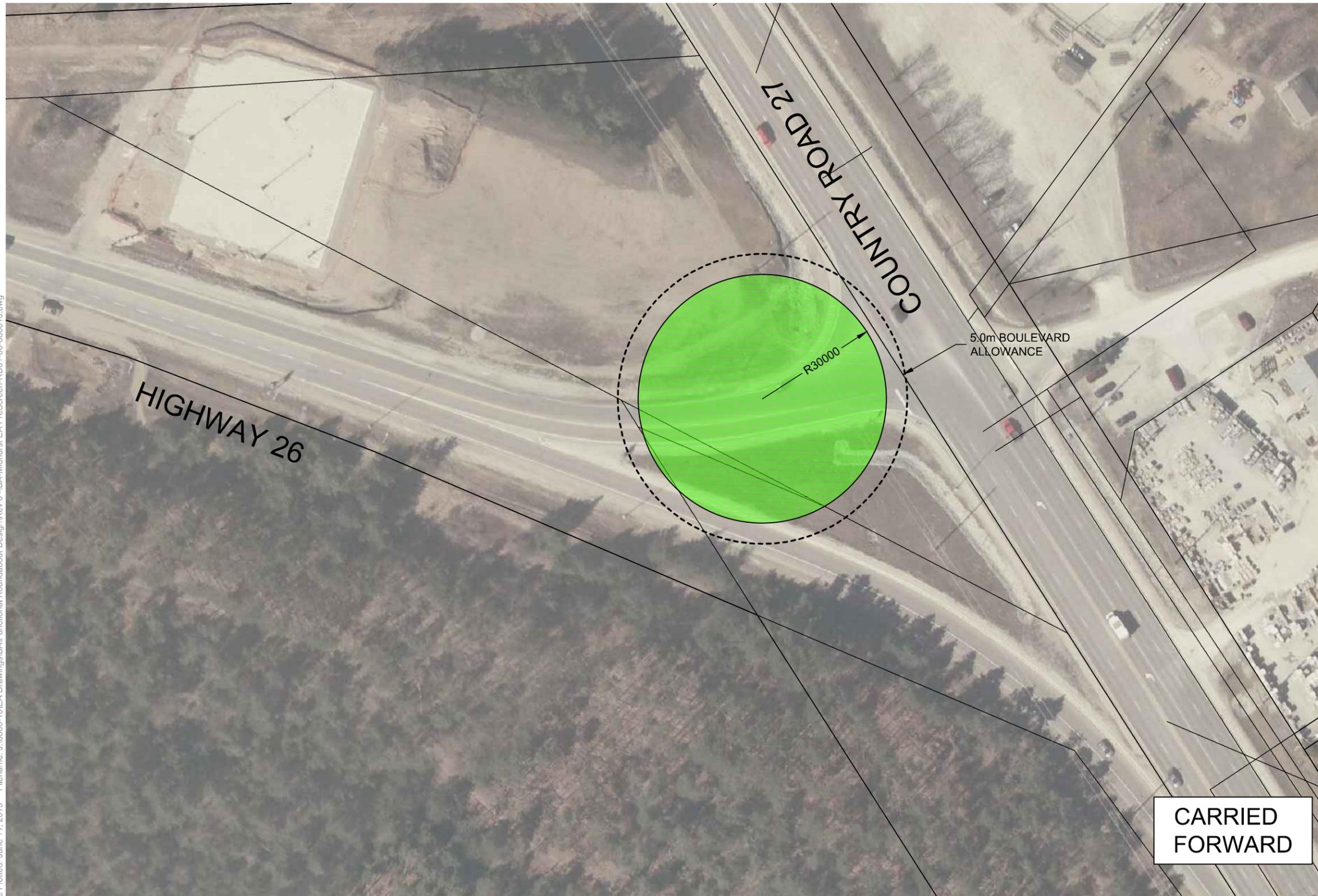
MIDHURST PHASE 3/4 EA - ROUNDABOUT REVIEW
 PRE-SCREENING -PRELIMINARY FIT ANALYSIS - POTENTIAL DOUBLE LANE ROUNDABOUT
 HIGHWAY 26/BAYFIELD STREET AND SNOW VALLEY/FINLAY MILL ROAD

Project: Midhurst EA
 Project No. 6860-10
 Date: May 21, 2014
 Revised: June 11, 2015



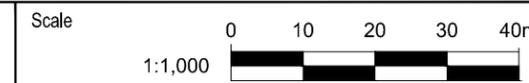
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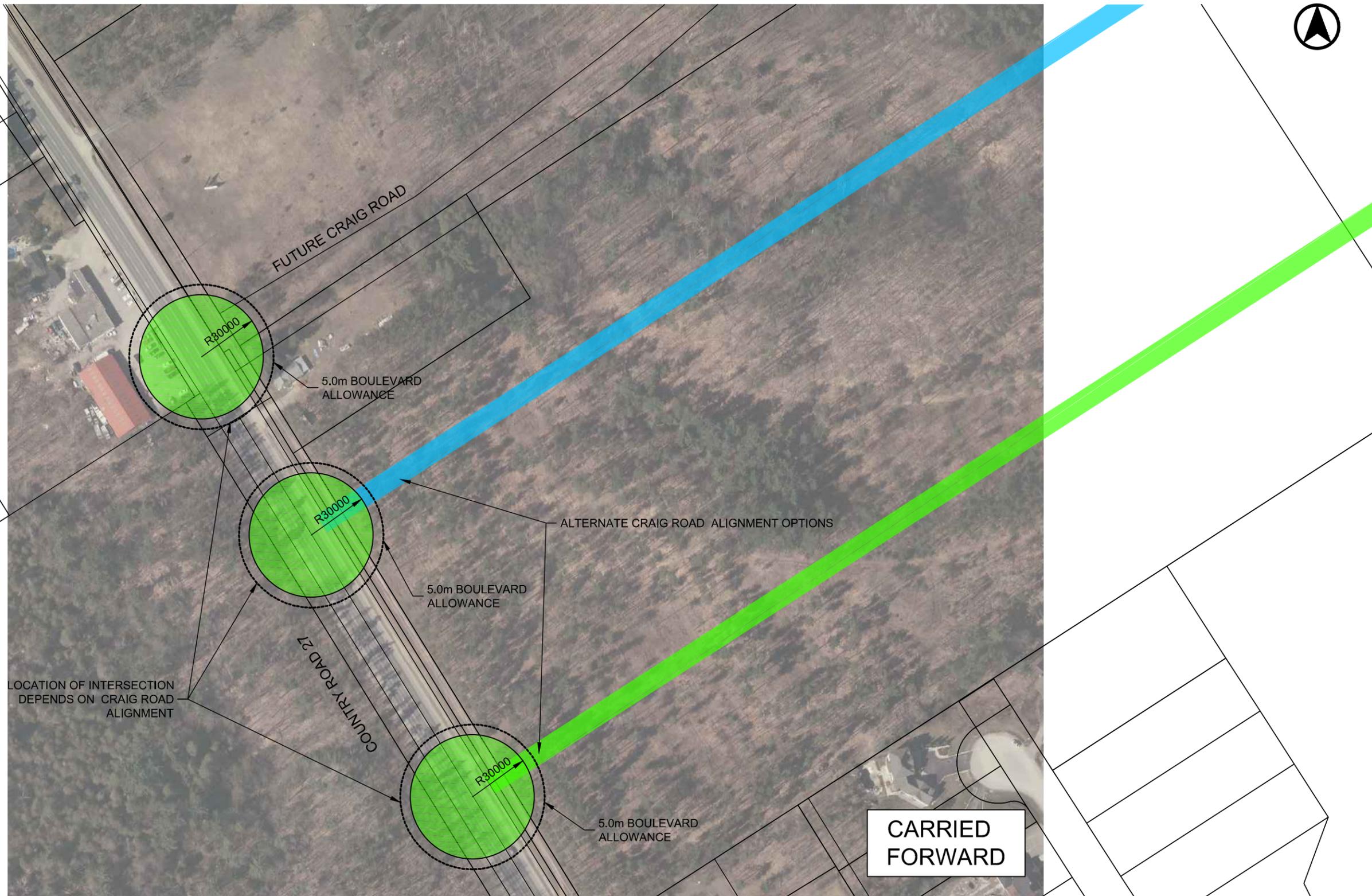
MIDHURST PHASE 3/4 EA - ROUNDABOUT REVIEW
PRE-SCREENING -PRELIMINARY FIT ANALYSIS - POTENTIAL DOUBLE LANE ROUNDABOUT
HIGHWAY 26/COUNTY ROAD 27 SPLIT

Project: Midhurst EA
Project No. 6860-10
Date: May 21, 2014
Revised: June 11, 2015



Drawing No. **A-RD-04**

Date Plotted: June 11, 2015 Filename: J:\6860-10\EA Drawings\BA\Functional Roundabout Design\Rev 0 -IBA-Midhurst EA PreScreen-RD01-00-686010.dwg



MIDHURST PHASE 3/4 EA - ROUNDABOUT REVIEW
 PRE-SCREENING -PRELIMINARY FIT ANALYSIS - POTENTIAL DOUBLE LANE ROUNDABOUT
 COUNTY ROAD 27/FUTURE CRAIG ROAD EXTENSION

Project: Midhurst EA
 Project No. 6860-10
 Date: May 21, 2014
 Revised: June 11, 2015



Drawing No. **A-RD-05**

Date Plotted: June 11, 2015 File name: J:\6860-10\EA Drawings\BA\Functional Roundabout Design\Rev 0 -IBA-Midhurst EA PreScreen-RD01-00-686010.dwg

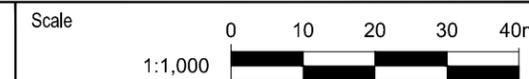


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MIDHURST PHASE 3/4 EA - ROUNDABOUT REVIEW
 PRE-SCREENING -PRELIMINARY FIT ANALYSIS - POTENTIAL SINGLE LANE ROUNDABOUT
 FINLAY MILL ROAD/WATTIE ROAD

Project: Midhurst EA
 Project No. 6860-10
 Date: May 21, 2014
 Revised: June 11, 2015



Drawing No. **A-RD-06**

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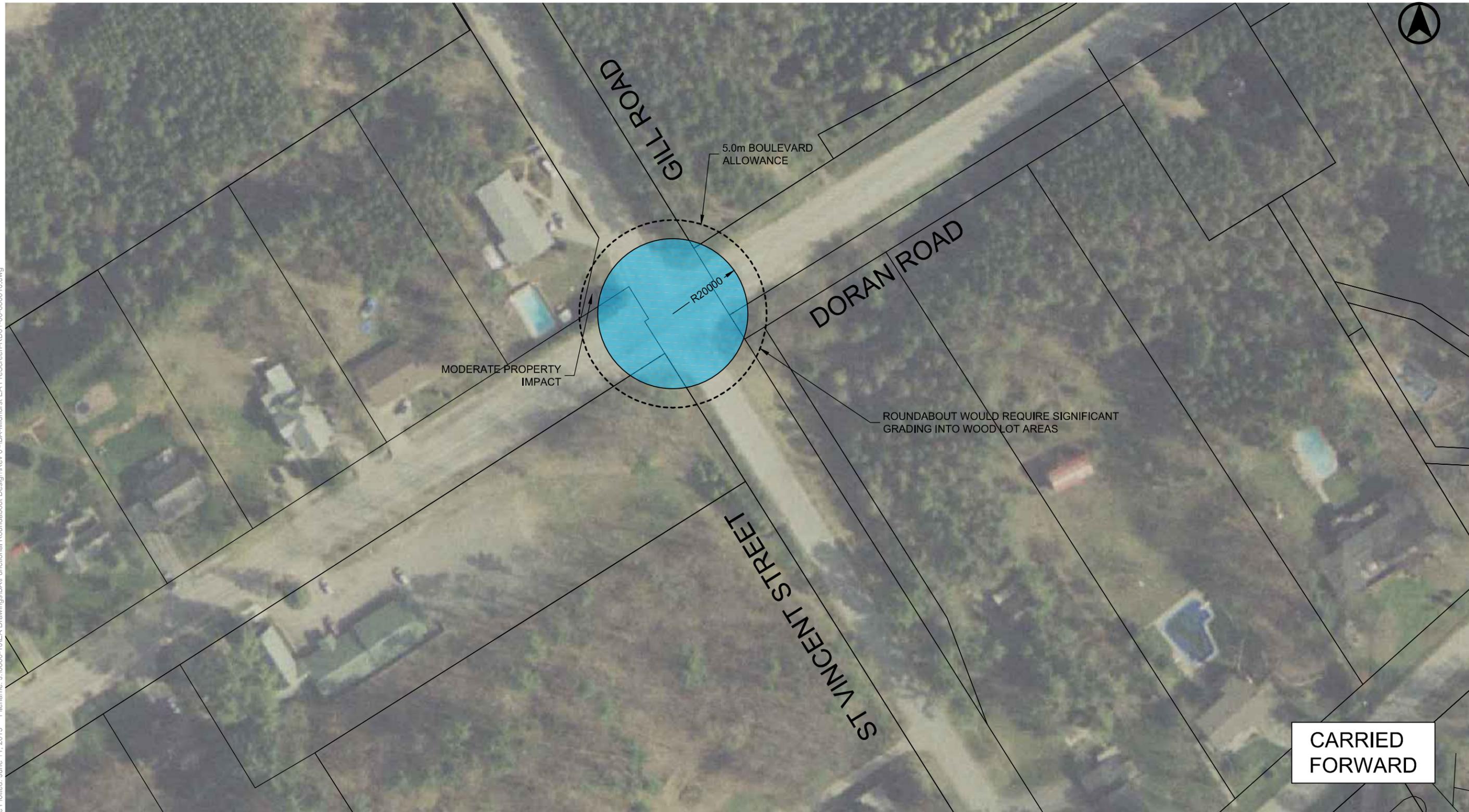
MIDHURST PHASE 3/4 EA - ROUNDABOUT REVIEW
 PRE-SCREENING -PRELIMINARY FIT ANALYSIS - POTENTIAL SINGLE LANE ROUNDABOUT
 ST. VINCENT STREET/POOLES ROAD

Project: Midhurst EA
 Project No. 6860-10
 Date: May 21, 2014
 Revised: June 11, 2015



Drawing No. **A-RD-07**

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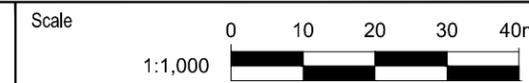


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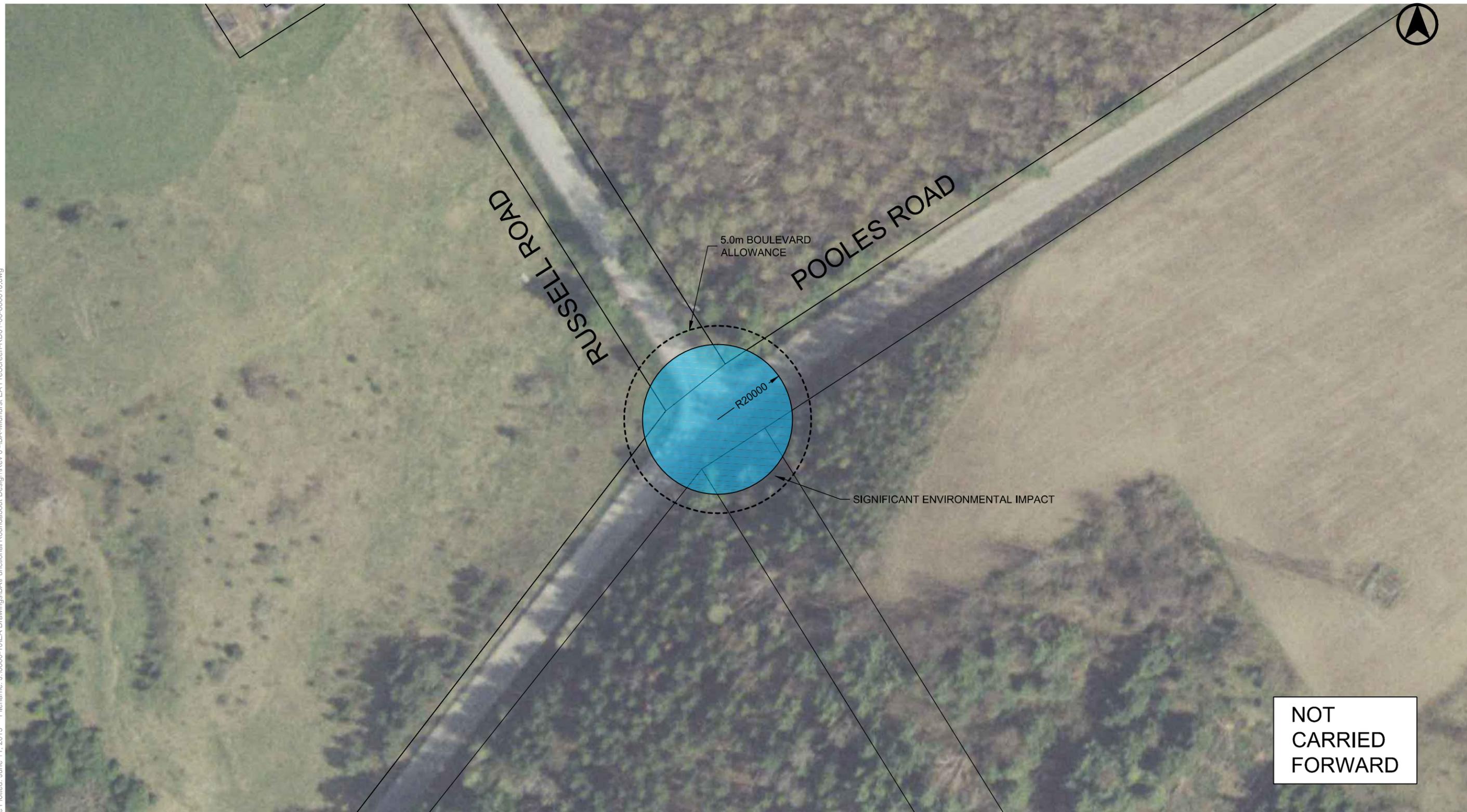
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 PRE-SCREENING -PRELIMINARY FIT ANALYSIS - POTENTIAL SINGLE LANE ROUNDABOUT
 DORAN ROAD AND ST. VINCENT STREET/GILL ROAD

Project: Midhurst EA
 Project No. 6860-10
 Date: May 21, 2014
 Revised: June 11, 2015



Drawing No. **A-RD-08**

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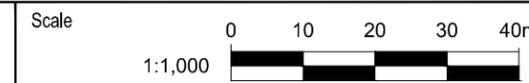


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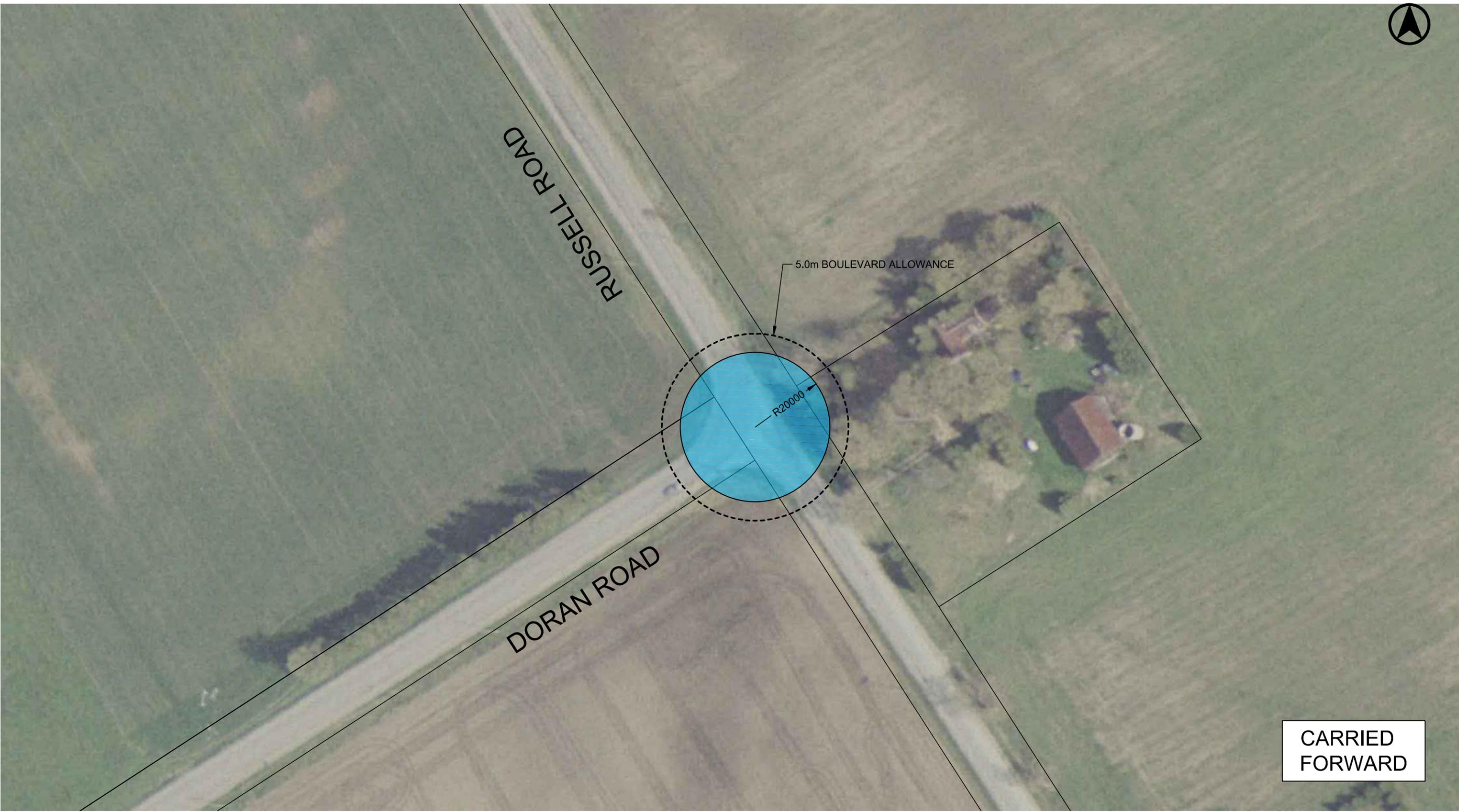
MIDHURST PHASE 3/4 EA - ROUNDABOUT REVIEW
 PRE-SCREENING -PRELIMINARY FIT ANALYSIS - POTENTIAL SINGLE LANE ROUNDABOUT
 RUSSELL ROAD/POOLES ROAD

Project: Midhurst EA
 Project No. 6860-10
 Date: May 21, 2014
 Revised: June 11, 2015



Drawing No. **A-RD-09A**

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MIDHURST PHASE 3/4 EA - ROUNDABOUT REVIEW
 PRE-SCREENING -PRELIMINARY FIT ANALYSIS - POTENTIAL SINGLE LANE ROUNDABOUT
 RUSSELL ROAD/DORAN ROAD

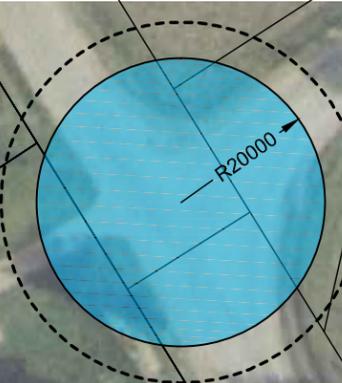
Project: Midhurst EA
 Project No. 6860-10
 Date: May 21, 2014
 Revised: June 11, 2015

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 Drawing No. **A-RD-10**



FORBES ROAD

RUSSELL ROAD



R20000

5.0m BOULEVARD ALLOWANCE

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MIDHURST PHASE 3/4 EA - ROUNDABOUT REVIEW
PRE-SCREENING -PRELIMINARY FIT ANALYSIS - POTENTIAL SINGLE LANE ROUNDABOUT
RUSSELL ROAD AND FORBES ROAD/FUTURE CRAIG ROAD EXTENSION

Project: Midhurst EA
Project No. 6860-10
Date: May 21, 2014
Revised: June 11, 2015

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Drawing No. A-RD-11

APPENDIX B: Traffic Operations Analysis

Traffic operations analyses undertaken for the six short List intersections were undertaken using the *Rodel Traffic Software*, jointly developed by Rodel Software Ltd. and Staffordshire County Council. Key performance indicators utilized for the roundabout analyses are volume to capacity (v/c) ratios by approach leg.

Input parameters for the analyses are based on data acquired from traffic surveys or in accordance with those as outlined in the *Region of Waterloo Default Rodel Parameters (2009)*.

Roundabout operations were analyzed under future total traffic conditions (upon full build-out of the Midhurst Secondary Plan area) for both the morning and afternoon peak hours.

A summary of results of the roundabout traffic operations capacity analyses is provided in Table 4. Detailed capacity analysis calculation worksheets for analysis intersections are prepared on the following pages.

TABLE 4 ROUNDABOUT CAPACITY ANALYSIS SUMMARY

Intersection	Approach Leg	Morning Peak Hour Traffic (AM) V/C Ratio	Afternoon Peak Hour Traffic (PM) V/C Ratio
Wilson Road and Carson Road	Northbound	0.27	0.58
	Westbound	0.58	0.75
	Southbound	0.32	0.37
	Eastbound	0.12	0.12
Bayfield Road (Highway 26) and Carson Road	Northbound	0.87	1.01
	Westbound	0.44	0.56
	Southbound	1.00	1.01
	Eastbound	0.75	0.93
Bayfield Road (Highway 26) and Finlay Mill / Snow Valley Road	Northbound	0.99	2.30
	Westbound	0.87	1.02
	Southbound	0.95	1.38
	Eastbound	0.35	0.64
Highway 26 and Highway 27 Split	Northbound	0.75	0.96
	Southbound	0.84	0.81
	Eastbound	0.48	0.80
Highway 27 and future Craig Road	Northbound	0.31	0.79
	Westbound	0.62	0.70
	Southbound	0.47	0.56
Russell Road and future Craig Road	Northbound	0.45	0.38
	Westbound	0.30	0.71
	Southbound	0.02	0.05
	Eastbound	0.35	0.48
Russell Road and Doran Road	Northbound	0.52	0.72
	Southbound	0.25	0.49
	Eastbound	0.51	0.73

Bayfield Road (Highway 26/27) and Finlay Mill Road / Snow Valley Road



Rodel-Win

2030 AM Peak
50% Confidence Level
Daylight conditions

Project: Midhurt Roundabout Analysisq
Scheme: Bayfield and Finlay Mill / Snow Valley - AM
Rodel-Win1 - Full Geometry

Operational Results

2030 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)				Capacity (veh/hr)					
			Arrival Flow		Opposing Flow		Capacity		Average VCR			
			Entry	Bypass	Entry	Bypass	Entry	Bypass	Entry	Bypass		
1	Bayfield	None		1500		670		1670		1835		0.8631
2	Snow Valley	None		305		1690		480		1125		0.2888
3	Bayfield	None		1580		480		1515		1967		0.8385
4	Finlay Mill	None		825		1515		545		1247		0.7161

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	Bayfield	None		15.81	15.81		25.84		C	C
2	Snow Valley	None		7.12	7.12		2.12		A	A
3	Bayfield	None		11.76	11.76		19.81		B	B
4	Finlay Mill	None		17.38	17.38		15.40		C	C

Rodel-Win

2030 AM Peak
50% Confidence Level
Daylight conditions

Project: Midhurt Roundabout Analysisq
Scheme: Bayfield and Finlay Mill / Snow Valley - AM
Rodel-Win1 - Full Geometry

2030 AM Peak - 15 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)			Capacity (veh/hr)						
			Arrival Flow		Opposing Flow		Capacity		Average VCR			
			Entry	Bypass	Entry	Bypass	Exit Flow	Entry	Bypass	Entry	Bypass	
1	Bayfield	None		1691		748		1868		1781		0.9888
2	Snow Valley	None		344		1882		535		991		0.3531
3	Bayfield	None		1782		537		1688		1928		0.9528
4	Finlay Mill	None		930		1696		609		1120		0.8678

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	Bayfield	None		21.44	21.44		25.84		C	C
2	Snow Valley	None		8.10	8.10		2.12		A	A
3	Bayfield	None		15.75	15.75		19.81		C	C
4	Finlay Mill	None		22.79	22.79		15.40		C	C

Rodel-Win

2030 PM Peak
50% Confidence Level
Daylight conditions

Project: Midhurst Roundabout Analysis
Scheme: Bayfield and Finlay Mill / Snow Valley
Rodel-Win1 - Full Geometry

Operational Results

2030 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)				Capacity (veh/hr)					
			Arrival Flow		Opposing Flow		Capacity		Average VCR			
			Entry	Bypass	Entry	Bypass	Entry	Bypass	Entry	Bypass		
1	Bayfield	None		2310		672		1721		1833		2.1934
2	Snow Valley	None		995		1611		887		1180		0.9167
3	Bayfield	None		1805		735		1869		1790		1.2669
4	Finlay Mill	None		545		1849		615		1014		0.5663

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	Bayfield	None		371.33	371.33		901.75		F	F
2	Snow Valley	None		32.41	32.41		30.56		D	D
3	Bayfield	None		114.68	114.68		221.48		F	F
4	Finlay Mill	None		12.72	12.72		6.30		B	B

Rodel-Win

2030 PM Peak
 50% Confidence Level
 Daylight conditions

Project: Midhurst Roundabout Analysis
 Scheme: Bayfield and Finlay Mill / Snow Valley
 Rodel-Win1 - Full Geometry

2030 PM Peak - 15 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)				Capacity (veh/hr)					
			Arrival Flow		Opposing Flow		Capacity		Average VCR			
			Entry	Bypass	Entry	Bypass	Exit Flow	Entry	Bypass	Entry	Bypass	
1	Bayfield	None		2605		726		1780		1796		2.2979
2	Snow Valley	None		1122		1616		906		1176		1.0282
3	Bayfield	None		2035		795		1919		1748		1.3820
4	Finlay Mill	None		615		1892		651		983		0.6442

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	Bayfield	None		329.75	329.75		653.70		F	F
2	Snow Valley	None		39.64	39.64		30.56		E	E
3	Bayfield	None		112.44	112.44		186.81		F	F
4	Finlay Mill	None		14.35	14.35		6.30		B	B

Bayfield Road (Highway 26/27) and Carson Road



26:5:14		BAYFIELD/CARSON						74
AM		LEG NUMBER 1				NB		
TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice	
0 15	282.32	485.56	44.02	0.581	1.37	3.49	386.39	
15 30	337.12	480.02	52.66	0.702	2.31	5.71	461.96	
30 45	412.88	472.75	64.02	0.873	6.18	14.04	550.69	
45 60	412.88	472.40	64.54	0.874	6.52	14.74	559.93	
60 75	337.12	479.41	53.56	0.703	2.42	5.98	489.71	
75 90	282.32	485.27	44.45	0.582	1.41	3.57	391.29	

26:5:14		BAYFIELD/CARSON						74
AM		LEG NUMBER 2				WB		
TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice	
0 15	13.17	111.48	320.35	0.118	0.13	0.35	4.68	
15 30	15.73	82.89	383.29	0.190	0.23	0.61	5.60	
30 45	19.27	45.21	466.47	0.426	0.70	1.81	6.74	
45 60	19.27	43.39	470.26	0.444	0.76	1.97	6.83	
60 75	15.73	80.27	388.79	0.196	0.25	0.65	5.81	
75 90	13.17	110.21	323.01	0.120	0.14	0.36	4.73	

26:5:14		BAYFIELD/CARSON					74	
AM		LEG NUMBER 3					SB	
TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice	
0 15	337.84	504.93	34.60	0.669	1.99	4.96	298.72	
15 30	403.42	500.49	41.42	0.806	3.96	9.41	357.45	
30 45	494.08	494.77	50.23	0.999	21.82	43.56	434.86	
45 60	494.08	494.36	50.84	0.999	30.83	60.57	438.61	
60 75	403.42	499.88	42.32	0.807	4.46	10.48	362.90	
75 90	337.84	504.67	34.99	0.669	2.06	5.13	301.35	

26:5:14		BAYFIELD/CARSON					74	
AM		LEG NUMBER 4					EB	
TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice	
0 15	111.05	308.72	320.00	0.360	0.56	1.45	50.54	
15 30	132.60	268.66	382.51	0.494	0.96	2.47	60.44	
30 45	162.40	222.88	454.65	0.729	2.54	6.25	72.57	
45 60	162.40	217.44	462.73	0.747	2.81	6.87	73.58	
60 75	132.60	251.60	407.85	0.527	1.13	2.90	63.12	
75 90	111.05	306.01	324.03	0.363	0.57	1.49	51.10	

RODEL.bat

26:5:14 BAYFIELD/CARSON 75

PM LEG NUMBER 1 NB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	479.00	727.55	93.68	0.658	1.90	4.77	423.54
15 30	571.98	711.26	111.93	0.804	3.97	9.43	505.98
30 45	700.52	692.82	132.78	1.011	30.50	59.94	598.70
45 60	700.52	690.92	134.81	1.014	47.13	91.99	607.93
60 75	571.98	703.90	119.77	0.813	4.57	10.72	544.74
75 90	479.00	726.51	94.80	0.659	1.96	4.89	427.96

F1storexit PgUp/PgDn 7/8scroll 9print Esc

RODEL.bat

26:5:14 BAYFIELD/CARSON 75

PM LEG NUMBER 2 WB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	11.29	185.79	511.82	0.061	0.06	0.17	59.04
15 30	13.48	116.28	611.40	0.116	0.13	0.34	70.53
30 45	16.52	38.23	724.45	0.432	0.71	1.83	83.43
45 60	16.52	30.72	734.70	0.538	1.04	2.66	84.70
60 75	13.48	83.20	656.54	0.162	0.20	0.52	75.99
75 90	11.29	182.23	516.68	0.062	0.07	0.18	59.63

F1storexit PgUp/PgDn 7/8scroll 9print Esc

RODEL.bat

26:5:14 BAYFIELD/CARSON 75

PM LEG NUMBER 3 SB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	476.18	714.68	72.17	0.666	1.97	4.92	450.79
15 30	568.60	702.48	86.22	0.809	4.09	9.70	538.51
30 45	696.40	688.77	102.19	1.011	30.41	59.77	637.04
45 60	696.40	687.46	103.62	1.013	46.50	90.78	646.54
60 75	568.60	696.72	92.54	0.816	4.69	10.98	580.17
75 90	476.18	714.03	72.89	0.667	2.03	5.05	455.34

F1storexit PgUp/PgDn 7/8scroll 9print Esc

RODEL.bat

26:5:14 BAYFIELD/CARSON 75

PM LEG NUMBER 4 EB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	84.70	271.26	433.05	0.312	0.45	1.18	113.41
15 30	101.14	209.72	517.31	0.482	0.92	2.36	135.47
30 45	123.86	140.59	612.99	0.881	5.38	12.42	160.23
45 60	123.86	133.77	621.88	0.926	7.82	17.31	162.63
60 75	101.14	180.48	555.42	0.560	1.31	3.34	146.02
75 90	84.70	268.13	437.13	0.316	0.47	1.21	114.50

F1storexit PgUp/PgDn 7/8scroll 9print Esc

Wilson Road and Carson Road



RODEL.bat

26:5:14 WILSON/CARSON 71

AM LEG NUMBER 1 NB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	91.28	505.57	12.18	0.181	0.22	0.58	166.72
15 30	109.00	503.94	14.59	0.216	0.28	0.72	199.73
30 45	133.50	501.75	17.86	0.266	0.36	0.95	244.38
45 60	133.50	501.73	17.89	0.266	0.36	0.95	244.96
60 75	109.00	503.92	14.64	0.216	0.28	0.73	200.61
75 90	91.28	505.54	12.25	0.181	0.22	0.58	167.82

F1storexit PgUp/PgDn 7/8scroll 9print Esc

RODEL.bat

26:5:14 WILSON/CARSON 71

AM LEG NUMBER 2 WB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	82.81	225.14	66.66	0.368	0.58	1.50	36.60
15 30	98.89	218.90	79.74	0.452	0.81	2.10	43.80
30 45	121.11	210.38	97.65	0.576	1.32	3.37	53.63
45 60	121.11	210.35	97.72	0.576	1.34	3.41	53.67
60 75	98.89	218.85	79.85	0.452	0.84	2.16	43.87
75 90	82.81	225.04	66.86	0.368	0.59	1.53	36.73

F1storexit PgUp/PgDn 7/8scroll 9print Esc

RODEL.bat

26:5:14 WILSON/CARSON 71

AM LEG NUMBER 3 SB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	95.05	460.98	78.54	0.206	0.26	0.68	70.37
15 30	113.50	450.45	94.18	0.252	0.34	0.88	84.22
30 45	139.00	436.35	115.16	0.319	0.47	1.21	103.11
45 60	139.00	436.05	115.59	0.319	0.47	1.22	103.22
60 75	113.50	449.99	94.84	0.252	0.34	0.89	84.38
75 90	95.05	460.46	79.27	0.206	0.26	0.69	70.64

F1storexit PgUp/PgDn 7/8scroll 9print Esc

RODEL.bat

26:5:14 WILSON/CARSON 71

AM LEG NUMBER 4 EB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	11.29	177.03	167.71	0.064	0.07	0.18	5.62
15 30	13.48	161.23	200.87	0.084	0.09	0.24	6.73
30 45	16.52	139.84	245.79	0.118	0.13	0.35	8.24
45 60	16.52	139.57	246.34	0.118	0.13	0.35	8.26
60 75	13.48	160.81	201.70	0.084	0.09	0.24	6.76
75 90	11.29	176.52	168.74	0.064	0.07	0.18	5.65

F1storexit PgUp/PgDn 7/8scroll 9print Esc

RODEL.bat

26:5:14 WILSON/CARSON 72

PM LEG NUMBER 1 NB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	179.74	456.30	12.17	0.394	0.65	1.68	143.16
15 30	214.63	454.67	14.59	0.472	0.89	2.29	171.52
30 45	262.87	452.48	17.85	0.581	1.37	3.48	209.34
45 60	262.87	452.45	17.89	0.581	1.38	3.50	210.47
60 75	214.63	454.63	14.65	0.472	0.90	2.32	173.19
75 90	179.74	456.23	12.26	0.394	0.65	1.70	144.43

F1storexit PgUp/PgDn 7/8scroll 9print Esc

RODEL.bat

26:5:14 WILSON/CARSON 72

PM LEG NUMBER 2 WB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	65.87	153.57	113.46	0.429	0.74	1.91	77.82
15 30	78.66	142.92	135.82	0.550	1.19	3.03	93.16
30 45	96.34	128.44	166.23	0.750	2.70	6.62	114.02
45 60	96.34	128.29	166.52	0.751	2.84	6.94	114.23
60 75	78.66	142.69	136.27	0.551	1.27	3.23	93.48
75 90	65.87	153.29	114.02	0.430	0.77	1.99	78.22

F1storexit PgUp/PgDn 7/8scroll 9print Esc

RODEL.bat

26:5:14 WILSON/CARSON 72

PM LEG NUMBER 3 SB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	103.52	426.28	56.83	0.243	0.32	0.84	121.78
15 30	123.61	418.63	68.20	0.295	0.42	1.09	145.84
30 45	151.39	408.84	82.80	0.370	0.58	1.52	178.29
45 60	151.39	408.11	83.85	0.371	0.59	1.53	178.88
60 75	123.61	417.55	69.74	0.296	0.42	1.10	146.72
75 90	103.52	425.61	57.79	0.243	0.32	0.85	122.60

F1storexit PgUp/PgDn 7/8scroll 9print Esc

RODEL.bat

26:5:14 WILSON/CARSON 72

PM LEG NUMBER 4 EB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	8.47	137.63	146.96	0.062	0.07	0.17	13.09
15 30	10.11	123.77	176.03	0.082	0.09	0.23	15.68
30 45	12.39	105.28	214.91	0.118	0.13	0.35	19.12
45 60	12.39	104.74	215.98	0.118	0.13	0.35	19.26
60 75	10.11	122.97	177.63	0.082	0.09	0.24	15.89
75 90	8.47	137.02	148.17	0.062	0.07	0.18	13.23

F1storexit PgUp/PgDn 7/8scroll 9print Esc

Russell Road and future Craig Road



Highway 26 and Highway 27 Split



RODEL.bat

26:5:14 HWY 26/HWY 27 SPLIT 5

AM LEG NUMBER 1 NB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	264.44	513.16	0.94	0.515	1.05	2.70	296.08
15 30	315.77	513.04	1.12	0.615	1.58	3.99	354.31
30 45	386.73	512.88	1.37	0.754	2.97	7.23	431.93
45 60	386.73	512.88	1.38	0.754	3.02	7.33	434.69
60 75	315.77	513.04	1.13	0.615	1.62	4.09	358.20
75 90	264.44	513.16	0.94	0.515	1.07	2.75	298.21

F1storexit PgUp/PgDn 7/8scroll 9print Esc

RODEL.bat

26:5:14 HWY 26/HWY 27 SPLIT 5

AM LEG NUMBER 2 SB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	210.80	414.64	154.69	0.508	1.02	2.63	109.67
15 30	251.71	395.12	185.12	0.637	1.72	4.33	131.26
30 45	308.29	368.74	226.31	0.836	4.67	10.93	160.45
45 60	308.29	368.23	227.06	0.837	4.89	11.40	161.01
60 75	251.71	394.40	186.20	0.638	1.80	4.51	132.06
75 90	210.80	414.03	155.58	0.509	1.05	2.69	110.33

F1storexit PgUp/PgDn 7/8scroll 9print Esc

RODEL.bat

26:5:14 HWY 26/HWY 27 SPLIT 5

AM LEG NUMBER 3 EB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	111.05	394.32	186.41	0.282	0.39	1.02	178.07
15 30	132.60	370.83	223.03	0.358	0.55	1.44	213.12
30 45	162.40	339.90	271.38	0.478	0.91	2.33	260.35
45 60	162.40	338.35	273.69	0.480	0.92	2.36	261.44
60 75	132.60	368.67	226.24	0.360	0.57	1.47	214.67
75 90	111.05	393.31	187.91	0.282	0.40	1.03	179.21

F1storexit PgUp/PgDn 7/8scroll 9print Esc

RODEL.bat

26:5:14 HWY 26/HWY 27 SPLIT 6

PM LEG NUMBER 1 NB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	371.72	565.54	3.75	0.657	1.89	4.73	336.08
15 30	443.87	565.02	4.48	0.786	3.53	8.48	402.27
30 45	543.63	564.32	5.46	0.963	15.02	30.90	489.79
45 60	543.63	564.29	5.50	0.963	18.09	36.59	493.71
60 75	443.87	564.97	4.55	0.786	3.81	9.09	407.91
75 90	371.72	565.52	3.78	0.657	1.95	4.86	339.11

F1storexit PgUp/PgDn 7/8scroll 9print Esc

RODEL.bat

26:5:14 HWY 26/HWY 27 SPLIT 6

PM LEG NUMBER 2 SB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	190.10	381.66	129.24	0.498	0.98	2.52	244.37
15 30	226.99	365.45	154.53	0.621	1.61	4.06	292.21
30 45	278.01	345.32	186.10	0.805	3.86	9.19	351.68
45 60	278.01	343.43	188.91	0.809	4.07	9.64	357.21
60 75	226.99	361.89	159.82	0.627	1.72	4.31	302.63
75 90	190.10	380.82	130.49	0.499	1.01	2.59	246.85

F1storexit PgUp/PgDn 7/8scroll 9print Esc

RODEL.bat

26:5:14 HWY 26/HWY 27 SPLIT 6

PM LEG NUMBER 3 EB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	161.86	349.87	178.86	0.463	0.85	2.20	139.51
15 30	193.28	327.29	214.07	0.591	1.42	3.59	166.83
30 45	236.72	297.36	260.84	0.796	3.63	8.70	200.93
45 60	236.72	296.12	262.68	0.799	3.81	9.09	203.98
60 75	193.28	325.49	216.75	0.594	1.49	3.77	172.55
75 90	161.86	348.84	180.38	0.464	0.87	2.25	140.91

F1storexit PgUp/PgDn 7/8scroll 9print Esc

Highway 27 and future Craig Road



RODEL.bat

26:5:14 HWY 27/FUTURE CRAIG 6

AM LEG NUMBER 1 NB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	109.16	510.61	4.69	0.214	0.27	0.71	207.02
15 30	130.35	509.98	5.61	0.256	0.34	0.90	247.95
30 45	159.65	509.14	6.87	0.314	0.45	1.19	303.27
45 60	159.65	509.14	6.88	0.314	0.46	1.19	304.13
60 75	130.35	509.98	5.63	0.256	0.34	0.90	249.22
75 90	109.16	510.60	4.71	0.214	0.27	0.72	208.39

F1storexit PgUp/PgDn 7/8scroll 9print Esc

RODEL.bat

26:5:14 HWY 27/FUTURE CRAIG 6

AM LEG NUMBER 2 WB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	79.05	209.49	99.52	0.377	0.60	1.56	14.08
15 30	94.39	200.19	119.05	0.472	0.88	2.26	16.84
30 45	115.61	187.45	145.79	0.617	1.56	3.93	20.63
45 60	115.61	187.41	145.88	0.617	1.58	3.99	20.64
60 75	94.39	200.11	119.21	0.472	0.91	2.34	16.87
75 90	79.05	209.34	99.82	0.378	0.61	1.60	14.13

F1storexit PgUp/PgDn 7/8scroll 9print Esc

RODEL.bat

26:5:14 HWY 27/FUTURE CRAIG 6

AM LEG NUMBER 3 SB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	141.16	466.04	71.01	0.303	0.43	1.13	106.98
15 30	168.56	456.51	85.16	0.369	0.58	1.51	128.01
30 45	206.44	443.85	104.01	0.465	0.86	2.22	156.73
45 60	206.44	443.45	104.57	0.466	0.87	2.24	156.89
60 75	168.56	455.93	85.98	0.370	0.59	1.53	128.27
75 90	141.16	465.50	71.77	0.303	0.44	1.14	107.38

F1storexit PgUp/PgDn 7/8scroll 9print Esc

RODEL.bat

26:5:14 HWY 27/FUTURE CRAIG 8

PM LEG NUMBER 1 NB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	241.85	455.02	14.07	0.532	1.12	2.87	190.10
15 30	288.80	453.16	16.84	0.637	1.73	4.35	227.65
30 45	353.70	450.62	20.61	0.785	3.49	8.39	277.96
45 60	353.70	450.60	20.64	0.785	3.57	8.55	279.29
60 75	288.80	453.12	16.89	0.637	1.79	4.48	229.59
75 90	241.85	454.97	14.14	0.532	1.15	2.93	191.54

F1storexit PgUp/PgDn 7/8scroll 9print Esc

RODEL.bat

26:5:14 HWY 27/FUTURE CRAIG 8

PM LEG NUMBER 2 WB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	47.99	156.07	209.87	0.308	0.44	1.15	44.98
15 30	57.31	134.55	251.21	0.426	0.73	1.88	53.84
30 45	70.19	105.64	306.82	0.664	1.84	4.60	65.80
45 60	70.19	104.88	308.22	0.669	1.93	4.83	66.05
60 75	57.31	133.47	253.19	0.429	0.77	1.99	54.21
75 90	47.99	155.27	211.33	0.309	0.45	1.18	45.27

F1storexit PgUp/PgDn 7/8scroll 9print Esc

RODEL.bat

26:5:14 HWY 27/FUTURE CRAIG 8

PM LEG NUMBER 3 SB

TIME SLICES	ARR FLOW v/slice	CAP v/slice	CIRC FLOW v/slice	UC RATIO	END QUEUES vehs	95% QUEUES vehs	EXIT FLOW veh/slice
0 15	160.92	435.01	43.85	0.370	0.58	1.52	213.55
15 30	192.16	429.15	52.56	0.448	0.80	2.08	255.66
30 45	235.34	421.67	63.71	0.558	1.25	3.18	312.17
45 60	235.34	421.05	64.60	0.559	1.26	3.21	313.72
60 75	192.16	428.25	53.84	0.449	0.82	2.12	257.85
75 90	160.92	434.54	44.51	0.370	0.59	1.54	215.15

F1storexit PgUp/PgDn 7/8scroll 9print Esc

Russell Road and Doran Road



Appendix C: Preliminary Function Designs

Preliminary Functional Design Plans for Roundabout Locations Identified as Moderately or Well Suited to Accommodate a Roundabout



Date Plotted: June 11, 2015 File name: J:\6860-10\EA Drawings\BA\Functional Roundabout Design\REV 1 - June 3-15\BA-Midhurst EA Detailed Design-FD-R2-6860-10.dwg



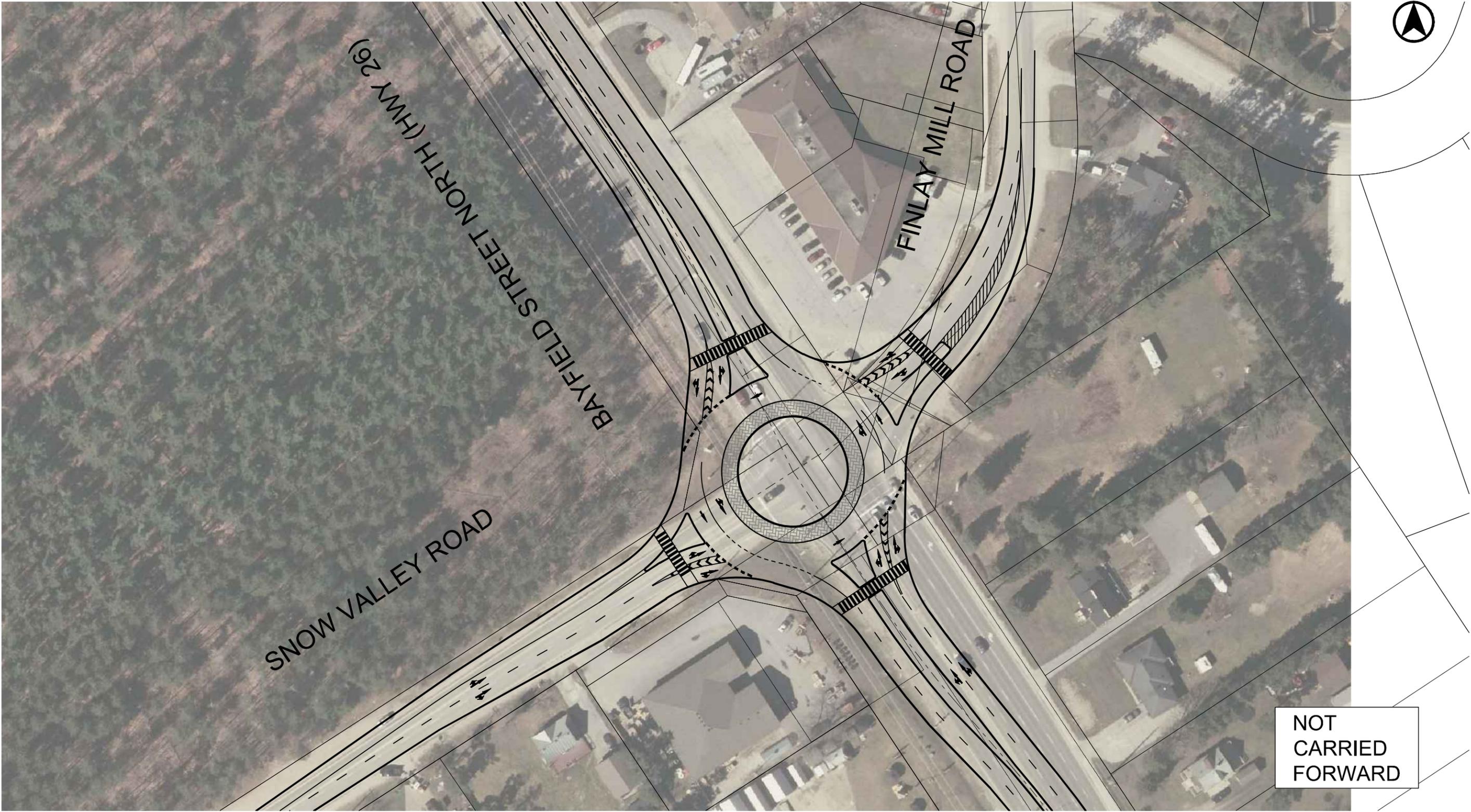
MIDHURST PHASE 3/4 EA - ROUNDABOUT REVIEW
PROPERTY / LAND USE IMPACT OF A POTENTIAL DOUBLE LANE ROUNDABOUT
AT THE INTERSECTION OF WILSON ROAD AND CARSON ROAD

Project: Midhurst EA
Project No. 6860-10
Date: May 21, 2014
Revised: June 11, 2015



Drawing No. **C-RD-01**

Date Plotted: June 11, 2015 File name: J:\6860-10\EA Drawings\BA\Functional Roundabout Design\REV 1 - June 3-15\BA-Midhurst EA Detailed Design-FD-R2-6860-10.dwg



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FORWARD

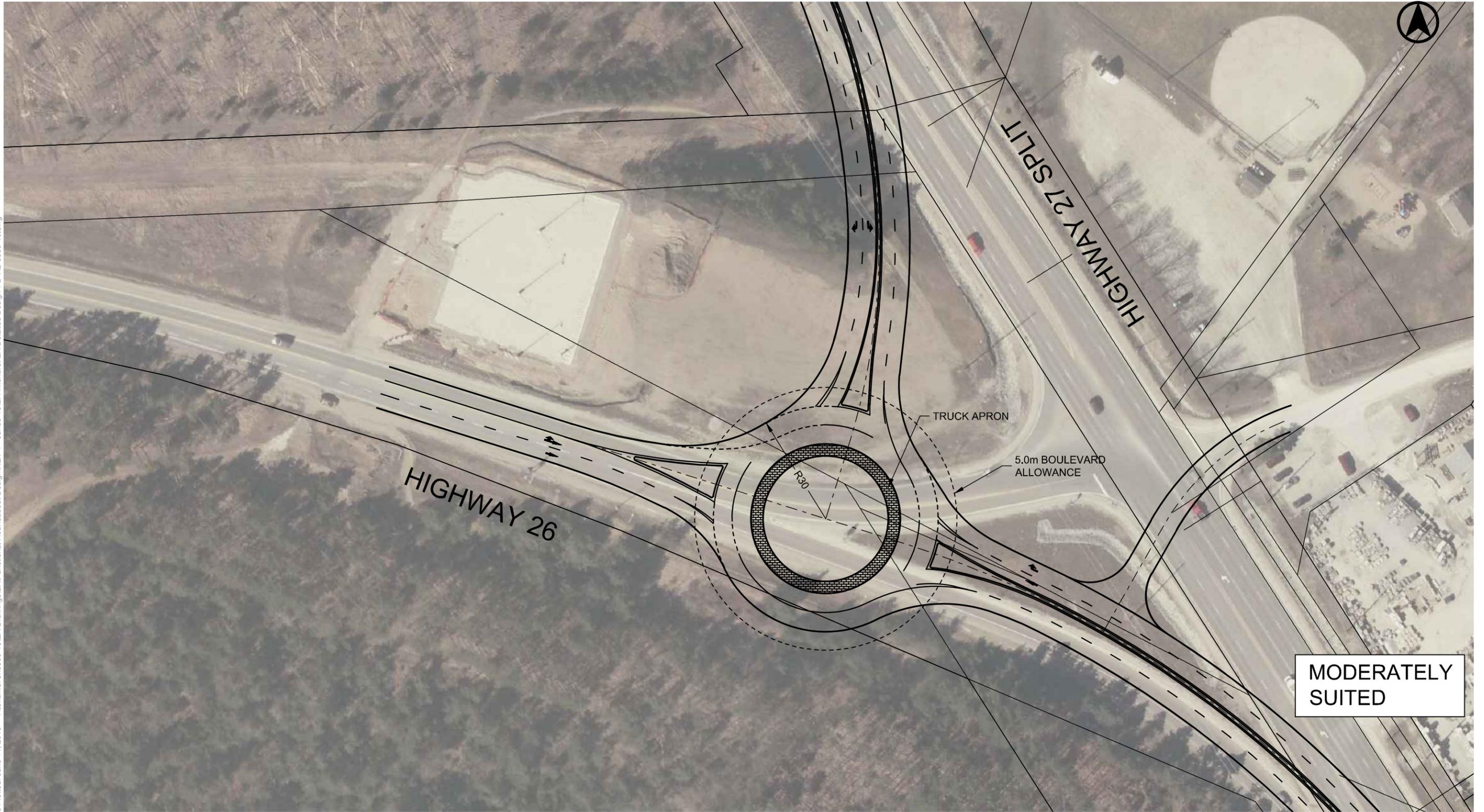


MIDHURST PHASE 3/4 EA - ROUNDABOUT REVIEW
PROPERTY / LAND USE IMPACT OF A POTENTIAL DOUBLE LANE ROUNDABOUT AT THE
INTERSECTION OF HIGHWAY 26 AND SNOW VALLEY / FINLAY ROAD

Project: Midhurst EA
Project No. 6860-10
Date: May 21, 2014
Revised: June 11, 2015

Scale 1:1,000
Drawing No. **C-RD-03**

Date Plotted: June 11, 2015 File name: J:\6860-10\EA Drawings\BA\F-unctional Roundabout Design\REV 1 - June 3-15\BA-Midhurst EA Detailed Design-FD-R2-6860-10.dwg



MODERATELY SUITED



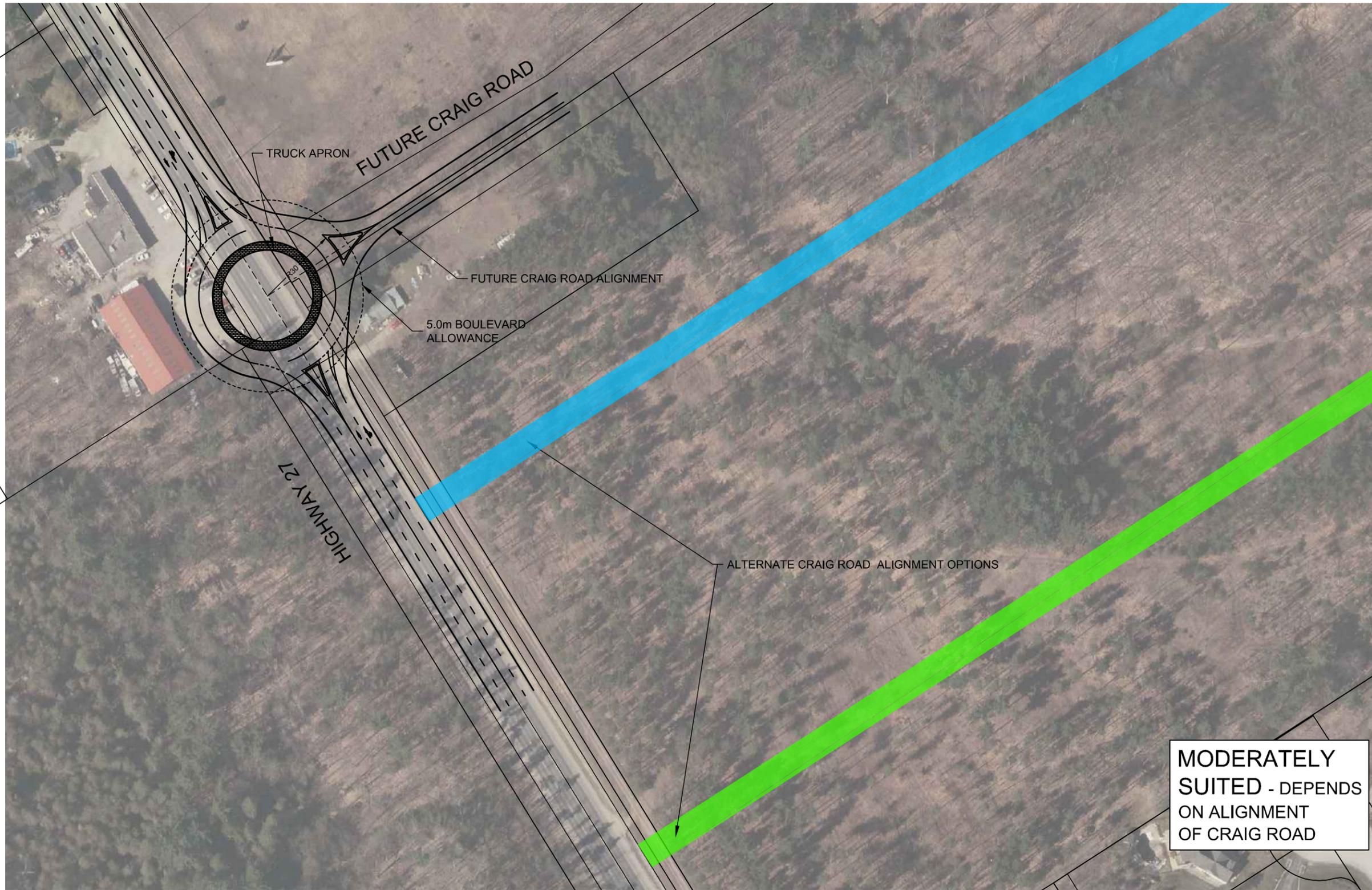
MIDHURST PHASE 3/4 EA - ROUNDABOUT REVIEW
 PROPERTY / LAND USE IMPACT OF A POTENTIAL DOUBLE LANE ROUNDABOUT AT
 THE INTERSECTION OF HIGHWAY 26 AND COUNTY ROAD 27 SPLIT

Project: Midhurst EA
 Project No. 6860-10
 Date: May 21, 2014
 Revised: June 11, 2015



Drawing No. **C-RD-02**

Date Plotted: June 11, 2015 File name: J:\6860-10\EA Drawings\BA\Functional Roundabout Design\REV 1 - June 3-15\BA-Midhurst EA Detailed Design-FD-R2-6860-10.dwg

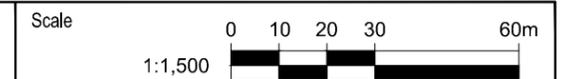


MODERATELY SUITED - DEPENDS ON ALIGNMENT OF CRAIG ROAD



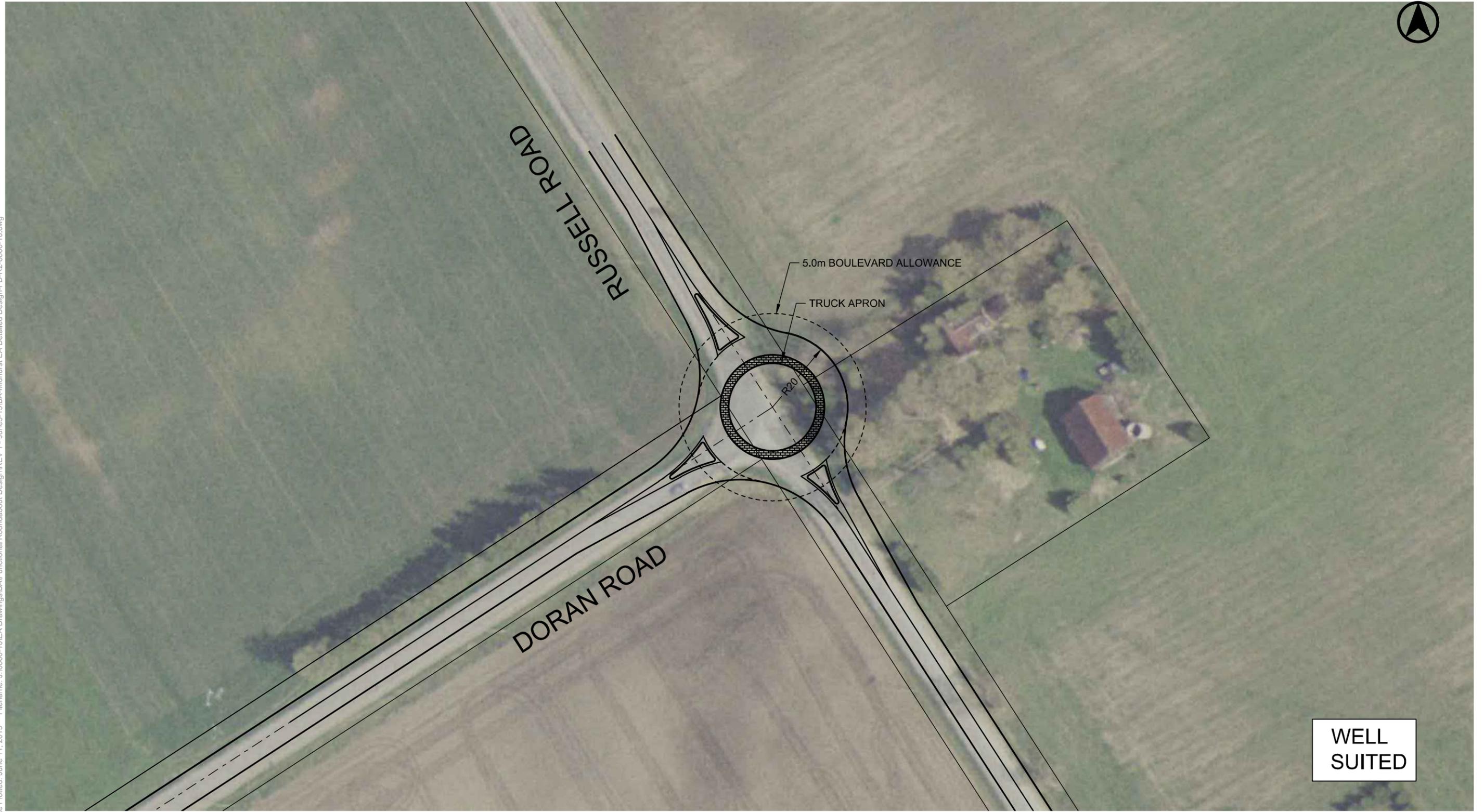
MIDHURST PHASE 3/4 EA - ROUNDABOUT REVIEW
 PROPERTY / LAND USE IMPACT OF A POTENTIAL DOUBLE LANE ROUNDABOUT AT THE INTERSECTION OF COUNTY ROAD 27 AND FUTURE CRAIG ROAD EXTENSION

Project: Midhurst EA
 Project No. 6860-10
 Date: May 21, 2014
 Revised: June 11, 2015



Drawing No. **C-RD-04**

Date Plotted: June 11, 2015 File name: J:\6860-10\EA Drawings\BA\Functional Roundabout Design\REV 1 - June 3-15\BA-Midhurst EA Detailed Design-FD-R2-6860-10.dwg



WELL SUITED



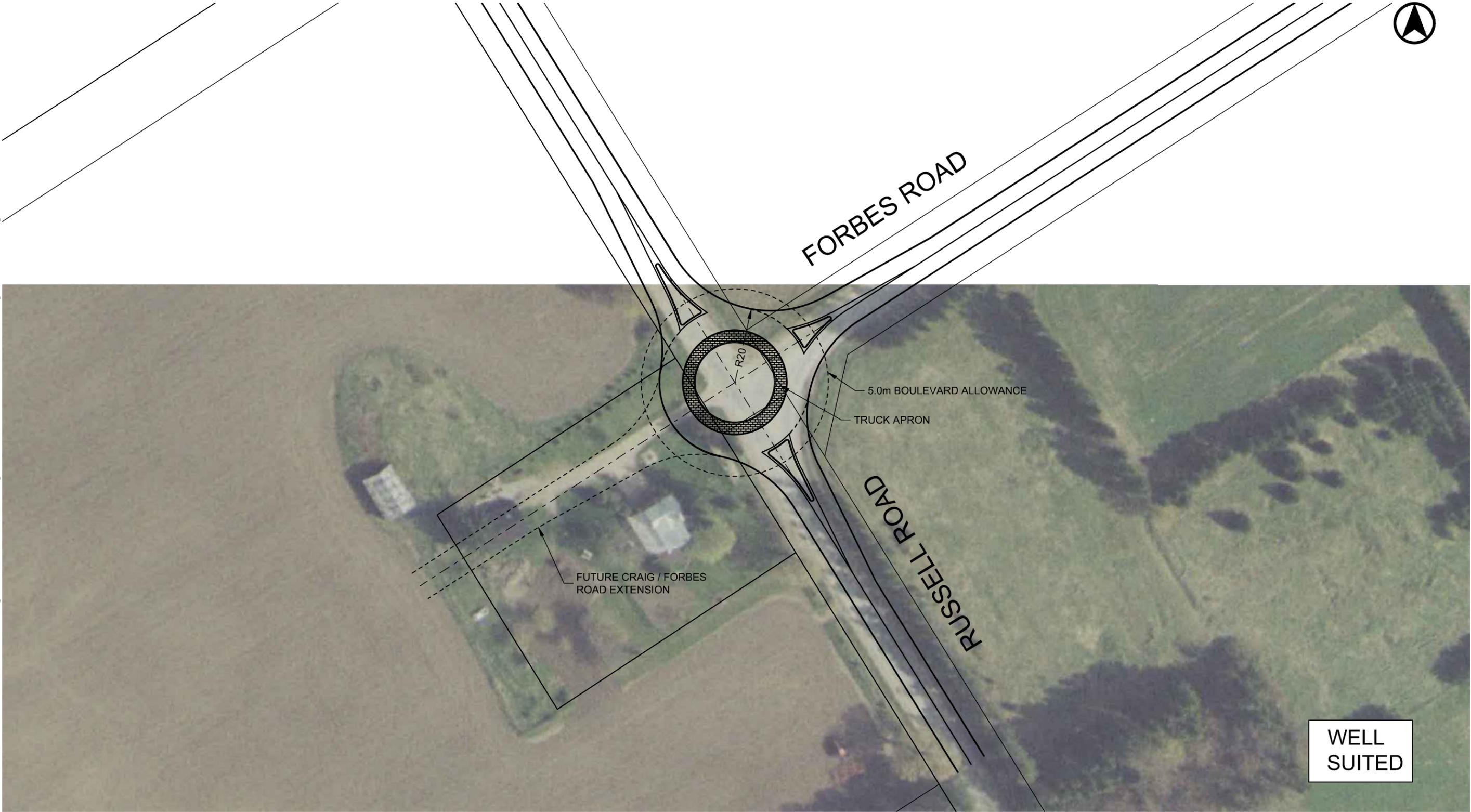
MIDHURST PHASE 3/4 EA - ROUNDABOUT REVIEW
 PROPERTY / LAND USE IMPACT OF A POTENTIAL SINGLE LANE ROUNDABOUT AT THE
 INTERSECTION OF RUSSELL ROAD AND DORAN ROAD

Project: Midhurst EA
 Project No. 6860-10
 Date: May 21, 2014
 Revised: June 11, 2015



Drawing No. **C-RD-05**

Date Plotted: June 11, 2015 File name: J:\6860-10\EA Drawings\BA\Functional Roundabout Design\REV 1 - June 3-15\BA-Midhurst EA Detailed Design-FD-R2-6860-10.dwg



WELL SUITED



MIDHURST PHASE 3/4 EA - ROUNDABOUT REVIEW
 PROPERTY / LAND USE IMPACT OF A POTENTIAL SINGLE LANE ROUNDABOUT
 AT THE INTERSECTION OF RUSSELL ROAD AND FORBES ROAD

Project: Midhurst EA
 Project No. 6860-10
 Date: May 21, 2014
 Revised: June 11, 2015

Scale 1:1,000

Drawing No. **C-RD-06**

APPENDIX 'H'

Memorandum – Highway 400 / Forbes Road Interchange Operations – AECOM, April 26, 2016

Memorandum

To	Peter Dorton (MTO), Eric Terro (MTO) Olga Garces (MTO)	Page	1
CC	Mike Neumann (Ainley) Ilya Sher (AECOM)		
Subject	Highway 400 / Forbes Road Interchange Operations Traffic Analysis		
From	Davoud Shirazi (AECOM) Iliia Merkoullovitch (AECOM)		
Date	April 26, 2016		

Introduction

AECOM was initially retained by the Township of Springwater through Ainley Consulting Group to undertake a Needs and Justification study for the Highway 400 interchange at Pooles Road. The study was completed and submitted to the Ministry of Transportation (MTO). After reviewing the justification study, the MTO project team concluded that the new partial interchange at Hwy400/Pooles Road was not justified. The MTO suggested that a more detailed transportation study be undertaken to assess Midhurst Phase I (2031) and Phase II (2041) development impacts on the Hwy 400/Forbes Road interchange with recommendations for appropriate mitigations. This memorandum summarizes the results of this assessment conducted by AECOM.

Analysis of Existing Operations

The intersection operations analysis was undertaken in Synchro using the existing turning movement counts provided by the MTO. Currently, both ramp terminal intersections are unsignalized. The AM and PM peak hour existing turning movement volumes are shown in **Exhibit 1**. **Exhibit 2** shows the level of service for each turning movement, as well as the 95th percentile queues on each approach. It can be seen that all the turning movements at both ramp terminal intersections operate with either LOS A or LOS B. The 95th percentile queues on the off-ramps are insignificant. The ramp terminal intersections operate very well under existing traffic conditions.

Exhibit 1 – Ramp Terminal Intersection Existing (2012) Peak Hour Volumes

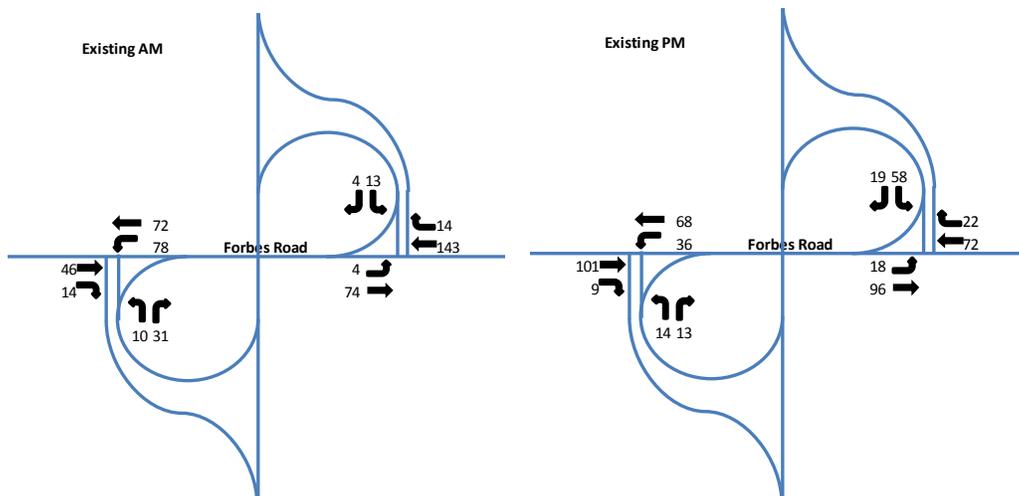


Exhibit 2 – Existing (2012) Intersections Operation

Intersection	Movement	Level of Service	
		AM	PM
West Ramp Terminal	NB Left	B	B
	NB Right	A	A
	EB Through	A	A
	EB Right	A	A
	WB Through	A	A
	WB Left	A	A
East Ramp Terminal	SB Left	B	B
	SB Right	A	A
	EB Through	A	A
	EB Left	A	A
	WB Through	A	A
	WB Right	A	A

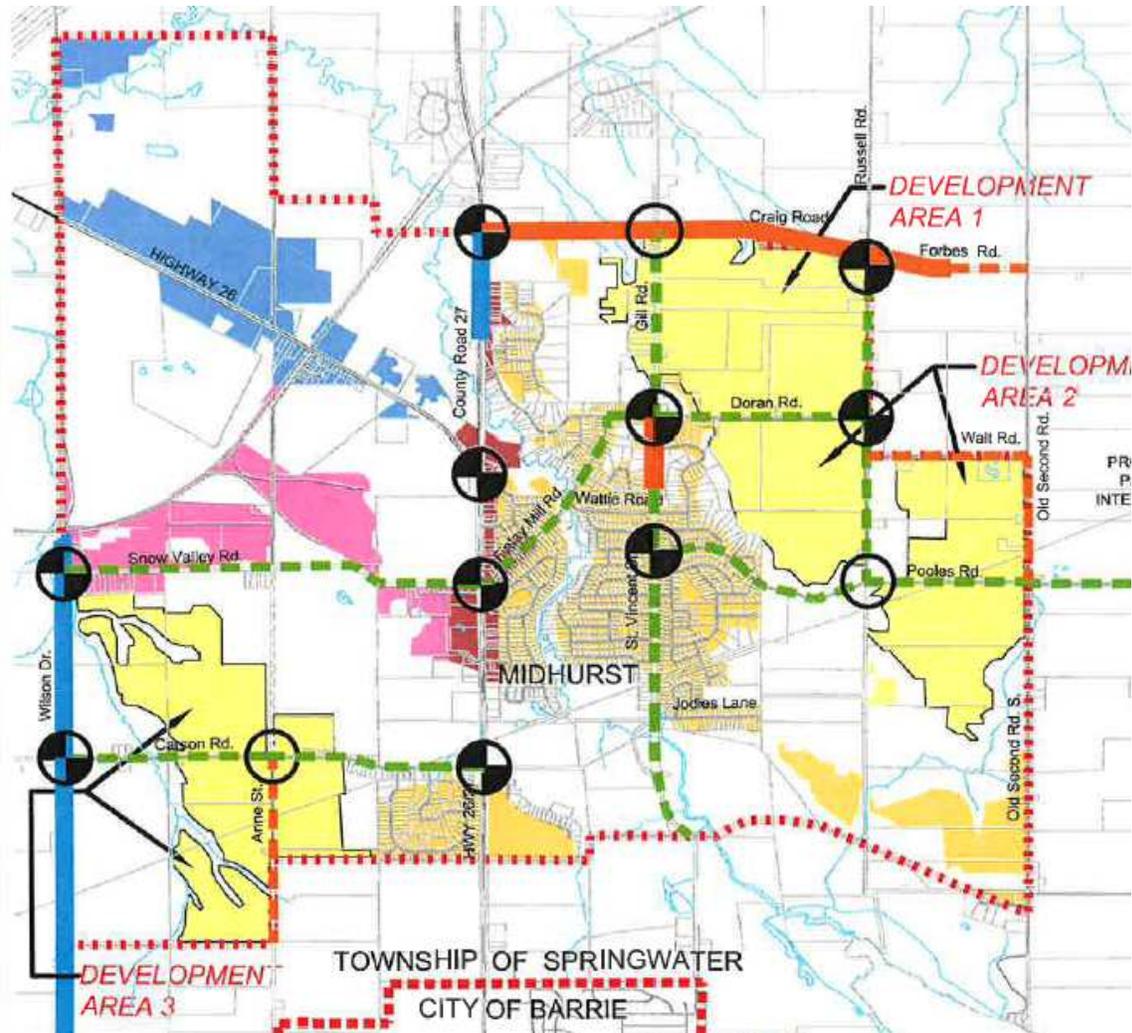
Intersection	Movement	95th Percentile Queue Length (m)	
		AM	PM
West Ramp Terminal	NB Left	0.4	0.5
	NB Right	0.8	0.3
	EB Through	0	0
	EB Right	0	0
	WB Through	1.3	0.6
	WB Left	1.3	0.6
East Ramp Terminal	SB Left	0.4	2.1
	SB Right	0.1	0.5
	EB Through	0.1	0.3
	EB Left	0.1	0.3
	WB Through	0	0
	WB Right	0	0

Future Traffic Forecast

The secondary plan for the, shown in **Exhibit 3**, consists of the following areas:

- Development Area 1 on the northeast corner: the area is located west of Russell road and bounded by Criag Road on the north and Doran Road on the south side
- Development Area 2 on the east: the area is located on both sides of Russell road and bounded on the north by Doran Road and Walt Road
- Development Area 3 on the southwest corner: the area is concentrated around the intersection of Carson Road and Anne street
- Employment/Mixed Use Area (shown in pink and brown) on the west side: the area is around Snow Valley Road and Highway 26

Exhibit 3 – Midhurst Development (Midhurst Transportation Master Plan)



The Midhurst secondary plan has two phases. The BA group memorandum “Update to EA Traffic Forecasts Based on Updated Employment Estimates” dated May 23, 2014 estimates the trips generated by the proposed developments in each phase as shown in **Exhibit 4**.

Exhibit 4 – Midhurst Development Traffic Generation (BA Group Memo)

**AM Peak Hour Trips Generated By
Phase I Developments**

Area	Trips In	Trips Out
Development Area 1	150	475
Development Area 2	235	750
Development Area 3	395	1225
Employment/Mixed Use Area	855	240
Sum	1635	2690

**AM Peak Hour Trips Generated By
Phase II Developments**

Area	Trips In	Trips Out
Development Area 1	305	915
Development Area 2	130	385
Development Area 3	0	0
Employment/Mixed Use Area	0	0
Sum	435	1300

Exhibit 4 indicates that the majority of trips associated with Phase I are to/from the west of Midhurst area, whereas the trips generated by Phase II developments are exclusively to/from Development Area 1 and 2 in the east of Midhurst.

Following the previous forecast for the Pooles Road Needs and Justification Study, it was proposed that Russell road and Forbes Road be widened to four lanes so that the Midhurst traffic could get easier access to Highway 400. It is evident that trips to/from the Development Area 1 and 2 would mostly benefit from these changes.

The previous model, which was developed for Pooles Road interchange justification study, was modified to reflect widening of Russell Road and Forbes Road. **Exhibits 5 and 6** illustrate 2031 and 2041 forecast link volumes with widened Russell Road and Forbes Road. It is assumed that Phase I is completed by 2031 and Phase II by 2041. The trips associated with each phase are reflected in the corresponding horizon year model. From 2031 to 2041, the southbound traffic on Highway 400 south of Forbes Road is expected to grow by about 900 vehicles per hour during the am peak hour. During the same period, hourly southbound traffic on St Vincent Street north of Barrie is increased by about 180 vehicles and on Highway 26 by 300 vehicles.

Exhibits 7 and 8 show the volume to capacity ratios in 2031 and 2041 respectively. The volume to capacity ratio is going to be 1.03 on St Vincent Street in 2041. This compares with 1.04 for the scenario in which Russell Road and Forbes Road have 2-lane cross sections. The volume to capacity ratio on Highway 400 is forecast to be 0.87 which compares with 0.86 for the scenario with 2-lane cross sections on Russell Road and Forbes Road.

Exhibits 9 and 10 compare the forecast volumes for the scenario with 2-lane Russell Road and Forbes Road with 4-lane Russell Road and Forbes Road. In 2031, the difference between the two scenarios is not significant. The extra capacity on the widened corridor is primarily used by those destined to Highway 93. However in 2041, the extra capacity is used by traffic previously taking Horseshoe Valley Road West to get on Highway 400 southbound as well as traffic previously taking the local road network to go south to Barrie. Also, it can be seen that some of traffic previously coming from the east and taking the west to south ramp at the Forbes Road interchange, prefer to take Line 2 North, Ski Trail Road, and Highway 93 to their destinations. The net result of all the new routing is 74 more vehicles per hour on Highway 400 southbound direction south of Forbes Road.

Exhibit 5 – 2031 Forecast Link Volumes

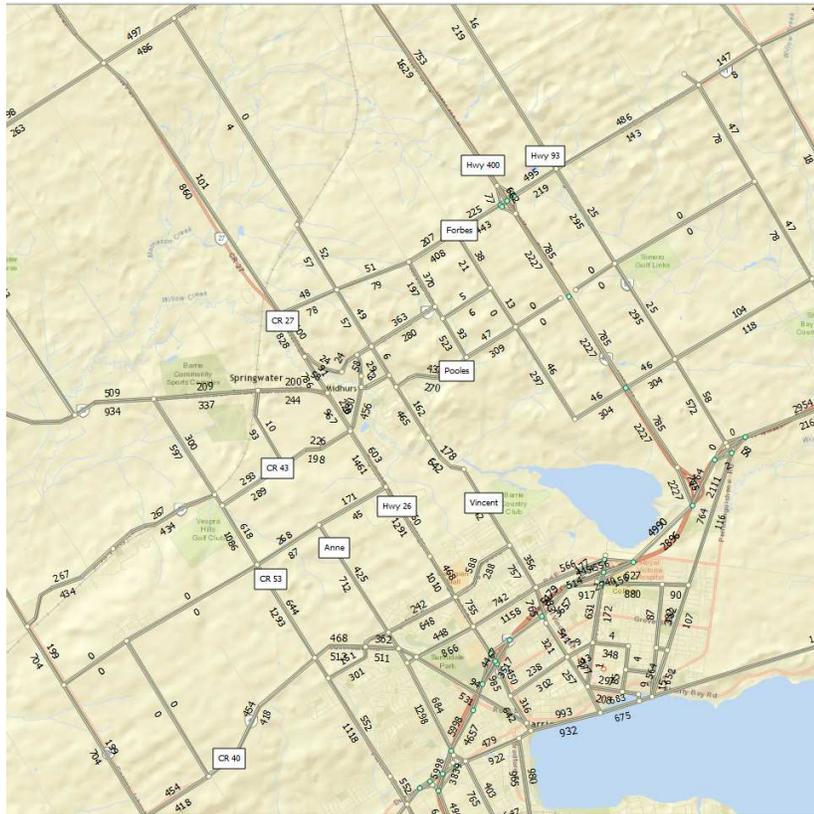


Exhibit 6 – 2041 Forecast Link Volumes

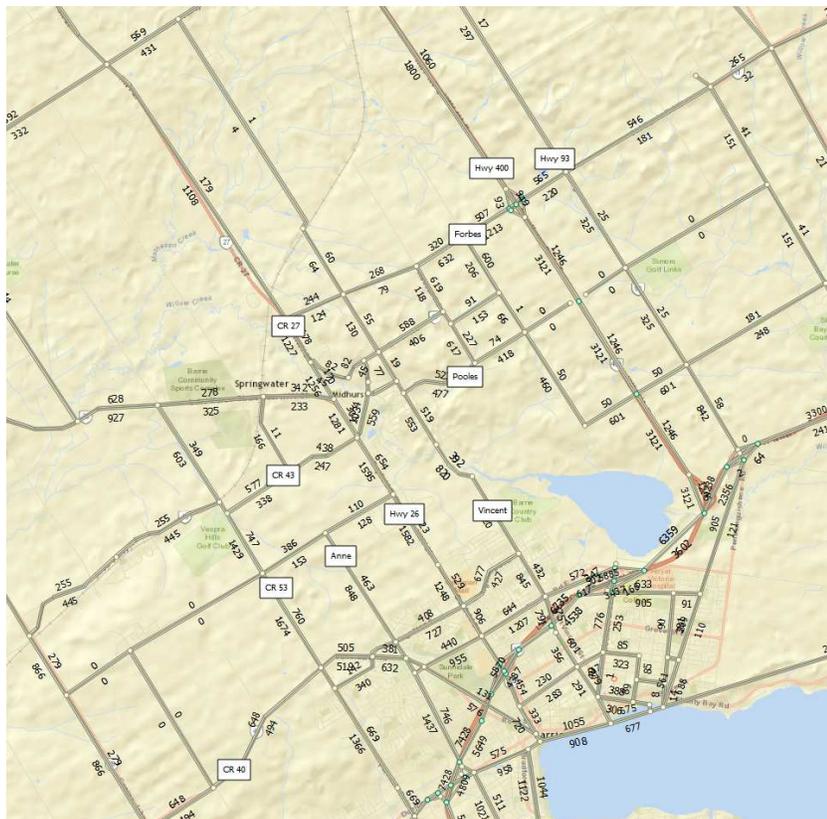


Exhibit 7 – 2031 Volume to Capacity Ratios

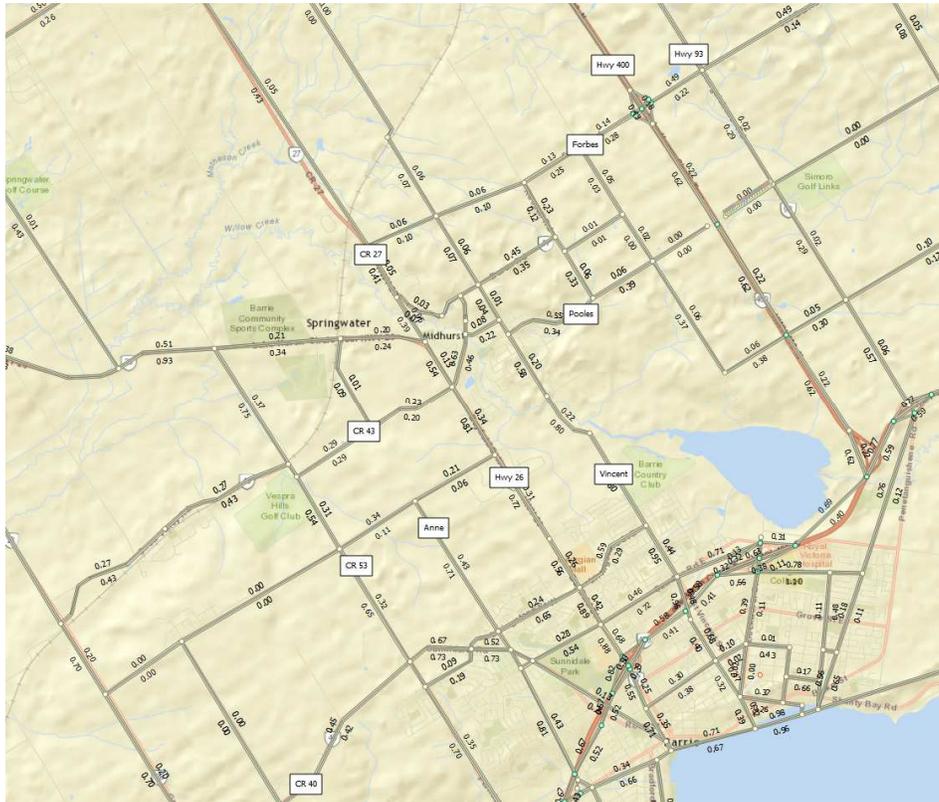


Exhibit 8 – 2041 Volume to Capacity Ratios

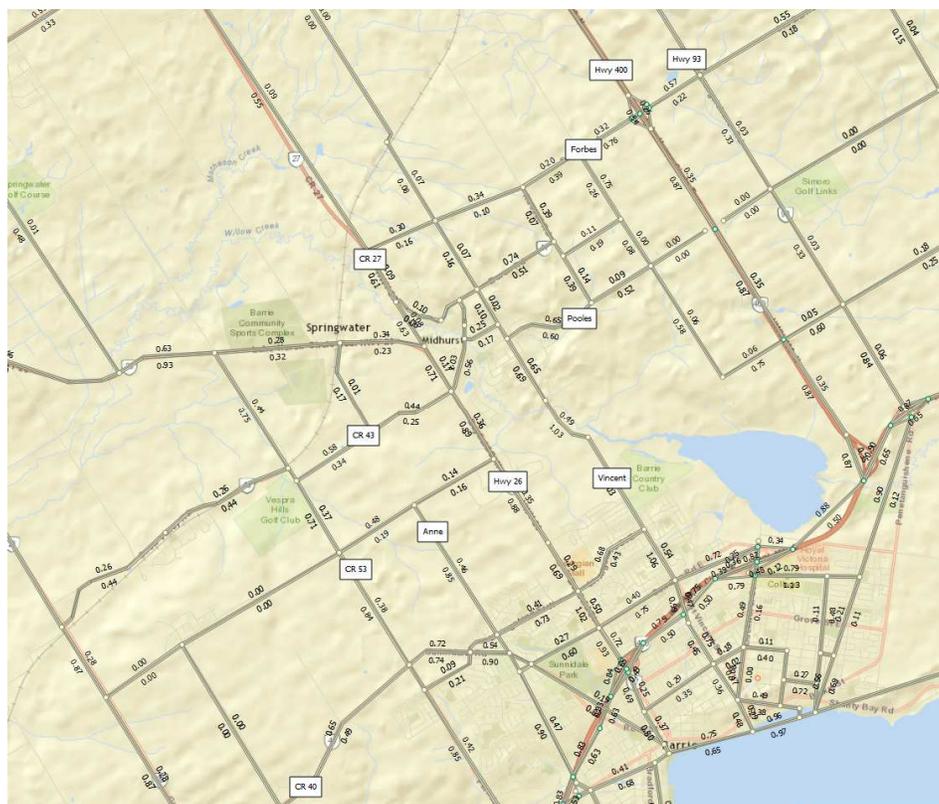


Exhibit 9 – 2031 Scenario Comparisons (2-Lane vs 4-Lane Russell and Forbes)

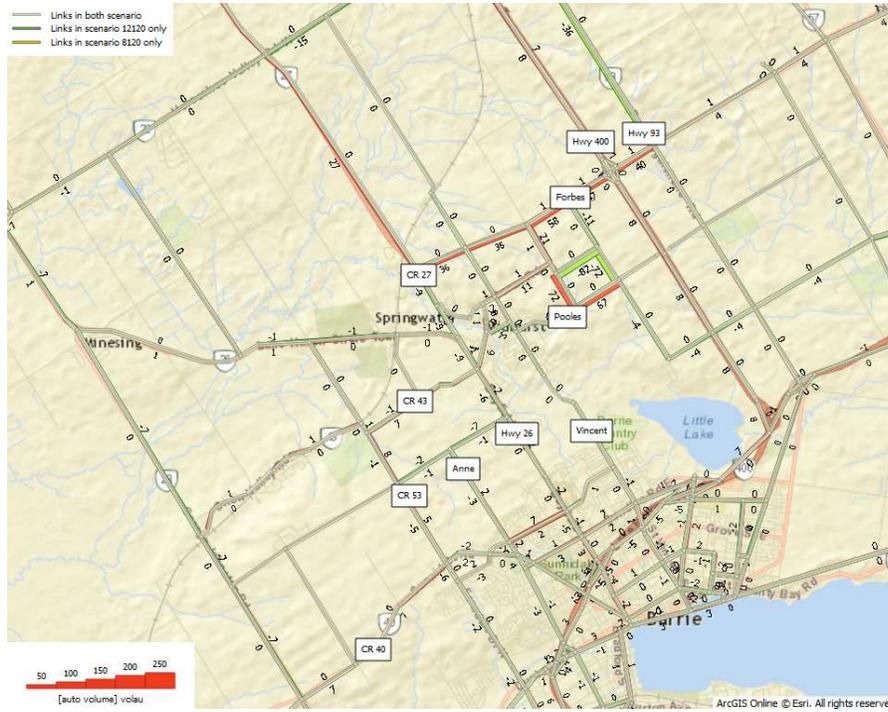
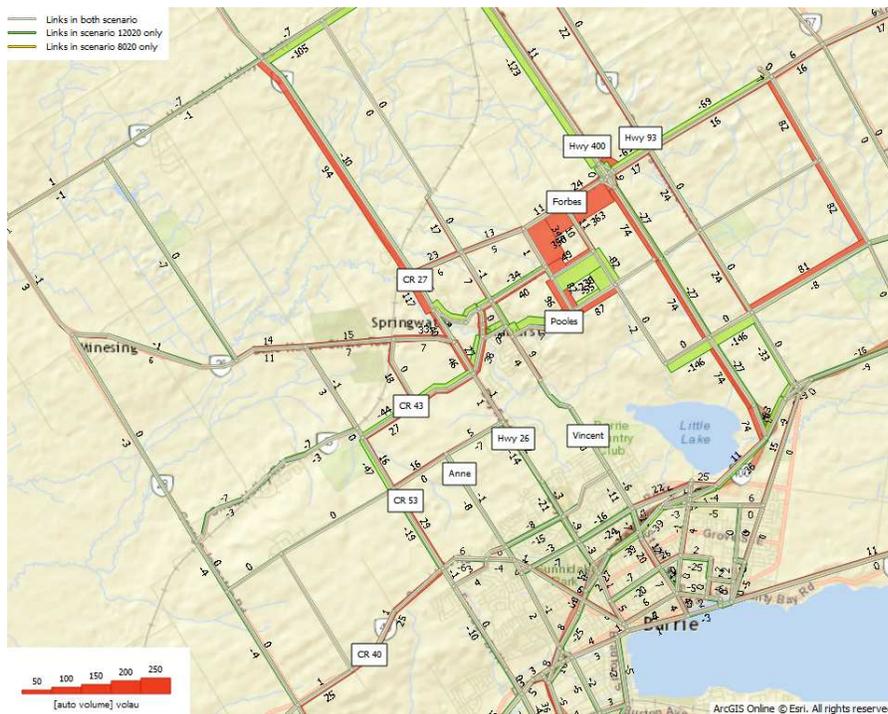


Exhibit 10 – 2041 Scenario Comparisons (2-Lane vs 4-Lane Russell and Forbes)



Exhibits 11 and 12 show the results of select link analysis for the west to south ramp at the Highway 400 and Forbes Road interchange during 2031 and 2041 AM peak hours. As expected, all the traffic using the ramps originates from Development Area 1 and 2 and is destined to City of Barrie and south of Barrie.

The models provide us with the forecast 2031 and 2041 AM peak hour volumes at the ramp terminals. The PM peak hour volumes were forecast by reversing the AM peak hour volumes and applying a growth factor of 4%.

Analysis of 2031 Operations

Phase I of Midhurst development is expected to be completed by the 2031 horizon year. This phase of the development is expected to generate 4325 two-way trips during the AM peak hour. This translates into 2690 outbound trips and 1635 inbound trips. The developments in this phase are from east and west of Midhurst, with the majority associated with the west side.

Exhibit 13 shows the 2031 forecast turning movement volumes. Generally, the interchange sees a significant increase in traffic volumes in 2031 when compared to the existing conditions. In the 2031 AM peak hour, the west to south volume at the west ramp terminal is especially significant. These volumes are similar to the scenario in which Russell Road and Forbes Road operate as two-lane roadways. As such, there is no need for the widening in 2031 horizon year.

A signal warrant analysis for 2031 horizon shows that each of the two ramp terminal intersections meet the 100% satisfied levels. Other requirements for 2031 horizon include eastbound right turn storage and westbound left turn storage lanes at the west ramp terminal intersection. **Exhibit 14** shows lane configurations at 2031 horizon year.

Exhibit 13 – Ramp Terminal Intersection 2031 Turning Movement Volumes

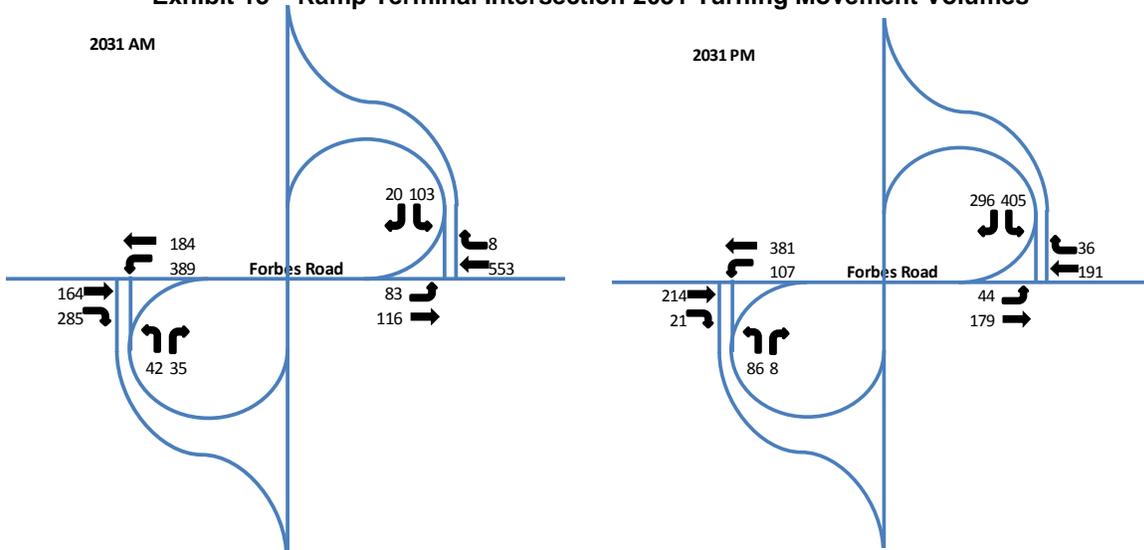


Exhibit 14 – 2031 Lane Configuration at Intersections

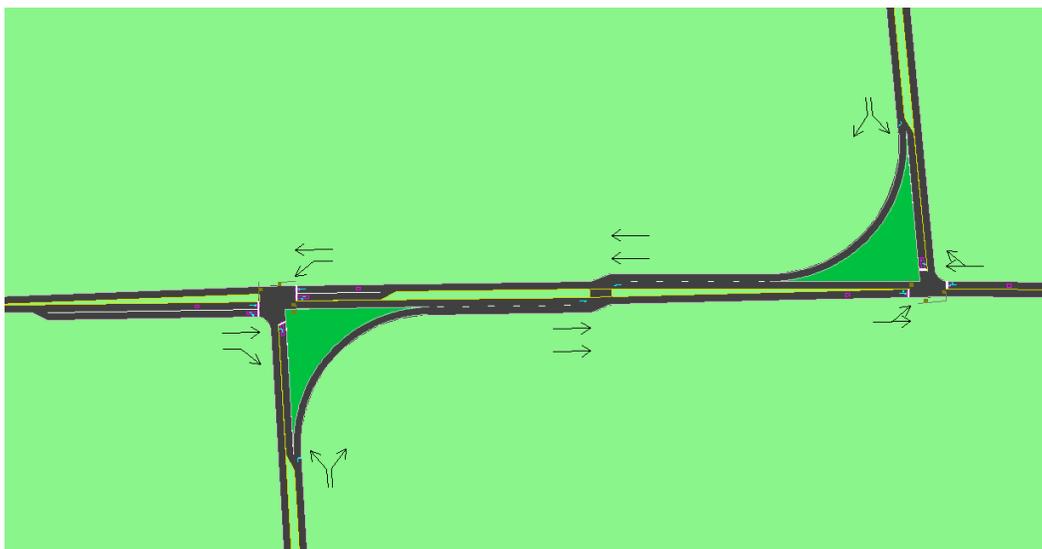


Exhibit 15 summarizes the operations of the ramp terminal intersections in 2031 with traffic signal controls and the required storage lanes. The operation is improved considerably with all turning movements operating at LOS C or better. The 95th percentile queue lengths on off-ramps were found not to exceed 41 metres.

Exhibit 15 – 2031 Intersections Operation

Intersection	Movement	Level of Service	
		AM	PM
West Ramp Terminal	NB Left	B	B
	NB Right	A	A
	EB Through/Right	A	A
	WB Through	A	B
	WB Left	C	A
East Ramp Terminal	SB Left	B	B
	SB Right	A	A
	EB Through/Left	B	B
	WB Through/Right	B	A

Intersection	Movement	95th Percentile Queue Length (m)	
		AM	PM
West Ramp Terminal	NB Left	10.5	11.7
	NB Right	0	0
	EB Through/Right	41.6	22.1
	WB Through	15.1	37.1
	WB Left	87.5	12
East Ramp Terminal	SB Left	13.6	40.7
	SB Right	0	0
	EB Through/Left	23.2	22.4
	WB Through/Right	62.4	22.1

Analysis of 2041 Operations

Phase II of Midhurst development is expected to be completed by 2041 horizon year. The full build out is expected to generate 6060 two-way trips during the AM peak hour. This translates into 3990 outbound trips and 2070 inbound trips. As mentioned before, the developments in this phase are all on the east of Midhurst and very close to Highway 400.

Exhibit 16 shows the 2041 forecast turning movement volumes. These volumes are higher than the previously assessed scenario in which Russell Road and Forbes Road operate as two-lane roadways. The west to south ramp in that scenario carries only 770 vehicles per hour in 2041 AM peak hour. This shows that the four-laning of Russell Road and Forbes Road will increase the volume by 300 vehicles per hour in the peak direction. The significant increase in the traffic justifies the widening.

Exhibit 17 shows lane configurations at 2041 horizon year. To accommodate the 2041 traffic, there is a need for a left turn storage lane for eastbound left at the west ramp terminal. The proposed configuration at the east ramp terminal provides for storage lanes for the eastbound left as well as westbound right turning movements. One of the two through lanes drops just east of the east ramp terminal.

Exhibit 18 summarizes the operations of the ramp terminal intersections in 2041 with the ultimate 4-lane cross-section of Forbes Road and traffic signal controls at ramp terminal intersections. It can be seen that all turning movements operate at LOS D or better. Also, the 95th percentile queues were found not to extend to the mainline as each off-ramp is at least 250 meters long.

Exhibit 16 – Ramp Terminal Intersection 2041 Turning Movement Volumes

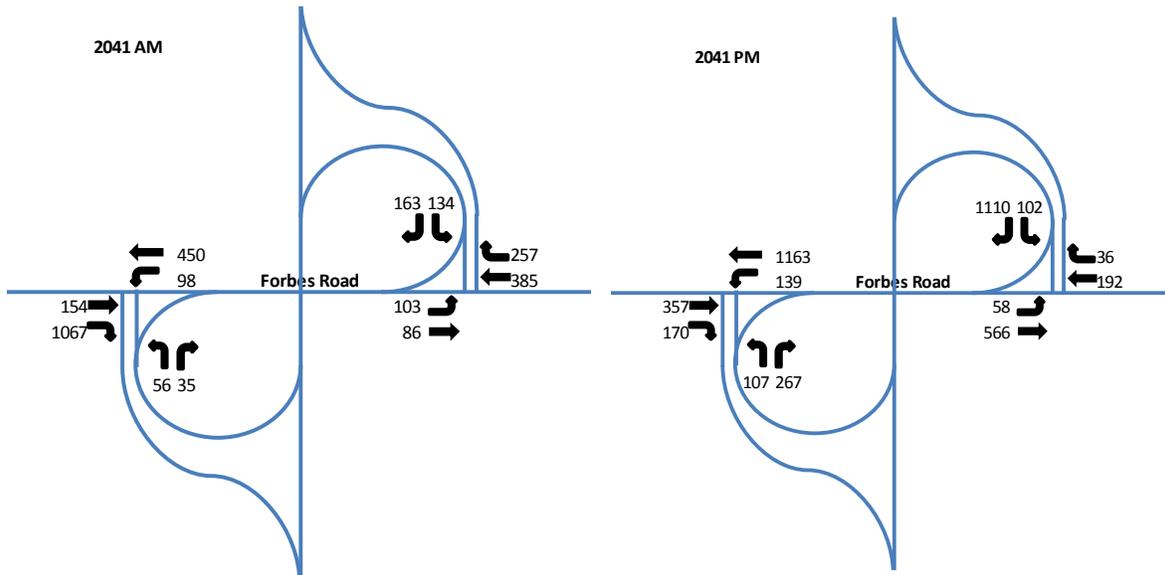


Exhibit 17 – 2041 Lane Configuration at Intersections

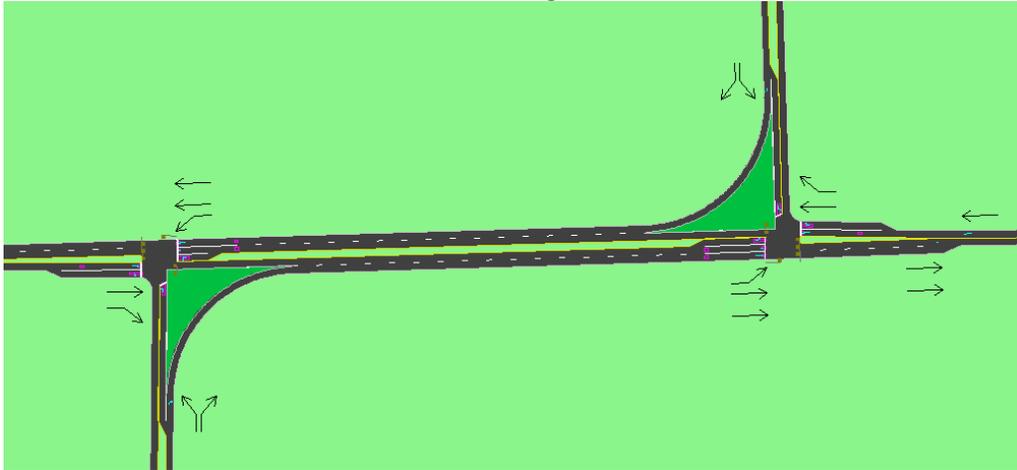


Exhibit 18 – 2041 Intersections Operation – Ultimate Configuration

Intersection	Movement	Level of Service	
		AM	PM
West Ramp Terminal	NB Left	A	B
	NB Right	A	A
	EB Through	C	C
	EB Right	C	A
	WB Through	B	B
	WB Left	D	C
East Ramp Terminal	SB Left	B	B
	SB Right	A	A
	EB Left	C	B
	EB Through	A	B
	WB Through	C	B
	WB Right	C	B

Intersection	Movement	95th Percentile Queue Length (m)	
		AM	PM
West Ramp Terminal	NB Left	8.8	9.9
	NB Right	0	0
	EB Through	32.3	61.2
	EB Right	203.9	8.2
	WB Through	31.9	64.2
	WB Left	33.1	19.6
East Ramp Terminal	SB Left	19.3	15.8
	SB Right	0	0
	EB Through	4.5	38.9
	EB Left	24.6	10.7
	WB Through	68.2	27.2
	WB Right	39.7	7.2

Conclusion

For the 2031 horizon year, there is no need to widen the Forbes Road and Russell Road as it hardly increases the level of traffic on the interchange. However, there is need for signalization and storage lanes at the west ramp terminal intersection. In 2041 horizon, widening Forbes Road and Russell Road is beneficial and attracts 300 more vehicles per hour from the Midhurst development to Highway 400 southbound direction in 2041 AM peak hour. The widening along with the storage lanes result in satisfactory operations at ramp terminal intersections.

Appendix A
Signal Warrant Analysis

Signal Warrant Calculation

MAJOR STREET:

MINOR STREET:

COMMENT:

NUMBER OF APPROACH LANES: 1 2

TEE INTERSECTION CONFIGURATION: YES NO

FLOW CONDITIONS: FREE FLOW (RURAL) RESTRICTED FLOW (URBAN)

VOLUME	AM	PM	FACTOR *	
1A - All	779	788	n/a	600
1B - Minor	42	86	83%	53
2A - Major	737	702	76%	547
2B - Cross	42	86	83%	53

* This factor relates average of the "peak eight hours" to the average of the "am and pm peak hours"

OVERALL WARRANT

150% SATISFIED: YES NO Warrant for new intersection with forecast traffic

120% SATISFIED: YES NO Warrant for existing intersection with forecast traffic

100% SATISFIED: YES NO Warrant for existing intersection with existing traffic *

COMBO 80% SATISFIED: YES NO Warrant for existing intersection with existing traffic

80% SATISFIED: YES NO

* Consider full underground provisions if 100% for forecast

WARRANT 1 - MINIMUM VEHICULAR VOLUME

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	
FLOW CONDITION	X				
ALL APPROACHES	480	720	600	900	600
	% FULFILLED				125%

150% SATISFIED: YES NO

120% SATISFIED: YES NO

100% SATISFIED: YES NO

80% SATISFIED: YES NO

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	
FLOW CONDITION	X				
MINOR STREET APPROACHES	180	255	180	255	53
	% FULFILLED				30%

WARRANT 2 - DELAY TO CROSS TRAFFIC

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	
FLOW CONDITION	X				
MAJOR STREET APPROACHES	480	720	600	900	547
	% FULFILLED				114%

150% SATISFIED: YES NO

120% SATISFIED: YES NO

100% SATISFIED: YES NO

80% SATISFIED: YES NO

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	
FLOW CONDITION	X				
TRAFFIC CROSSING MAJOR STREET	50	75	50	75	53
	% FULFILLED				106%

1A - MINIMUM VEHICULAR VOLUME: Total vehicle volume on all approaches for average day

1B - MINIMUM VEHICULAR VOLUME: Total vehicle volume on minor streets

2A - DELAY TO CROSS TRAFFIC: Total vehicle volume on major street for average day

2B - DELAY TO CROSS TRAFFIC: Total vehicle and pedestrian volume crossing major street; comprising: (1) lefts from both minor streets, (2) heaviest through from minor street, (3) 50% of heavier left turn from major street when following criteria met: (a) left turn volume >120 and (b) left turn volume plus opposing volume > 720, (4) pedestrians crossing the major street.

Signal Warrant Calculation

MAJOR STREET:

MINOR STREET:

COMMENT:

NUMBER OF APPROACH LANES: 1 2

TEE INTERSECTION CONFIGURATION: YES NO

FLOW CONDITIONS: FREE FLOW (RURAL) RESTRICTED FLOW (URBAN)

VOLUME	AM	PM	FACTOR *	
1A - All	855	819	n/a	666
1B - Minor	103	405	81%	206
2A - Major	752	414	79%	461
2B - Cross	103	405	81%	206

* This factor relates average of the "peak eight hours" to the average of the "am and pm peak hours"

OVERALL WARRANT

150% SATISFIED: YES NO Warrant for new intersection with forecast traffic

120% SATISFIED: YES NO Warrant for existing intersection with forecast traffic

100% SATISFIED: YES NO Warrant for existing intersection with existing traffic *

COMBO 80% SATISFIED: YES NO Warrant for existing intersection with existing traffic

80% SATISFIED: YES NO

* Consider full underground provisions if 100% for forecast

WARRANT 1 - MINIMUM VEHICULAR VOLUME

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	
FLOW CONDITION	X				
ALL APPROACHES	480	720	600	900	666
% FULFILLED					139%

150% SATISFIED: YES NO

120% SATISFIED: YES NO

100% SATISFIED: YES NO

80% SATISFIED: YES NO

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	
FLOW CONDITION	X				
MINOR STREET APPROACHES	180	255	180	255	206
% FULFILLED					114%

WARRANT 2 - DELAY TO CROSS TRAFFIC

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	
FLOW CONDITION	X				
MAJOR STREET APPROACHES	480	720	600	900	461
% FULFILLED					96%

150% SATISFIED: YES NO

120% SATISFIED: YES NO

100% SATISFIED: YES NO

80% SATISFIED: YES NO

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	
FLOW CONDITION	X				
TRAFFIC CROSSING MAJOR STREET	50	75	50	75	206
% FULFILLED					411%

1A - MINIMUM VEHICULAR VOLUME: Total vehicle volume on all approaches for average day
 1B - MINIMUM VEHICULAR VOLUME: Total vehicle volume on minor streets
 2A - DELAY TO CROSS TRAFFIC: Total vehicle volume on major street for average day
 2B - DELAY TO CROSS TRAFFIC: Total vehicle and pedestrian volume crossing major street; comprising: (1) lefts from both minor streets, (2) heaviest through from minor street, (3) 50% of heavier left turn from major street when following criteria met: (a) left turn volume >120 and (b) left turn volume plus opposing volume > 720, (4) pedestrians crossing the major street.