INDIGENOUS CONSULTATION & ATTACHMENTS

Line Item	Date of Engagement	Name of Community and Contact	Description of Engagement Activity	Date of Response	Response and Issue Resolution (if applicable)	Attachment No.
1.1	March 8, 2019	Mississaugas of the Credit First Nation ("MNCFN") [redacted]	Enbridge representative sent a notification package to the MNCFN representative for the Power to Gas Pipeline Project ("Project"). The package included an overview of the Project and details regarding the open houses. The Enbridge representative requested a meeting with the community to provide them with an overview of the Project and gather information about any potential impacts the Project may have on their nation.	March 13, 2019	MNCFN acknowledged receipt of the package and requested a meeting.	1-1 and 1-2
1.2	March 14, 2019	MNCFN [redacted]	Enbridge representative confirmed meeting for April 24.	N/A	N/A	1-2
1.3	April 24, 2019	MNCFN	An Enbridge representative met with the MNCFN Consultation Manager, Archaeological Coordinator and Regulatory Coordinator regarding the Project. The Enbridge representative provided a copy of the Project slide deck outlining the purpose of the Project, what hydrogen blending is, the similarities, advantages and differences between hydrogen and natural gas, the permits and approvals required for the Project, an overview of the environmental assessment and proposed Project timelines. A copy of the Stage 1 Archaeological Assessment report was also provided to MNCFN during the in-person meeting.	N/A	N/A	N/A – in-person meeting
1.4	April 24, 2019	MNCFN [redacted]	MNCFN representative requested a technical presentation.	April 25, 2019	Enbridge representative responded to the MNCFN representative requesting suggested dates and times for a technical presentation. Enbridge representative also confirmed the questions raised during the meeting by MNCFN and that responses are being developed by Enbridge.	1-3
1.5	May 2, 2019	MNCFN [redacted]	Enbridge representative provided responses to MNCFN's questions.	May 3, 2019	MNCFN thanked Enbridge representative for responses to their questions. MNCFN asked an additional question about the hydrogen ratio.	1-4
1.6	May 3, 2019	MNCFN [redacted]	Enbridge representative provided response on hydrogen ratio.	N/A	N/A	1-4
1.7	June 28, 2019	MNCFN [redacted]	Enbridge representative provided notification of the public information session to be held on July 9, 2019.	June 28, 2019	MNCFN responded that they were also looking to have a technical meeting with Project representatives and were wondering when that could be arranged.	1-5
1.8	June 28, 2019	MNCFN [redacted]	Enbridge representative stated that they had sent MNCFN some potential dates for a meeting but had never heard back. Enbridge representative asked for suggested dates from MNCFN to check availability for a meeting and asked if MNCFN had a chance to review Enbridge's answers to their questions provided previously (May 2 email).	June 28, 2019	MNCFN responded that they accidentally overlooked the email with the suggested meeting dates and acknowledged receipt of the answers to their questions. MNCFN indicated they would be in touch with new suggested meeting dates.	1-5
1.9	July 3, 2019	MNCFN [redacted]	Enbridge representative emailed MNCFN with the open house invitation for July 9, 2019.	July 16, 2019	MNCFN representative thanked Enbridge representative for open house information that was emailed on July 3 and stated they had been unable to attend the open house on July 9, 2019.	1-6 and 1-7
1.10	July 4, 2019	MNCFN [redacted]	MNFCN emailed Enbridge representative stating that there did not seem to be enough interest in her office to hold a technical meeting and instead requested some recommended resources in order to do some research on the topic of power to gas for herself.	N/A	N/A	1-8

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1.11	August 15, 2019	MNCFN [redacted]	Enbridge representative emailed MNCFN representative to provide advance notice of upcoming Stage 2 archaeological fieldwork to be conducted in the first half of September and asked if MNCFN would like to participate.	August 19, 2019	MNCFN representative emailed Enbridge representative stating that they needed to set up a Field Liaison Representative ("FLR") participation agreement.	1-9
1.12	August 28, 2019	MNCFN [redacted]	Enbridge representative agreed and stated they would send along an agreement similar to a previous agreement that was used for another project.	August 30, 2019	MNCFN acknowledged that this was an acceptable approach.	1-9
1.13	September 6, 2019	MNCFN [redacted]	Enbridge representative emailed MNCFN representative with date of Stage 2 archaeological fieldwork and provided a draft participation agreement for their review.	September 9, 2019	MNCFN representative responded that the agreement looked good to proceed but were waiting on a signature that would be acquired the following week.	1-9
1.14	September 13, 2019	MNCFN [redacted]	MNCFN representative returned the partially executed FLR participation agreement and requested a copy of the final version with Enbridge's signatures when complete.	September 13, 2019	Enbridge representative thanked MNCFN representative for the signed agreement. Enbridge representative stated that the archaeological fieldwork for Phase 2 of the Project was now being deferred to next year and that Enbridge would notify MNCFN of new timelines for fieldwork when details become available and would keep the agreement on file for when it comes time to resume the work.	1-9
1.15	September 13, 2019	MNCFN [redacted]	MNCFN representative thanked Enbridge representative for the update and requested they be informed when the time comes to proceed with Phase 2.	N/A	N/A	1-9
1.16	February 27, 2020	MNCFN [redacted]	Enbridge representative sent Project update summary, draft ER Amendment, and Notice of Project Change.	February 28, 2020	MNCFN representative replied, acknowledging receipt of information and stating that if they had concerns regarding the proposed Project changes they would let Enbridge know.	1-10
1.17	February 28, 2020	MNCFN [redacted]	Enbridge representative replied to MNCFN representative acknowledging their response and invited them to reach out if they have any additional questions.	N/A	N/A	N/A
2.1	March 8, 2019	Huron Wendat Nation ("HWN") [redacted]	Enbridge representative sent a Project notification package to a representative from HWN that included an overview of the Project and details regarding the open houses. Enbridge requested a meeting with the community to provide them with an overview of the Project and gather information about any potential impacts the Project may have on their nation.	March 11, 2019	HWN thanked Enbridge for the project notice and requested shape files of the proposed routes.	2-1 and 2-2
2.2	March 13, 2019	HWN [redacted]	Enbridge provided the requested shape files.	March 14, 2019	HWN representative thanked Enbridge for the shape files and asked about archaeology program for the Project.	2-3 and 2-4
2.3	March 14, 2019	HWN [redacted]	Enbridge responded that the Stage 1 archaeological assessment had already been completed and said they would pass along the report for HWN to review when it was ready. Enbridge representative said they would keep HWN posted on upcoming Stage 2 fieldwork and they would provide funding for HWN to participate.	March 14, 2019	HWN thanked Enbridge for the prompt reply.	2-4
2.4	April 10, 2019	HWN [redacted]	Enbridge representative emailed the HWN representative inquiring if they had the opportunity to review the Project materials and if they would like to arrange a conference call to better understand the Project. The Enbridge representative requested a call back.	April 10, 2019	HWN representative requested a copy of the Stage 1 Archaeological Assessment report and inquired about the planned Stage 2 Archaeological Assessment.	2-5

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2.5	April 24, 2019	HWN [redacted]	Enbridge representative responded that the Stage 1 Archaeological Assessment report had been provided in a previous email. Enbridge representative requested an in-person meeting.	April 25, 2019	HWN representative confirmed they did not yet receive the Stage 1 Archaeological Assessment Report and noted that they are open to a meeting.	2-5
2.6	April 25, 2019	HWN [redacted]	Enbridge representative provided the Stage 1 Archaeological Assessment Report and requested a meeting for May 3.	N/A	N/A	2-5
2.7	May 3, 2019	HWN [redacted]	Enbridge representative emailed the presentation slide deck to the HWN representative in advance of the meeting.	N/A	N/A	2-6
2.8	May 3, 2019	HWN	Enbridge representative and HWN Project Coordinator held a conference call regarding the Project. The Enbridge representative provided a copy of the Project slide deck outlining the purpose of the Project, map of the proposed Project route, what hydrogen blending is, the similarities, advantages and differences between hydrogen and natural gas, the permits and approvals required for the Project, an overview of the environmental assessment and proposed Project timelines. The HWN representative did not express any concerns with the proposed Project.	N/A	N/A	N/A – phone call
2.9	July 3, 2019	HWN [redacted]	Enbridge representative emailed notification for the public information session to be held on July 9, 2019.	July 4, 2019	HWN representative thanked Enbridge for the information and asked to be refreshed about the status of archaeology for the Project.	2-7 and 2-8
2.10	July 4, 2019	HWN [redacted]	Enbridge representative responded with current status of archaeology work and stated that HWN would be provided with advance notice to participate in upcoming archaeological field work.	July 4, 2019	HWN representative thanked Enbridge for their response regarding the archaeology work.	2-8
2.11	August 15, 2019	HWN [redacted]	Enbridge representative emailed HWN representative to provide advance notice of upcoming Stage 2 archaeological fieldwork to be conducted in the first half of September and asked if HWN would like to participate.	August 26, 2019	HWN representative responded stating they would like to participate in the field work and to let them know the schedule and details when available.	2-9
2.12	September 20, 2019	HWN [redacted]	Enbridge representative emailed HWN representative stating that the archaeological fieldwork for Phase 2 of the Project was now being deferred to next year and that Enbridge would notify HWN of new timelines for fieldwork when details become available.	September 23, 2019	HWN representative thanked Enbridge representative for the update.	2-10
2.13	October 3, 2019	HWN [redacted]	Enbridge representative emailed HWN representative stating that the archaeological fieldwork for Phase 2 of the Project was now being deferred to next year and that Enbridge would notify HWN of new timelines for fieldwork when details become available. Enbridge representative also included a link to the Environmental Report on the Enbridge Gas website.	October 3, 2019	HWN representative thanked Enbridge representative for the update and asked to be informed as soon as dates for the Stage 2 work are decided.	2-11
2.14	October 3, 2019	HWN [redacted]	Enbridge representative responded that they would be in touch.	N/A	N/A	2-11
2.15	February 28, 2020	HWN [redacted]	Enbridge representative sent Project update summary, draft ER Amendment, and Notice of Project Change. Enbridge asked that feedback from the community be provided by Friday March 27, 2020.	February 28, 2020	HWN representative thanked Enbridge representative for the update. HWN representative requested details of the timing of Stage 2 archaeological fieldwork and requested a copy of the Stage 1 AA report.	2-12

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2.16	February 28, 2020	HWN [redacted]	Enbridge representative thanked HWN representative for their response and stated they would look into their questions and get back to them.	N/A	N/A	2-12
2.17	February 28, 2020	HWN [redacted]	Enbridge representative confirmed that no new archaeological assessments were required for the proposed Project changes. As such, consistent with the Stage 1 AA (provided) from 2019, there was no Stage 2 fieldwork required for the Project.	March 2, 2020	HWN representative thanked the Enbridge representative and requested that HWN be updated in the event that any further archaeological assessment is initiated as part of next Project phases.	2-13
2.18	March 10, 2020	HWN [redacted]	Enbridge representative acknowledged HWFN representative's request to remain updated should further archaeological assessments be initiated in relation to the Project.	N/A	N/A	2-13
3.1	March 8, 2019	Mississaugas of Scugog Island First Nation ("MSIFN") [redacted]	Enbridge representative sent a Project notification package that included an overview of the Project and details regarding the open houses. Enbridge requested a meeting with the community to provide them with an overview of the Project and gather information about any potential impacts the Project may have on their nation.	N/A	N/A	3-1
3.2	April 9, 2019	MSIFN	Enbridge representative contacted the assistant to the Consultation Supervisor and explained that she would like the opportunity to meet with the community to provide an overview of the proposed Project. MSIFN representative welcomed the opportunity to meet with Enbridge and suggested Enbridge call back on Friday when the Consultation Supervisor would be back in the office to arrange a date and time.	N/A	N/A	N/A – phone call
3.3	April 30, 2019	MSIFN	Enbridge met with the Consultation Supervisor regarding the proposed Project. During the in person meeting with the MSIFN, the Enbridge representative provided the MSIFN representative with a copy of the Project slide deck outlining the purpose of the Project, map of the proposed Project route, information regarding what hydrogen blending is, the similarities, advantages and differences between hydrogen and natural gas, the permits and approvals required for the Project, an overview of the environmental assessment and an outline of the proposed Project timelines. The MSIFN representative did not express any concerns with the proposed Project.	N/A	N/A	N/A – in-person meeting
3.4	July 3, 2019	MSIFN [redacted]	Enbridge representative provided notification of the public information session to be held on July 9, 2019.	N/A	N/A	3-2
3.5	August 15, 2019	MSIFN [redacted]	Enbridge representative emailed MSIFN representative to provide advance notice of upcoming Stage 2 archaeological fieldwork to be conducted in the first half of September and asked if MSIFN would like to participate.	August 15, 2019	MSIFN representative responded, thanking Enbridge for the update on upcoming archeology fieldwork. MSIFN stated they would be unable to participate but recommended reaching out to Curve Lake First Nation.	3-3
3.6	October 3, 2019	MSIFN [redacted]	Enbridge representative emailed MSIFN representative stating that the archaeological fieldwork for Phase 2 of the Project was now being deferred to next year and that Enbridge would notify MSIFN of new timelines for fieldwork when details become available. Enbridge representative also included a link to the Environmental Report on the Enbridge Gas website.	N/A	N/A	3-4
3.7	October 3, 2019	MSIFN [redacted]	Enbridge representative emailed the MSIFN representative inquiring as to whether the contact person had changed, since their last email sent on October 3rd was unable to be delivered. The email included the message originally sent to a different representative at MSIFN.	N/A	N/A	3-5

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3.8	March 6, 2020	MSIFN [redacted]	Enbridge representative sent Project update summary, draft ER Amendment, and Notice of Project Change. Enbridge representative offered capacity funding and requested a meeting later in the month.	N/A	N/A	3-6
3.9	March 13, 2020	MSIFN [redacted]	Enbridge representative called MSIFN representative to follow-up on the email sent on March 6. In the call, the Enbridge representative summarized the Project scope and the changes proposed in the ER Amendment. Enbridge representative also stated that no further archaeological work was required for the Project. Enbridge representative reiterated the offer to provide capacity funding to MSIFN to review the ER Amendment and other Project materials. The MSIFN representative indicated that they would be away from the office for a few weeks but would review the Project materials upon returning and would be in touch if there were any questions for Enbridge.	N/A	N/A	N/A – phone call
4.1	March 8, 2019	Alderville First Nation ("AFN") [redacted]	Enbridge representative sent a Project notification package to the AFN representative that included an overview of the Project and details regarding the open houses. Enbridge representative requested a meeting with the community to provide them with an overview of the Project and gather information about any potential impacts the Project may have on their nation.	March 8, 2019	Enbridge was notified the contact person for AFN had changed. AFN provided new contact information for their Community Consultation worker. The Enbridge representative forwarded the Project information to the new contact at AFN.	4-1
4.2	April 9, 2019	AFN	Enbridge representative left a message with the AFN representative requesting the opportunity to meet for the purpose of providing an overview of the Project. The Enbridge representative requested a call back.	N/A	N/A	N/A – phone call
4.3	July 3, 2019	AFN [redacted]	Enbridge representative provided notice of the public information session to be held on July 9, 2019. Enbridge noted they had not received any feedback to date from AFN and asked if AFN wanted to remain informed of the Project or if they would prefer to be removed from the Project distribution list.	N/A	N/A	4-2
4.4	August 15, 2019	AFN [redacted]	Enbridge representative emailed AFN representative to provide advance notice of upcoming Stage 2 archaeological fieldwork to be conducted in September and asked if AFN would like to participate.	N/A	N/A	4-3
4.5	October 3, 2019	AFN [redacted]	Enbridge representative emailed the AFN representative a link to the Environmental Report on the Enbridge Gas website.	N/A	N/A	4-4
4.6	January 21, 2020	Alderville First Nation (AFN)	Enbridge representative called AFN representative to share Project information. The AFN representative asked some questions which the Enbridge representative provided responses to and then the AFN representative requested that Enbridge send an email requesting a meeting.	N/A	N/A	N/A – phone call
4.7	January 21, 2020	AFN [redacted]	Enbridge representative emailed AFN representatives to provide information regarding the Project. Enbridge representative requested the AFN representative provide availability for an in-person meeting to discuss the Project.	January 21, 2020	AFN representative responded that they would provide some dates for a meeting.	4-5 and 4-6
4.8	February 19, 2020	AFN [redacted]	Enbridge representative followed up via email, inquiring about scheduling a meeting.	N/A	N/A	4-7
4.9	February 27, 2020	AFN [redacted]	Enbridge representative followed up via email and suggested various dates in March for a meeting.	February 27 and February 28, 2020	AFN representatives responded and agreed upon a preferred meeting date.	4-8

Line Item	Date of Engagement	Name of Community and Contact	Description of Engagement Activity	Date of Response	Response and Issue Resolution (if applicable)	Attachment No.
4.10	February 28, 2020	AFN [redacted]	Enbridge representative responded suggesting a specific meeting time.	February 28, 2020	AFN representative accepted and confirmed the proposed meeting time.	4-8
4.11	February 28, 2020	AFN [redacted]	Enbridge representative sent Project update summary, draft Environmental Report (ER) Amendment, and Notice of Project Change. Enbridge asked that feedback from the community be provided by Friday March 27, 2020.	N/A	N/A	4-9
4.12	March 13, 2020	AFN [redacted]	Enbridge representative emailed the AFN representatives to inform them that Enbridge has issued a travel ban across North America due to the COVID-19 virus and stated that, as a result, their upcoming meeting would have to be postponed.	N/A	N/A	4-8
4.13	March 13, 2020	AFN [redacted]	Enbridge representative called the AFN Chief subsequent to the March 13 email confirming that their upcoming in-person meeting would have to be postponed due to a corporate travel ban. The AFN Chief understood and both parties agreed that it would be great to reschedule lunch in the near future. The Enbridge representative also mentioned that at their in-person meeting they would be discussing a change to the Project scope. The AFN Chief did not express any concerns and thanked Enbridge for the call.	N/A	N/A	N/A – phone call
5.1	March 8, 2019	Curve Lake First Nation ("CLFN") [redacted]	Enbridge representative sent a notification package that included an overview of the Project and details regarding the open houses. Enbridge requested a meeting with the community to provide them with an overview of the Project and gather information about any potential impacts the Project may have on their nation.	March 20, 2019	CLFN provided a letter acknowledging receipt of the Project notification, confirmed the Project is in the Traditional Territory of CLFN, and requested ongoing Project updates.	5-1 and 5-2
5.2	April 9, 2019	CLFN	Enbridge representative spoke with CLFN's Lands Resources Consultation Liaison regarding the Project. The Enbridge representative explained that she would like to opportunity to meet with the community to provide an overview of the Project and discuss the archaeological field work coming up in the near future. The CLFN representative welcomed the opportunity to meet with Enbridge and suggested a meeting date of April 26.	N/A	N/A	N/A – phone call
5.3	April 10, 2019	CLFN [redacted]	CLFN representative confirmed the meeting date of April 26.	N/A	N/A	5-3
5.4	April 26, 2019	CLFN	An Enbridge representative met with CLFN regarding the Project. The Enbridge representative provided a copy of the Project slide deck outlining the purpose of the Project, a map of the proposed Project area, what hydrogen blending is, the similarities, advantages and differences between hydrogen and natural gas, the permits and approvals required for the Project, an overview of the environmental assessment and proposed Project timelines. A copy of the Stage 1 Archaeological Assessment report was also provided to CLFN during the in-person meeting.	N/A	N/A	N/A – in-person meeting
5.5	April 29, 2019	CLFN [redacted]	CLFN representative thanked the Enbridge representative for presenting at the meeting and provided an invoice for the filing fee.	May 2, 2019	Enbridge representative thanked the CLFN representative and noted that the invoice was submitted for processing.	5-4

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5.6	July 3, 2019	CLFN [redacted]	Enbridge representative provided notification of the public information session to be held on July 9, 2019.	July 4, 2019	CLFN representative acknowledged receipt of the email from Enbridge representative and stated they would be unable to attend the meeting. CLFN representative asked Enbridge representative about invoicing.	5-5 and 5-6
5.7	July 5, 2019	CLFN [redacted]	Enbridge representative provided responses to CLFN re: invoicing and stated they would be in touch at a later time about scheduling the Stage 2 archaeological fieldwork.	N/A	N/A	5-6
5.8	July 25, 2019	CLFN [redacted]	CLFN representative provided comments on the Archaeology Report. They attached an invoice for the review and an oral history to be included in the Historical Context section of the Archaeology Report.	July 26, 2019	Enbridge representative thanked CLFN representative for the review comments, stating they would pass the information along to the lead archaeologist, and indicated that the invoice had been processed.	5-7
5.9	August 15, 2019	CLFN [redacted]	Enbridge representative emailed CLFN representative to provide advance notice of upcoming Stage 2 archaeological fieldwork to be conducted in the first half of September and asked if CLFN would like to participate.	August 15, 2019	CLFN representative responded that they would like to be involved in the Stage 2 field work and asked that Enbridge provide further details when they become available.	5-8
5.10	October 3, 2019	CLFN [redacted]	Enbridge representative emailed CLFN representative stating that the archaeological fieldwork for Phase 2 of the Project was now being deferred to next year and that Enbridge would notify CLFN of new timelines for fieldwork when details become available. Enbridge representative also included a link to the Environmental Report on the Enbridge Gas website.	N/A	N/A	5-9
5.11	February 28, 2020	CLFN [redacted]	Enbridge representative sent Project update summary, draft ER Amendment, and Notice of Project Change. Enbridge asked that feedback from the community be provided by Friday March 27, 2020.	N/A	N/A	5-10
5.12	March 12, 2020	CLFN [redacted]	Enbridge representative emailed CLFN representatives thanking them for a meeting the previous day. As requested during the meeting, Enbridge provided the Stage 1 Archaeological Assessment (AA) for the Project and confirmed that they are seeking to submit the ER Amendment to the Ontario Pipeline Coordinating Committee (OPCC) by the end of March. Enbridge also confirmed no new archaeological assessments are required as a result of the proposed Project changes. As such, consistent with the Stage 1 AA from 2019, there was no Stage 2 field work required for the Project.	March 12, 2020	CLFN representative thanked Enbridge representative for coming to the community and requested the full archaeological report.	5-11
5.13	March 16, 2020	CLFN [redacted]	Enbridge representative inquired whether the 2 PDFs of the Stage 1 AA that were sent would suffice.	March 16, 2020	CLFN representative responded that they had only received one file that was a 26 page document with mapping and that they hadn't received the full report.	5-11
5.14	March 16, 2020	CLFN [redacted]	Enbridge representative re-sent the second attachment with the full report.	N/A	N/A	5-11
6.1	March 8, 2019	Hiawatha First Nation ("HFN") [redacted]	Enbridge representative sent a Project notification package to the HFN representative that included an overview of the Project and details regarding the open houses. Enbridge representative requested a meeting with the community to provide them with an overview of the Project and gather information about any potential impacts the Project may have on their nation.	N/A	N/A	6-1

Line Item	Date of Engagement	Name of Community and Contact	Description of Engagement Activity	Date of Response	Response and Issue Resolution (if applicable)	Attachment No.
6.2	April 9, 2019	HFN	Enbridge representative spoke with HFN's Lands and Resources Consultation representative regarding the Project. The Enbridge representative explained that she would like the opportunity to meet with the community to provide an overview of the Project and discuss the archaeological field work coming up in the near future. The HFN representative welcomed the opportunity to meet with Enbridge and suggested a meeting date of April 30.	N/A	N/A	N/A – phone call
6.3	April 30, 2019	HFN	An Enbridge representative met with HFN regarding the Project. The Enbridge representative provided a copy of the Project slide deck outlining the purpose of the Project, a map of the proposed Project area, what hydrogen blending is, the similarities, advantages and differences between hydrogen and natural gas, the permits and approvals required for the Project, an overview of the environmental assessment and proposed Project timelines. A copy of the Stage 1 Archaeological Assessment report was also provided to HFN during the in-person meeting. The HFN representative did not express any concerns regarding the Project and acknowledged that the proposed Project was in a residential area located in Markham.	N/A	N/A	N/A – in-person meeting
6.4	July 3, 2019	HFN [redacted]	Enbridge representative provided notification of the public information session to be held on July 9, 2019. Enbridge representative asked if HFN could meet the following week and stated they would call HFN representative the next day to discuss.	N/A	N/A	6-2
6.5	August 15, 2019	HFN [redacted]	Enbridge representative emailed HFN representative to provide advance notice of upcoming Stage 2 archaeological fieldwork to be conducted in the first half of September and asked if HFN would like to participate.	August 16, 2019	HFN representative responded that they could not determine whether they would be able to participate until the timeline for the archaeological fieldwork was firmed up.	6-3
6.6	October 3, 2019	HFN [redacted]	Enbridge representative emailed HFN representative stating that the archaeological fieldwork for Phase 2 of the Project was now being deferred to next year and that Enbridge would notify HFN of new timelines for fieldwork when details become available. Enbridge representative also included a link to the Environmental Report on the Enbridge Gas website.	N/A	N/A	6-4
6.7	March 6, 2020	HFN [redacted]	Enbridge representative reached out via email to set up a meeting to provide some updates regarding the Project and suggested a couple of potential meeting dates. Enbridge representative attached a copy of the Notice of Project Change and draft ER Amendment outlining the proposed changes to the Project and offered capacity funding to help support document review.	March 9, 2020	HFN representative responded that the proposed meeting dates would not work.	6-5
6.8	March 9, 2020	HFN [redacted]	Enbridge representative called HFN representative to discuss potential meeting dates. Both parties agreed on a meeting date and time for the following week.	N/A	N/A	N/A – phone call
6.9	March 13, 2020	HFN [redacted]	Enbridge representative called the HFN representative and left a voice message to let them know that Enbridge had instituted a travel ban for all employees across North America due to the COVD-19 virus and, as a result, their meeting scheduled for the following week could be conducted via teleconference instead of in-person. Enbridge representative requested a return call to confirm if this was possible.	N/A	N/A	N/A – phone call
6.10	March 16, 2020	HFN [redacted]	HFN representative emailed Enbridge representative stating that HFN has cancelled all meetings, travel and programs until after April 6.	March 16, 2020	Enbridge representative responded confirming Enbridge has done the same. Enbridge representative stated they had left a voice message for HFN representative the previous week in regard to conducting the meeting via conference call instead and was wondering if that would work for the HFN representative.	6-6

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6.11	March 17, 2020	HFN [redacted]	Enbridge representative called HFN representative and left a voice message asking if the HFN representative would be available to participate in a telephone discussion in the afternoon or anytime during the week. Enbridge representative requested a call back.	N/A	N/A	N/A – phone call

ATTACHMENTS
(1 – MNCFN)

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

[redacted]@enbridge.com> Fri, Mar 8, 2019 at 3:39 PM
To: [redacted]@mncfn.ca)" [redacted]@mncfn.ca>
Cc: "[redacted]@ontario.ca)" [redacted]@ontario.ca>

Hi [redacted]

I'm emailing to provide some advance materials about our proposed Power to Gas Pipeline Project in the City of Markham. Please find attached the Project Notification letter, Notice of Commencement, map of the proposed location and a copy of the Duty to Consult letter issued by the Ministry of Energy, Northern Development & Mines for your information and reference.

Please don't hesitate to contact me with any questions you may have regarding the proposed project.

I look forward to connecting with you soon.

[redacted]
Sr. Advisor, Community Engagement, Eastern Region

Public Affairs and Communications

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ENBRIDGE PIPELINES INC.
TEL: 416-753-6962 | CELL: 416-525-2497
2225 Sheppard Avenue East, Atria III, 17th Floor

North York, ON M2J 5C2

enbridge.com

Integrity. Safety. Respect.

4 attachments

MCFN Notification Letter_March 8.pdf

394K

EGI-LCEP-NOC_Mar-2019_Admail.pdf
543K

Fig1_ProjectLayout_Feb21.pdf
12427K

Power to Gas Delegation Letter.pdf
1560K

ENBRIDGE

DILLON CONSULTING

March 8, 2019

[redacted], Consultation Manager
Mississaugas of the Credit First Nation
2789 Mississauga Road, R.R. #6
Hagersville, ON N0A 1H0

RE: Enbridge Gas Inc. Low-Carbon Energy Project City of Markham, Ontario
Notice of Project

Dear [redacted]

Enbridge Gas Inc. (Enbridge) has retained Dillon Consulting Limited (Dillon) to undertake an environmental and cumulative effects assessment and route selection study for approximately 6.8 kilometers (km) of natural gas pipeline and associated facilities in Markham, Ontario. The project objective is to create a network supplying blended natural gas with a small amount of hydrogen gas within Enbridge's existing natural gas pipeline infrastructure (the Project). The study is being conducted in accordance with the Ontario Energy Board's (OEB) *Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition, August 2016*. Once the study is complete, Enbridge may apply to the OEB for approval to construct the new pipeline. If approved, construction would be completed in two phases in 2020 and 2021.

Enbridge has an operating electrolyzer at its Training and Operations Centre located at 101 Honda Boulevard in Markham, Ontario. The electrolyzer converts surplus electricity into hydrogen gas and oxygen. The hydrogen gas can have multiple uses. Enbridge is proposing to blend a low concentration of hydrogen (up to 2% by volume) into an isolated area of the gas distribution network in an effort to reduce greenhouse emissions. This blended gas will remain within Enbridge's natural gas specifications. It can be utilized in the same way traditional natural gas is used, for example, to heat homes and water. As is the case with any other project, Enbridge will take all necessary measures to ensure that the safety of the gas distribution system is maintained at all times.

A Preliminary Preferred Route (PPR) for the proposed natural gas pipeline has been identified. The PPR follows portions of Woodbine Ave., as well as existing residential roads located in subdivisions, generally located south of Honda Blvd. and north of Highway 7 in the City of Markham. Phase 1 of the Project includes the installation of approximately 1 km of nominal pipe size (NPS) 6-inch steel Extra High Pressure (XHP) natural gas pipe, 250 m of NPS 6-inch steel High Pressure (HP) pipe and 75 m of NPS 8-inch Intermediate Pressure (IP) polyethylene (PE) natural gas pipeline. Phase 2 of

Continued . . .

51 Breithaupt Street
Suite 200
Kitchener, Ontario
Canada
N2H 5G5
Telephone
519.571.9833
Fax
519.571.7424

the Project is comprised of multiple segments of pipeline which will convey blended hydrogen and natural gas, and includes the installation of 1.2 km of NPS 8-inch IP PE pipe, 2.9 km of NPS 8-inch and NPS 6-inch IP PE pipe, 350 m of NPS 6-inch IP PE pipe, 60 m of NPS 6-inch IP PE pipe, 10 m of NPS 4-inch IP PE pipe, 350 m of NPS 4-inch IP PE pipe, and 600 m of NPS 2-inch IP PE pipe. An alternative route is also being considered as part of the study, and is located in the same general area as the PPR. Locations requiring both temporary and permanent disconnection points of gas pipelines have been identified as well for both routes. A map showing both the PPR and alternative pipeline route is enclosed (**Figure 1**).

In order to undertake a successful consultation program, Indigenous engagement will play a key role in the Project. As noted in the attached Notice of Study Commencement, Enbridge will be hosting Open House meetings as part of the study.

As part of the initial phase of the study, we are collecting information on the natural environment, archaeological features and socio-economic features for both the PPR and alternative route described above. Examples of data being collected include information on terrestrial and aquatic vegetation and wildlife, archaeological and heritage resources, community parks and picnic areas, community facilities, nature trails, bus routes and other utilities such as water, sewage, industrial and commercial utilities.

Enbridge is committed to meaningful engagement with Indigenous groups and the satisfaction of the duty to consult. Enbridge looks forward to engaging with your Nation to ensure your community's interests are being represented. Your Nation is invited to provide comments regarding the proposed project. Specifically, Enbridge is seeking information about any potential impacts that the project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts.

We invite your community to be involved in the engagement and consultation process. Kindly indicate whether your community is interested in participating in the engagement activities on or before **March 31, 2019.** If you are unable to respond by the above date and are intending to do so, please provide an alternative date for when the Project Team may expect a response.

Enbridge would also be interested in meeting with your Nation to share project related information should you wish. Alternatively, please advise if you do not wish to meet individually but would prefer to be kept informed of the project.

On behalf of the Project Team, thank you in advance for your consideration regarding the initial phases of the project. Please do not hesitate to contact me with any questions you may have.

Continued . . .

Sincerely,

[redacted]

[redacted]
Sr. Advisor, Community Engagement
Enbridge Gas Inc.
O: 416-753-6962
C: 416-525-2497
[redacted]@enbridge.com

Encls. Notice of Study Commencement and Open House
Figure 1 – Project Layout and Location
MOENDM Delegation Letter

PROPOSED ENBRIDGE LOW-CARBON ENERGY PROJECT
NOTICE OF STUDY COMMENCEMENT AND OPEN HOUSE
CITY OF MARKHAM, ONTARIO
ENBRIDGE GAS INC.

The Study

Enbridge Gas Inc. (Enbridge) has retained Dillon Consulting Limited (Dillon) to begin an environmental and route selection study for approximately 6.8 kilometers (km) of natural gas pipeline and associated facilities. The objective of the project is to blend a small amount of hydrogen gas into our existing natural gas network, to reduce greenhouse gas emissions. Enbridge operates a facility which converts surplus electrical energy to hydrogen gas, which would be injected into the existing natural gas network. The blended gas would be distributed within the area outlined on the map below. Once the study is complete, Enbridge may apply to the Ontario Energy Board (OEB) for approval to construct the new pipeline. If approved, construction may begin in 2020.

The preferred route for Phase 1 of the project would involve the installation of approximately 1,325 m of 6-inch and 8-inch pipe primarily along Woodbine Ave. and Honda Blvd., ending at Enbridge's Technology and Operations Centre. Phase 2 of the project would involve multiple pipeline segments of various lengths and sizes ranging from 2-inch to 8-inch pipe along Victoria Square Blvd., Woodbine Ave., Rodick Rd., Prince Regent St., Major Mackenzie Dr. E, Village Pkwy., Elgin Mills, Honda Blvd., and Victoria Square Blvd.

An alternative route is also being considered as part of the study. The alternative route for Phase 1 of the project would involve the installation of 450 m of 6-inch pipe along Victoria Square Blvd. and an unnamed street. Phase 2 of the project will involve multiple pipeline segments of various lengths and sizes ranging from 6-inch to 8-inch pipe along Honda Blvd., Bishop's Gate, Livante Ct., Helford St., Prince of Wales Dr., Duke of York St., Woodbine Ave., Betty Roman Blvd., Markland St., and Calvert Rd. The preliminary preferred and alternative routes are identified on the map below.

The Process

The study is being conducted in accordance with the OEB's Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario. The study will review the need and justification for the pipeline, describe the natural and socio-economic environment, evaluate the potential facilities from a social and environmental perspective, outline safety measures, and describe appropriate measures for impact mitigation and monitoring.

Invitation to the Community

Stakeholder consultation is a key component of this study. Members of the general public, agencies, Indigenous communities and interest group representatives are invited to participate in the study. We will be hosting Open Houses to provide you with an opportunity to review the project and provide input. Details on the Open Houses are as follows:

Location: Monte Carlo Inn (8990 Woodbine Ave., Markham)
Date: March 19, 2019 (Tuesday)
Time: 5 PM to 8 PM

Location: Enbridge Technology & Operations Centre
(101 Honda Blvd., Markham)
Date: March 23, 2019 (Saturday)
Time: 9 AM to 12 PM
Free pancake breakfast will be served!

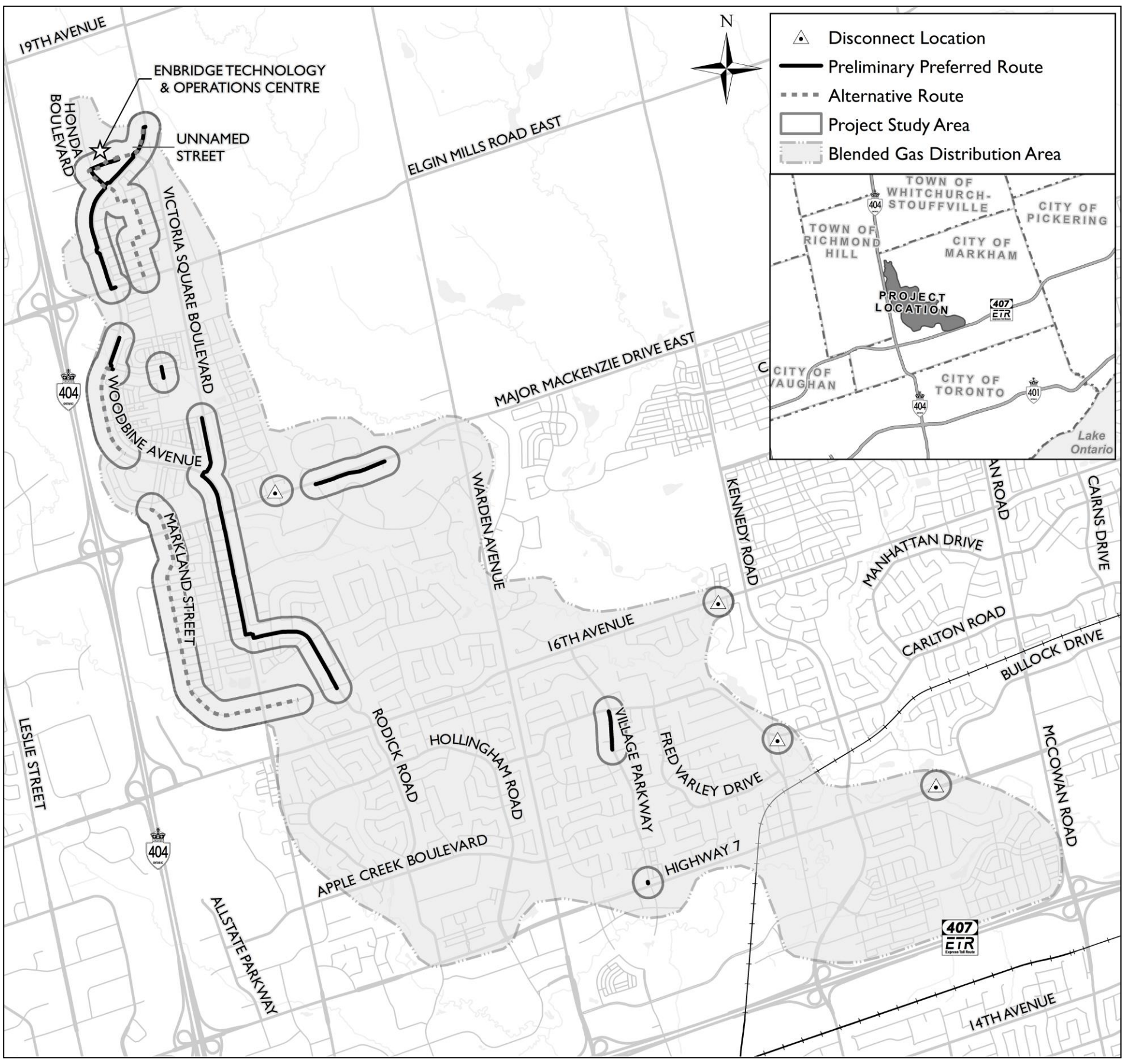
Win an Ecobee (valued at $300)

Enter for a chance to win an Ecobee smart thermostat at one of the Open Houses.

Representatives from Enbridge and Dillon will be in attendance to discuss the project and answer questions. Your input will be used to confirm the preferred route and create mitigation plans to be implemented during construction. If you are interested in participating, or would like to provide comments, please come to one of the Open Houses or contact one of the individuals listed as soon as possible. For more information about the proposed project and hydrogen blending, please visit http://enbridgegas.com/LowCarbonEnergyProject.

Tanya Turk
Sr Environmental Advisor
Enbridge Gas Inc.
101 Honda Blvd., Markham, ON L6C 0M6
(416) 495-3103
tanya.turk@enbridge.com

Tristan Lefler
Environmental Assessment Project Manager
Dillon Consulting Limited
51 Breithaupt St., Suite 200, Kitchener, ON
N2H 5G5
(519) 571-9833
LowCarbonEnergyEA@dillon.ca



ENBRIDGE

ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

PROJECT LAYOUT

FIGURE 1

- Disconnect Location
- Preliminary Preferred Route
- Alternative Route
- Rail
- Project Study Area
- Blended Gas Distribution Area
- Municipal Boundary



0 125 250 500 m

SCALE 1:28,000

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: NT / TL
MAP PROJECTION: NAD 1983 UTM Zone 17N

DILLON CONSULTING

PROJECT: 18-9005

DATE: 2019-02-21

© The Regional Municipality of York

FILE LOCATION: I:\GIS\189005 - Enbridge Power2Gas\MXD\Fig1_ProjectLayout_Feb21.mxd

Ministry of Energy, Northern Development and Mines

77 Grenville Street
6th Floor
Toronto ON M7A 2C1

Tel: (416) 314-2599

Ministère de l'Énergie, Développement du Nord et Mines

77 rue Grenville
6e étage
Toronto ON M7A 2C1

Tél: (416) 314-2599

Ontario

Indigenous Energy Policy

VIA EMAIL

March 1, 2019

[redacted]
Technical Manager, Regulatory Applications
Enbridge Gas Distribution Inc.
500 Consumers Road
North York, Ontario M2J 1P8

Re: Power to Gas Pipeline Project

Dear [redacted]

Thank you for your email dated January 4, 2019 notifying the Ministry of Energy, Northern Development and Mines of Enbridge's proposal for the Power to Gas Pipeline Project and requesting clarification on Duty to Consult requirements.

We understand that Enbridge is proposing to construct approximately 6.8 kilometers of natural gas pipeline in the City of Markham to isolate a small portion of Enbridge's existing distribution system to ensure that only blended natural gas is utilized in that isolated section. The project is associated with Enbridge's operating electrolyzer at its Training and Operations Center at 101 Honda Boulevard in Markham. The project, as outlined in the project description from Enbridge, consists of two phases with varying diameter and length of pipeline.

Phase 1 of the project consists of approximately 750 meters of NPS 6 steel extra high-pressure natural gas pipeline. The expected route will begin approximately 40 meters south of 11182 Woodbine Avenue in Markham, that will travel south on Woodbine Avenue and turn west onto Honda Boulevard. The pipeline will terminate at the Training and Operating Centre. Phase 2 will require the construction of multiple segments of varying diameter and length of pipeline. These segments will be required to provide system support when the project is isolated from the rest of the distribution system. Phase 2 will originate at the Training and Operating Centre and terminate at Major Mackenzie Drive.

The Ministry has reviewed the information provided relative to its current understanding of the interests of First Nation and Métis communities in the area and has determined that it may have the potential to affect First Nation and Métis communities who hold or claim Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982.

As you are aware, the Government of Ontario (the "Crown") has a constitutional duty to consult and accommodate First Nation and Métis communities when Crown project approvals may lead to an appreciable adverse impact on established or asserted Aboriginal or treaty rights. While the legal duty to consult falls on the Crown, the Crown may delegate the day-to-day, procedural aspects of consultation to project proponents. The Ministry of the Energy, Northern Development and Mines is delegating the procedural aspects of consultation to Enbridge through this letter.

Based on the Crown's preliminary assessment of First Nation and Métis community rights and project impacts, the following Aboriginal communities should be consulted on the basis that they have or may have constitutionally protected Aboriginal or treaty rights that may be adversely affected by the Project:

Community	**Mailing Address**
Alderville First Nation	11696 Line Road 2 Roseneath, ON K0K 2X0
Curve Lake First Nation	22 Winookeedaa Road Curve Lake, ON K0L1R0
Hiawatha First Nation	123 Paudash Street Hiawatha, ON K9J 0E6
Huron Wendat First Nation *	255, place Chef Michel Laveau Wendake, QC G0A 4V0
Mississaugas of the Credit First Nation	2789 Mississauga Road R.R. #6 Hagersville, ON N0A 1H0
Mississaugas of Scugog Island First Nation	Administration Building 22521 Island Road Port Perry, ON L9L 1B6

Note: * interests are specific to archeological resources

This rights-based consultation list is based on information that is subject to change. First Nation and Métis communities may make new rights assertions at any time, and other developments (e.g. the discovery of Aboriginal archaeological sites) can occur that may require additional First Nation and/or Métis communities to be notified and/or consulted. If you become aware of potential rights impacts on communities that are not listed above at any stage of the consultation and approval process, kindly bring this to the attention of the Ministry with any supporting information regarding the claim. The Ministry will then assess whether it is necessary to include the community on the rights-based consultation list above.

It is the Ministry's expectation that Enbridge will communicate directly with the communities listed above, and that Enbridge will:

- Notify the communities that Enbridge has been delegated the procedural aspects of consultation by the Ministry of Energy, Northern Development and Mines on behalf of Ontario.
- Notify the communities that they may contact the Crown directly should they have any questions or concerns.
- Provide the communities with the following contact information should they wish to communicate directly with the Ministry:

  Raina Crasto
  Policy Advisor, Indigenous Energy Policy
  Ministry of Energy, Northern Development and Mines
  416-326-4571 / Raina.crasto@ontario.ca

- Please copy the Ministry contact when communicating the above information.

The Ministry relies on consultation conducted by proponents when it assesses the Crown's obligations and directs proponents during the regulatory process. Enbridge's responsibilities for procedural aspects of consultation include:

- Providing the Indigenous communities with timely notice of the project for the purposes of considering possible impacts on their Aboriginal and/or treaty rights;

- In that notice, clearly stating that Enbridge has been delegated the procedural aspects of consultation by the Ministry of Energy, Northern Development and Mines on behalf of Ontario for the project.

- Providing Indigenous communities with information about the project including anticipated impacts, and information on project timelines;

- Following up with the Indigenous communities to ensure they have received project information and that they are aware of the opportunity to express comments and concerns about the project;

- Explaining the regulatory and approval processes that apply to the project;

- Gathering information about how the project may adversely impact the relevant Aboriginal and/or treaty rights (for example, hunting, fishing) or sites of cultural significance (for example, burial grounds, archaeological sites);

- Considering the comments and concerns raised by Indigenous communities and providing responses;

- Where appropriate, discussing accommodation, including mitigation or other measures to address potential adverse impacts on Aboriginal and/or treaty rights;

- Where appropriate, developing and discussing with the Crown appropriate accommodation measures;
- Taking reasonable steps to foster positive relationships with the Indigenous communities;
- Bearing the reasonable costs associated with these procedural aspects of consultation; and
- Maintaining records of activities in relation to carrying out the delegated procedural aspects of consultation and providing information to the Ministry.

If you have any questions about this letter or require any additional information, please contact Raina Crasto at 416-326-4571 or Raina.crasto@ontario.ca

Sincerely,

[redacted]

A/Manager
Indigenous Energy Policy

C: Ontario Pipeline Coordinating Committee (OPCC)

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

1 message

[redacted]@enbridge.com> Thu, Mar 14, 2019 at 10:12 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]
Sent: Thursday, March 14, 2019 10:12 AM
To: [redacted]
Cc: [redacted]@ontario.ca)
Subject: RE: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

Good morning, [redacted]

April 24th in the morning works for me. 10:00 a.m. okay?

Sorry I missed you at the historical gathering....

Miigwetch,

[redacted]

From: [redacted]@mncfn.ca]
Sent: Wednesday, March 13, 2019 4:32 PM
To: [redacted]
Cc: [redacted]@ontario.ca)
Subject: [External] RE: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

Hi [redacted],

I'm sorry it took so long to get back to you. We would like to set up a meeting with you for this project. How does April 23rd or 24th look to you? Am or pm.

Miigwetch,

[redacted]

Consultation Manager

Department of Consultation and Accommodation

Mississaugas of the Credit First Nation

4065 Hwy 6 North

Hagersville, On.

N0A 1H0

Office - 905-768-4260

Cell – 289-527-6580

http://www.mncfn.ca

Facebook: Mississauga of the Credit First Nation

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Low Carbon Energy Project

3 messages

[redacted]@enbridge.com> Thu, Apr 25, 2019 at 10:26 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]@mncfn.ca]
Sent: Wednesday, April 24, 2019 1:29 PM
To: [redacted]
Cc: [redacted]
Subject: [External] Low Carbon Energy Project

Hi [redacted]

I meant to catch you before you left. We would like to set up a meeting with your technical people regarding the Low Carbon Energy Project. If they could do a technical presentation for us to better understand what exactly is happening and they can answer the questions better also, that would be great.

Miigwetch,

[redacted]

Consultation Manager

Department of Consultation and Accommodation

Mississaugas of the Credit First Nation

4065 Hwy 6 North

Hagersville, On.

N0A 1H0

Office - 905-768-4260

Cell – 289-527-6580

http://www.mncfn.ca

Facebook: Mississauga of the Credit First Nation

From: [redacted]
Sent: Thursday, April 25, 2019 10:26 AM
To: [redacted]
Cc: [redacted]
Subject: RE: Low Carbon Energy Project

Good morning [redacted]

I would be happy to arrange a meeting with one of the subject matter experts on this project. Can you provide me with some suggested dates and times?

In the meantime, below are the questions I wrote down during the meeting which I will provide responses to soon.

1. **How does the 2% hydrogen translate into impact (i.e. net benefit to the environment)? And how is the impact measured? (Caron, I'm assuming you are looking for tonnes of GHG/yr saved?)**
2. **How much water will be used?**
3. **Where does the water come from?**
4. **How much hydrogen is produced using one gallon of water?**
5. **Was there any regulatory oversight in the construction of the Electrolyzer and Hydrogen Tank? Or who regulates it?**
6. **Is there a regulatory body that oversees the composition of the natural gas we distribute?**
7. **What is the timeline for assessing the pilot project (i.e. when will decide that 2% is effective and decide to increase the percentage of hydrogen)?**
8. **What are the cost savings to Enbridge from replacing natural gas with hydrogen gas?**

If you have additional questions please let me know. I have also attached a link to a Power to Gas video that explains how Power to Gas works. Attached you will also find a copy of the slide deck, blending diagram and project map that we reviewed during the meeting yesterday for your information and reference.

https://www.youtube.com/watch?v=j6ktfz2R9fo

Megan, as discussed, the Stage 2 archaeological assessment will likely occur this summer but we don't have anything firmed up just yet. I will keep you posted once we have a better idea as to the timing of the field work. I will send you a copy of the Stage 1 Report shortly.

Thanks,

[redacted]

[redacted]
Sr. Advisor, Community Engagement, Eastern Region

Public Affairs and Communications

ENBRIDGE PIPELINES INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

Integrity. Safety. Respect.

[Quoted text hidden]

3 attachments

Project Map - Power to Gas.pdf
10419K

Power to Gas Blending Diagram.docx
345K

Power to Gas PPT_MCFN April 24.pdf
878K

LOW-CARBON ENERGY PRO ECT

ENBRIDGE

DILLON CONSULTING

N

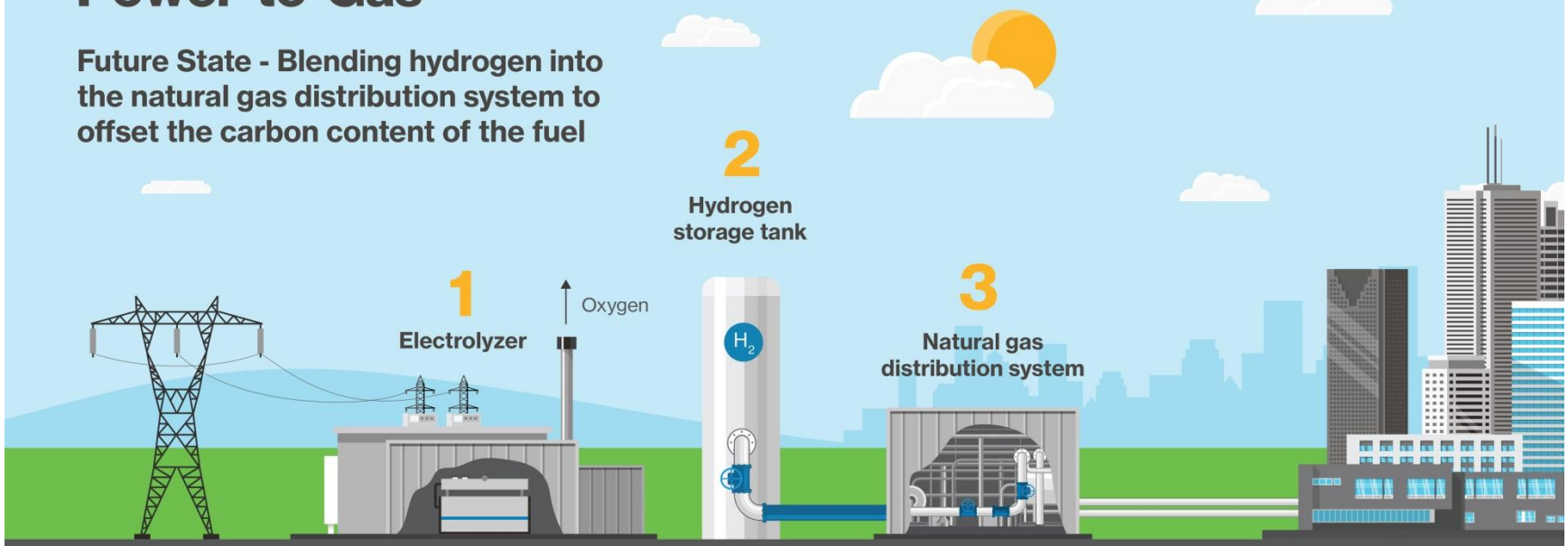
W E

S

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Power-to-Gas

Future State - Blending hydrogen into the natural gas distribution system to offset the carbon content of the fuel



1 Since electricity can't be stored, when there is a surplus, the electrolyzer takes electricity and uses it to split water into hydrogen and oxygen, while balancing the power grid at the same time.

2 The hydrogen that is produced is then stored.

3 Instead of converting the hydrogen back into electricity, the hydrogen may be blended into the natural gas distribution system at a pre-determined percentage, to reduce the carbon content of the gas.

4 A lower carbon gas is delivered to customers.

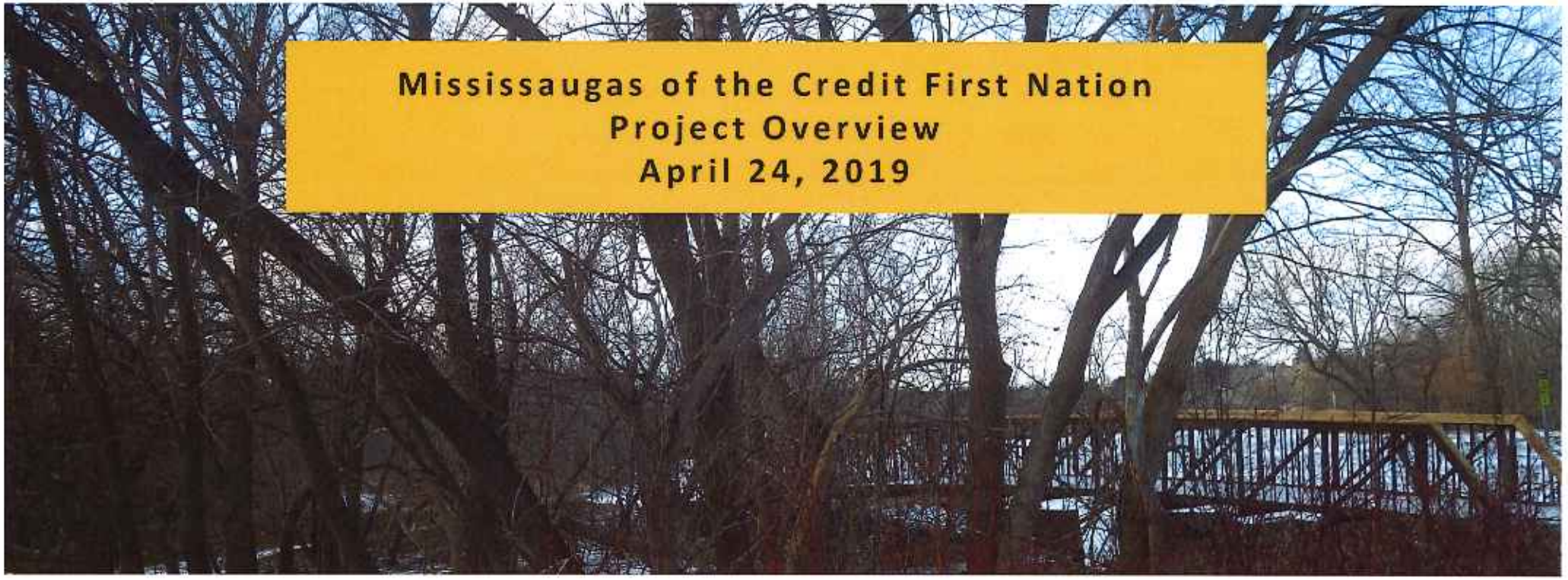
HYDROGENICS SHIFT POWER | ENERGIZE YOUR WORLD

ENBRIDGE Life Takes Energy

ENBRIDGE
Life Takes Energy

DILLON CONSULTING

Low-Carbon Energy Project



Purpose

Who we are

Enbridge provides safe and reliable delivery of natural gas to more than 3.7 million residential, commercial, and industrial customers across Ontario. Enbridge is committed to minimizing our impacts to the environment in a responsible manner.

Why are we here?

- To provide information about the Low-Carbon Energy Project.
- To involve the community, stakeholders and Indigenous groups and receive and consider your input.
- To present the Preliminary Preferred Route.
- To discuss construction and environmental mitigation.



Please sign in at the front desk and provide your input on the project by completing a questionnaire.

Project Introduction

What is being proposed?

Enbridge is proposing to blend a low concentration of hydrogen into an isolated area of the gas distribution network in an effort to reduce greenhouse emissions.

This would require the installation of 6.8 km of pipeline and associated infrastructure.



How would this work?

- Currently, Ontario produces electricity but sometimes there is more electricity made than used.
- We take the surplus electricity and produce hydrogen gas through Hydrogenics electrolysis technology.
- The hydrogen gas is stored and can be converted back into electricity when needed, or blended with natural gas as a less carbon-intensive energy source.

Hydrogen Blending



Hydrogen blending is when small amounts of hydrogen are injected into the natural gas grid.



The benefit for the environment will be a more "green" gas mixture with fewer carbon emissions.



About 2% of the blended gas will be hydrogen (by volume). The blended gas would remain within pipeline specifications. There would be no changes to the reliability of the service in the blended gas areas.



With such a small amount of hydrogen being introduced, customers should see no impact to their existing service compared to pure natural gas.

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ENBRIDGE Life Takes Energy

Hydrogen Compared to Natural Gas



Similar

- Both fuels are lighter than air and will rise and disperse when released into the atmosphere.
- Both fuel sources require proper handling for safe use, and are flammable and explosive under certain conditions.



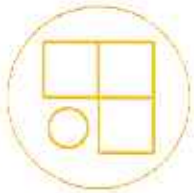
Well-known

- Hydrogen is used today in many manufacturing processes, for example for pharmaceuticals and foods like vegetable oil.



Advantage

- It is non-toxic and when used as a sole fuel it does not contribute to climate change.



Difference

- The hydrogen molecule is smaller than natural gas.
- Hydrogen burns more quickly.

DILLON CONSULTING

ENBRIDGE Life Takes Energy

Hydrogen Blending Safety

- Safety is Enbridge's top priority and one of its core values.
- We have applied rigorous safety standards to planning, design, development and construction.
- As we do with natural gas, using proper safety procedures and handling is just as important with hydrogen gas.
- This is not a new technology. Several facilities successfully operate in Europe, some for over a decade.
- We require approval from our regulators, the Ontario Energy Board and the Technical Standards and Safety Authority, before we can move ahead with this project.
- The smell of blended gas will maintain the distinct "rotten egg" smell like natural gas.

Pipeline Design and Safety

Pipeline Design

Our pipelines are designed to meet and/or exceed the regulations of the Canadian Standards Association (Z662 Oil and Gas Pipeline Systems) and the applicable regulations of the Technical Standards & Safety Association (TSSA).

Pipeline Safety and Integrity

We take many steps to ensure the safe, reliable operation of our network of natural gas pipelines, such as:

- Design, construct, and test our pipelines to meet or exceed requirements set by industry standards and regulatory authorities;
- Continuously monitor the entire network; and
- Perform regular field surveys to detect leaks and confirm corrosion prevention methods are working as intended.

Construction and Enbridge

Our construction work is temporary and transitory – once the pipe is laid, we restore the area to as close to pre-construction condition as possible.

We are committed to being respectful of community activities, regulations, and bylaws.

We have completed many similar pipeline construction projects.

We take great care when working in the community to minimize impacts, address concerns and achieve the highest standards of safety.

Pipeline construction projects strive to leave the smallest footprint possible.

1



2



3



4



Permits and Approvals

Enbridge must obtain approval from the Ontario Energy Board to move forward with construction. In addition, other permits and approvals that may be required are:

Agency	Permit/Approval
Toronto Region Conservation Authority	Permit to work within a Conservation Authority Regulated Area
Ministry of Natural Resources and Forestry and/or the Ministry of Environment, Conservation and Parks	Endangered Species Act (2007) Permit
Fisheries and Oceans Canada	Species at Risk Act (2002) Permit
Ministry of Tourism, Culture and Sport	Comment/Acceptance letter for archaeological and cultural heritage assessments
Municipal Permits	• Noise By-Law Exemption • Road Occupancy Permit • Permit to Injure or Destroy Trees

Environmental Assessment Process and Project Schedule

	Task	Proposed Timing
CONSULTATION THROUGHOUT	Routing study: identify study areas and assess alternative routes	January 2019
	Select Preliminary Preferred Route	January 2019
	Baseline data collection	January 2019
	Notice of Commencement and Public Open House	February 2019
	We are here → **Public Open Houses**	March 2019
	Confirm preferred route	March 2019
	Conduct effects and mitigation assessment on preferred route	March 2019
	Assessment of residual effects and cumulative effects assessment	March 2019
	Documentation: Environmental Report	April 2019
	Ontario Energy Board Submission	Summer 2019
	Phase 1 Construction (Tentative)* *pending OEB approval	April 2020 – September 2020
	Phase 2 Construction(Tentative)* *pending OEB approval	September 2020 – March 2021
	Post-construction monitoring	2020-2021

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Power to Gas Responses

2 messages

[redacted]@enbridge.com> Fri, May 3, 2019 at 10:13 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]@mncfn.ca]
Sent: Friday, May 03, 2019 9:03 AM
To: [redacted]
Subject: [External] RE: Power to Gas Responses

Thank you [redacted] for this.

Can you give a bit more detail on the 10% and what the plan could be if the 2% where increased.

Also is this a typo… CO2e?

[redacted]

Environmental & Regulatory Advisor

Department of Consultation & Accommodation

Mississaugas of the Credit First Nation

4065 Hwy 6

Hagersville, ON

N0A1H0

[redacted]@mncfn.ca

Tel: 905-768-4260

Cell: 905-979-3862

Web: http://www.mncfn.ca

Facebook: Mississaugas of the New Credit First Nation

This e-mail is intended only for the person or entity to which it is addressed. If you received this in error, please contact the sender and delete all copies of the e-mail together with any attachments.

From: [redacted]@enbridge.com]
Sent: Thursday, May 2, 2019 3:51 PM

To: [redacted]
Subject: Power to Gas Responses

Hi [redacted]

As promised, please find below the answers to your questions regarding Enbridge Gas' Power to Gas Project.

1. How does the 2% hydrogen translate into impact (i.e. net benefit to the environment)? And how is the impact measured? The purpose of the project is to reduce Enbridge's GHG emissions. For a blend of 2% by volume hydrogen, 0.663% of emissions due to natural gas are reduced. We anticipate approximately 625 tonnes of CO_2e could be offset annually (based on 2018 natural gas volumes used in the area). This is equal to the amount of GHG emissions of approximately 139 homes in a year (based on average yearly gas usage).
2. How much water will be used? Approximately 3-4 cubic meters per day.
3. Where does the water come from? As discussed during the meeting, the local municipality (Markham) supplies water via a metered connection.
4. How much hydrogen is produced using one gallon of water? 150 to 250 cubic meters per hour.
5. Was there any regulatory oversight in the construction of the Electrolyzer and Hydrogen Tank? Or who regulates it? Yes. The Electrolyzer is a propriety piece of equipment that goes into the plant and is subject to the respective codes and governing standards applicable. The hydrogen tanks are subject to the appropriate codes and standards and would be subject to Authorities Having Jurisdiction such as the TSSA, CSA ESA. Hydrogen is not a Carbon based energy carrier. The TSSA and the CSA and the ESA were main oversight bodies.
6. Is there a regulatory body that oversees the composition of the natural gas we distribute? As discussed during the meeting, Natural Gas in Ontario is regulated by the Ontario Energy Board.
7. What is the timeline for assessing the pilot project (i.e. when will decide that 2% is effective and decide to increase the percentage of hydrogen)? A 2 year engineering assessment was done before the Leave to Construct and the recommendation was up to 2% by volume. At this point there is no plans to go beyond the 2%.
8. What are the cost savings to Enbridge from replacing natural gas with hydrogen gas? The cost savings are in the reduction of carbon within the gas distribution system, this benefits all rate payers and is part of the Company's strategy to decarbonize the natural gas distribution system.

Caron: As promised, I will let you know if Enbridge plans to host another open house and will provide you with the details in the event you are interested and/or available to attend.

Please don't hesitate to reach out with any further questions you may have.

Thanks,

[redacted]

[redacted]
Sr. Advisor, Community Engagement, Eastern Region

Public Affairs and Communications

ENBRIDGE PIPELINES INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

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From: [redacted]
Sent: Friday, May 03, 2019 9:13 AM
To: [redacted]
Subject: RE: Power to Gas Responses

Hi [redacted],

I can confirm that are no plans to increase the Hydrogen to 10%. The project team has decided to keep it at 2%.

Yes, that's a typo.

Regards,

[redacted]

[Quoted text hidden]

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Gas Inc. Power to Gas Open House

[redacted]@enbridge.com> Fri, Jun 28, 2019 at 12:00 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

Begin forwarded message:

From: [redacted]@mncfn.ca>
Date: June 28, 2019 at 11:54:23 AM EDT
To: [redacted]@enbridge.com>
Cc: [redacted]@mncfn.ca>, [redacted]@mncfn.ca>
Subject: [External] RE: Enbridge Gas Inc. Power to Gas Open House

EXTERNAL: PLEASE PROCEED WITH CAUTION.
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Hi [redacted]

I am so sorry I must've over looked it. I did get the email with the answers to the questions we asked. I will get back to you regarding dates to meet with your technical people.

Thanks again [redacted]

From: [redacted]@enbridge.com]
Sent: Friday, June 28, 2019 9:48 AM
To: [redacted]
Subject: RE: Enbridge Gas Inc. Power to Gas Open House

H[redacted]

I sent you an email a while ago requesting some dates from you but I never heard back. Why don't you send me some suggested dates and I'll check their availability. Did you get a chance review the email I sent you with answers to your questions subsequent to our meeting regarding the Power to Gas Project?

Thanks,

[redacted]

From: [redacted]t@mncfn.ca]
Sent: Friday, June 28, 2019 9:43 AM
To: [redacted]
Subject: [External] RE: Enbridge Gas Inc. Power to Gas Open House

EXTERNAL: PLEASE PROCEED WITH CAUTION.
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H[redacted]

We were also looking for a meeting with the technical people to give us a break down on everything. Do you have an idea when that will happen?

Miigwetch,

[redacted]

Consultation Manager

Department of Consultation and Accommodation

Mississaugas of the Credit First Nation

4065 Hwy 6 North

Hagersville, On.

N0A 1H0

Office - 905-768-4260

Cell – 289-527-6580

http://www.mncfn.ca

Facebook: Mississauga of the Credit First Nation

From: [redacted]@enbridge.com]
Sent: Friday, June 28, 2019 9:24 AM
To: [redacted]

Cc: [redacted]
Subject: Enbridge Gas Inc. Power to Gas Open House

Hi [redacted]

I recall you mentioning that you would be interested in attending an open house regarding this proposed project should another one be made available. The project team has decided to organize another open house for July 9, 2019. The details are set out below:

Event: Hydrogen Blending Public Information Session

Place: Enbridge Training Building, 101 Honda Blvd., Markham, ON

Time: 5:00 p.m. – 7:00 p.m.

Please let me know if you are available to attend.

Have a great long weekend,

[redacted]

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

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DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

1 message

[redacted] [redacted]

To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

[redacted]
Sent: Wednesday, July 03, 2019 5:41 PM
To: [redacted]@mncfn.ca); [redacted]
Subject: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

Hi [redacted]

As a follow up to my earlier email regarding the Power to Gas Open House, please find attached an invitation, in both English and Mandarin, that was distributed to roughly 33,000 homes and businesses that live in the Project area (City of Markham). We'll also be running the invitation as an ad in the Markham Economist and Sun (July 4), and the Ming Pao (July 6). If you have any questions about the Project, or the Information Session, please don't hesitate to reach out to me. If you plan to attend on Tuesday, July 9, please let me know.

Thanks,

[redacted]

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

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July 2019 OpenHouse_v04.pdf
555K

You're Invited to an Information Session

Please join us for another information session about the proposed Low-Carbon Energy Project in Markham. Learn about hydrogen blending, why Enbridge Gas supports this technology, why it's good for our customers, and good for the environment.

Enbridge Gas is proposing a project to blend a small amount of hydrogen gas into our existing natural gas network, to reduce greenhouse gas emissions. Enbridge Gas operates a facility which converts electrical energy to hydrogen gas, which would be injected into the existing natural gas network if the project is approved.

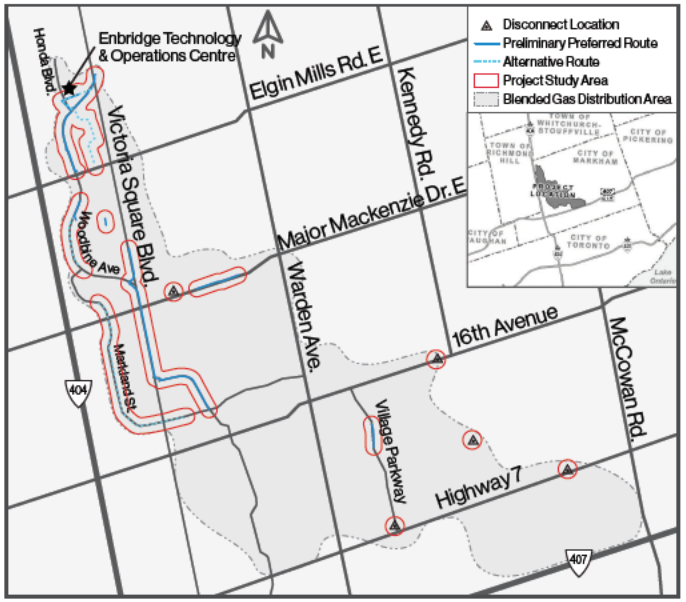
The blended gas would be distributed within the shaded area outlined on the map. As part of the project, Enbridge Gas would be installing approximately 1.3 km of pipe in phase one and approximately 5.5 km of pipe in phase two.

Hydrogen Blending Information Session

Date: Tuesday, July 9, 2019
Time: Drop in from 5-7 p.m.
Location: Enbridge Technology and Operations Centre
101 Honda Blvd, Markham, Ontario

For more information about the proposed project and hydrogen blending, please visit: **http://enbridgegas.com/LowCarbonEnergyProject**.

If you have any questions, please submit them to **LowCarbonEnergyEA@dillon.ca**.



Please visit us online:

enbridgegas.com **@enbridgegas**

If you have a natural gas emergency, please call: **1-866-763-5427**



ENBRIDGE
Life Takes Energy®

邀请您参加宣讲会

关于提案的万锦市低碳能源项目，我们将再次举办宣讲会，敬请参加。 了解氢气混合技术、为什么 Enbridge Gas 支持这种技术、为什么它对我们的顾客有好处、以及为什么它对环境有好处。

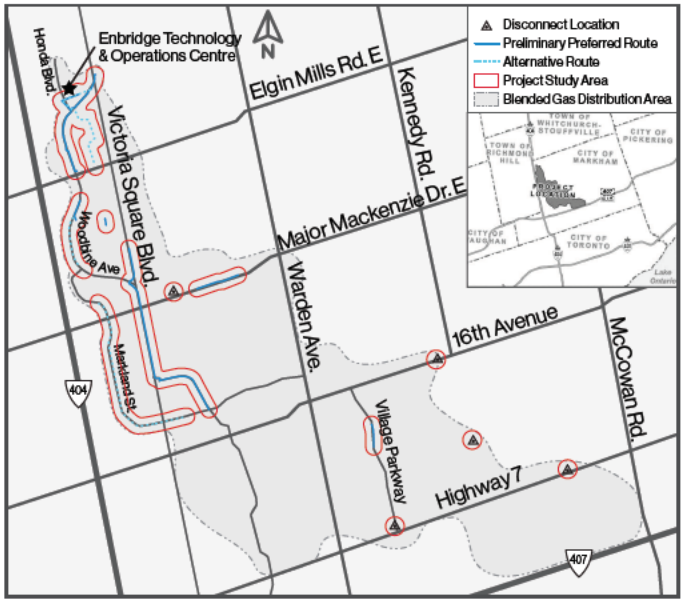
Enbridge Gas 提案了一个项目，将少量氢气混入我们的现有天然气管网，以减少温室气体排放。如果该项目得到批准，Enbridge Gas 有设施将电力转换为氢气，再将氢气注入现有天然气管网。

混合气体将在地图上所示区域内输配。作为该项目的一部分，Enbridge Gas 将在项目一期铺设约1.3公里的管道，项目二期铺设约5.5公里的管道。

氢气混合宣讲会

日期： 2019 年7月9日星期二
时间： 下午5点至7点间欢迎光临
地点： Enbridge Technology and Operations Centre
101 Honda Blvd, Markham, Ontario

请浏览 **http://enbridgegas.com/LowCarbonEnergyProject**，了解提案项目和氢气混合的更多信息。如果您有任何疑问，请将您的疑问提交至 **LowCarbonEnergyEA@dillon.ca**。



请访问我们的社交媒体：

enbridgegas.com **@enbridgegas**

如果您有天然气紧急情况，请致电 **1-866-763-5427**



ENBRIDGE
Life Takes Energy®

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

1 message

[redacted]@enbridge.com> Thu, Oct 3, 2019 at 10:56 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]@mncfn.ca>
Sent: Tuesday, July 16, 2019 3:16 PM
To: [redacted]@enbridge.com>
Subject: [External] RE: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

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Thanks Sonia for this information, unfortunately I was unable to attend.

[redacted] BES

Environmental & Regulatory Advisor

Department of Consultation & Accommodation

Mississaugas of the Credit First Nation

4065 Hwy 6

Hagersville, ON

N0A1H0

Caron.Smith@mncfn.ca

Tel: 905-768-4260

Cell: 905-979-3862

Web: http://www.mncfn.ca

Facebook: Mississaugas of the New Credit First Nation

This e-mail is intended only for the person or entity to which it is addressed. If you received this in error, please contact the sender and delete all copies of the e-mail together with any attachments.

From: [redacted]@enbridge.com]
Sent: Wednesday, July 3, 2019 5:41 PM
To: [redacted]
Subject: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

Hi [redacted]

As a follow up to my earlier email regarding the Power to Gas Open House, please find attached an invitation, in both English and Mandarin, that was distributed to roughly 33,000 homes and businesses that live in the Project area (City of Markham). We'll also be running the invitation as an ad in the Markham Economist and Sun (July 4), and the Ming Pao (July 6). If you have any questions about the Project, or the Information Session, please don't hesitate to reach out to me. If you plan to attend on Tuesday, July 9, please let me know.

Thanks,

[redacted]

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Gas Inc. Power to Gas Open House

1 message

[redacted]@enbridge.com> Thu, Jul 4, 2019 at 1:56 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]@mncfn.ca]
Sent: Thursday, July 04, 2019 1:09 PM
To: [redacted]
Subject: [External] RE: Enbridge Gas Inc. Power to Gas Open House

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Hi [redacted]

It looks like I am the only one interested in the science behind use of hydrogen for heat and power. Perhaps your technical people have some reading I could get from them regarding how it all works, the technical information. If I have any questions after that I will let you know. How does that sound?

Miigwetch

[redacted]

Consultation Manager

Department of Consultation and Accommodation

Mississaugas of the Credit First Nation

4065 Hwy 6 North

Hagersville, On.

N0A 1H0

Office - 905-768-4260

Cell – 289-527-6580

http://www.mncfn.ca

Facebook: Mississauga of the Credit First Nation

From: [redacted]@enbridge.com]
Sent: Friday, June 28, 2019 9:48 AM
To: [redacted]
Subject: RE: Enbridge Gas Inc. Power to Gas Open House

Hi [redacted]

I sent you an email a while ago requesting some dates from you but I never heard back. Why don't you send me some suggested dates and I'll check their availability. Did you get a chance review the email I sent you with answers to your questions subsequent to our meeting regarding the Power to Gas Project?

Thanks,

[redacted]

From: [redacted]@mncfn.ca]
Sent: Friday, June 28, 2019 9:43 AM
To: [redacted]
Subject: [External] RE: Enbridge Gas Inc. Power to Gas Open House

EXTERNAL: PLEASE PROCEED WITH CAUTION.
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Hi [redacted]

We were also looking for a meeting with the technical people to give us a break down on everything. Do you have an idea when that will happen?

Miigwetch,

[redacted]

Consultation Manager

Department of Consultation and Accommodation

Mississaugas of the Credit First Nation

4065 Hwy 6 North

Hagersville, On.

N0A 1H0

Office - 905-768-4260

Cell – 289-527-6580

http://www.mncfn.ca

Facebook: Mississauga of the Credit First Nation

From: [redacted]@enbridge.com]
Sent: Friday, June 28, 2019 9:24 AM
To: [redacted]
Cc: [redacted]
Subject: Enbridge Gas Inc. Power to Gas Open House

Hi [redacted]

I recall you mentioning that you would be interested in attending an open house regarding this proposed project should another one be made available. The project team has decided to organize another open house for July 9, 2019. The details are set out below:

Event: Hydrogen Blending Public Information Session

Place: Enbridge Training Building, 101 Honda Blvd., Markham, ON

Time: 5:00 p.m. – 7:00 p.m.

Please let me know if you are available to attend.

Have a great long weekend,

[redacted]

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

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Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Power to Gas Stage 2 Surveys

1 message

[redacted]@enbridge.com> Fri, Sep 13, 2019 at 11:28 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

-----Original Message-----
From: [redacted]@mncfn.ca]
Sent: Friday, September 13, 2019 11:28 AM
To: [redacted]
Subject: [External] RE: Power to Gas Stage 2 Surveys

EXTERNAL: PLEASE PROCEED WITH CAUTION.
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Thanks for the update, Sonia. Let me know when you proceed with Phase 2.

Best,
[redacted]

-----Original Message-----
From: [redacted]@enbridge.com]
Sent: Friday, September 13, 2019 11:24 AM
To: [redacted]@mncfn.ca>
Subject: RE: Power to Gas Stage 2 Surveys

Thanks for this, Megan. You bet me to the punch on this one. The Stage 2 archaeological assessment required for the Power to Gas is specific to phase 2 of the project that (as of recently) is now being deferred to next year. Based on the results of the Stage 1 AA that was already completed for both phases (one and two) of the project, a Stage 2 AA was not recommended for Phase 1 of the project but was recommended for Phase 2. Once we have project timelines established for phase 2 of the project, which will involve stage 2 AA work, I will be in touch with you again. In the meantime, I will keep this agreement on file to facilitate a speedy execution of the agreement when the time comes to resume this work.

Thank,
[redacted]

----Original Message-----
From: [redacted]@mncfn.ca]
Sent: Friday, September 13, 2019 10:34 AM
To: [redacted]
Subject: [External] RE: Power to Gas Stage 2 Surveys

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Hi [redacted]

Please find attached the partially executed FLR participation agreement. Please send back the final version with your signatures.

Thanks,

[redacted]

-----Original Message-----
From: [redacted]
Sent: Monday, September 9, 2019 9:07 AM
To: [redacted]@enbridge.com>
Subject: RE: Power to Gas Stage 2 Surveys

Hi [redacted]

The contract looks good to proceed. Unfortunately, Mark is on vacation this week. He sometimes comes by the office and I may be able to grab his signature, but otherwise it will have to wait until next week.

With this being the case, perhaps you may want to have it executed on your end first?

Thanks,
[redacted]

-----Original Message-----
From: [redacted]@enbridge.com]
Sent: Friday, September 6, 2019 5:44 PM
To: [redacted]@mncfn.ca>
Subject: RE: Power to Gas Stage 2 Surveys

Hi [redacted]

As a follow up to the Power to Gas Project, we are planning to start the Stage 2 field work on Tuesday, September 17th. We haven't firmed up the specific details (i.e., start time, meeting location etc.) just yet but I wanted to provide you with some advance notice for scheduling purposes.

I have attached a draft archaeological monitoring agreement (the same one we negotiated earlier this year) for your review and signature. Please don't hesitate to reach out with any questions you may have.

Have a great weekend.
[redacted]

-----Original Message-----
From: [redacted]@mncfn.ca]
Sent: Friday, August 30, 2019 9:31 AM
To: [redacted]
Subject: [External] RE: Power to Gas Stage 2 Surveys

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Yes, that works for us.

[redacted]

-----Original Message-----
From: [redacted]@enbridge.com]
Sent: Wednesday, August 28, 2019 4:51 PM
To: [redacted]s@mncfn.ca>
Subject: RE: Power to Gas Stage 2 Surveys

Agreed. I'll send you a draft copy of the same agreement we developed for Line 10. I'll simply remove the Line 10 Project name and replace it with Power to Gas Project. Does that work for you?

Regards,
[redacted]

-----Original Message-----

From: [redacted]@mncfn.ca]
Sent: Monday, August 19, 2019 11:44 AM
To: [redacted]
Subject: [External] RE: Power to Gas Stage 2 Surveys

EXTERNAL: PLEASE PROCEED WITH CAUTION.
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Hi [redacted]

MCFN will require an FLR for the upcoming assessment.

I'm catching up on things following my leave. If there is not yet an FLR participation agreement in place for this project, we will need one before fieldwork occurs.

Thank you,
[redacted]

-----Original Message-----
From: [redacted]@enbridge.com]
Sent: Thursday, August 15, 2019 5:55 AM
To: [redacted]@mncfn.ca>
Subject: Power to Gas Stage 2 Surveys

>> Hi [redacted]
>>
>> I hope you are doing well and enjoying the last bit of summer remaining. As a follow up to the Enbridge Power to Gas Project, I would like to provide you with some advance notice regarding the Stage 2 Archaeological assessment field work. Enbridge is planning to begin the field work sometime in the first half of September pending weather and successfully securing locates.
>>
>> I will be in touch a week prior to commencing the field work to confirm the details but in the meantime, can you please let me know if you are planning to send an MCFN monitor ?
>>
>> I look forward to hearing back from you at your earliest convenience.
>>
>> Miigwech,
>
>> [redacted]
>> Sr. Advisor, Municipal & Indigenous Affairs Enbridge Gas Inc

Subject: FW: Notice of Change - LCEP

From: [redacted]@mncfn.ca>
Sent: Friday, February 28, 2020 11:07 AM
To: [redacted]@enbridge.com>
Subject: [External] RE: Notice of Change - LCEP

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Mino kizhep[redacted]

My car is currently stuck in my driveway but I managed to do that after work yesterday. I really need to invest in a truck again.

We will have a look at the change in the route and if we have any concerns I will let you know.

Miigwetch [redacted]

From: [redacted]@enbridge.com]
Sent: Thursday, February 27, 2020 3:37 PM
To: [redacted]
[redacted] [WARNING: ATTACHMENT UNSCANNED]Notice of Change - LCEP

Hi Fawn. Hope you got through the snowfall ok, it was pretty slow getting to work this morning. I'm connecting to let you know that there have been a couple of recommended changes to the Low Carbon Energy Project. I've included the cover letter, amended draft environmental report and notice of change for discussion and feedback. The main change is the decision to go from the preferred route to the alternate route; the rationale is provided in section 3.0 in the amended environmental report. The date for report back is March 27, 2020. If you have any questions or would like me to come out to meet regarding the project please do not hesitate to contact me.
Thanks Fawn.

Best,
[redacted]

Enbridge
400 Coventry Rd
Ottawa, ON K1K 2C7
Canada

February 28, 2020

Re: Notice of Project Change and Draft Environmental Report Amendment- Low Carbon Energy Project (LCEP)

Chief R. Stacey Laforme
Mississaugas of The Credit First Nation
2789 Mississauga Road R.R.#6,
Hagersville, ON
N0A 1H0

Dear Chief Laforme,

I am writing to advise you of a project change and draft Environmental Report Amendment on the proposed 2019 Low Carbon Energy Project (LCEP). Enbridge Gas Inc. (Enbridge) retained Dillon Consulting Limited (Dillon) to undertake an environmental and socio-economic effects assessment and amended report (Environmental Report) for the proposed Low Carbon Energy Project (the Project).

Enbridge filed a Leave-to-Construct (LTC) application with the Ontario Energy Board (OEB) on December 20, 2019. The application included the Environmental Report (completed in May 2019), as well as two Addendums. Addendum #1 was completed in September 2019 and addressed comments from the Toronto and Region Conservation Authority. Addendum #2 was completed in December 2019 and provided updated Project mapping depicting only Phase 1 of the Project, as Phase 2 was removed from the Project scope.

Since the completion of the Environmental Report and the Addendums, Enbridge has made changes to the scope of the Project that require additional study and review. As such, Dillon has prepared an Amendment to the Environmental Report (draft version enclosed), which documents the results of Dillon's review of Enbridge's proposed changes to the Project. These proposed Project changes include: (1) the selection of the Phase 1 Alternative Route as the new Preferred Route; and, (2) the addition of three small facilities on Enbridge owned property into the Environmental Report scope.

Mississaugas of The Credit First Nation is invited to provide comments in relation to this Project change. Specifically, Enbridge and Dillion are seeking information about any adverse impacts that the proposed project change may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts. Please send any comments to the attention of the undersigned, or by email to LowCarbonEnergyEA@dillon.ca at your earliest convenience. If you require additional information, please do not hesitate to contact me. We would appreciate your shared knowledge or comments for consideration regarding this Project change by March 27, 2020.

If you have questions or concerns regarding the proposed Project change, please do not hesitate to contact me at any time. I appreciate your attention to this matter and look forward to our ongoing collaboration on this project.

Sincerely,

[redacted], Senior Advisor – Community and Indigenous Engagement
Enbridge Inc.
500 Consumers Road, North York ON M2J 1P8

Cell: 416 666 6759

Attached: Amendment to Environmental Report and Notice of Change

PROPOSED ENBRIDGE LOW-CARBON ENERGY PROJECT

NOTICE OF PROJECT CHANGE

CITY OF MARKHAM, ONTARIO

ENBRIDGE GAS INC.

Last year, Enbridge Gas Inc. (Enbridge) retained Dillon Consulting Limited (Dillon) to undertake a route selection and environmental and socio-economic impact study and report (Environmental Report) for the proposed Low-Carbon Energy Project (the Project). The Environmental Report was completed according to the Ontario Energy Board (OEB) Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016). Following completion of the Environmental Report, Enbridge provided additional information regarding the Project in two Addendums. Addendum #1 was completed in September 2019 and addressed comments from the Toronto and Region Conservation Authority. Addendum #2 was completed in December 2019 and provided updated Project mapping depicting only Phase 1 of the Project, as Phase 2 was removed from the Project scope. Enbridge filed a Leave-to-Construct (LTC) application with the OEB on December 20, 2019.

Since the completion of the Environmental Report and the Addendums, Enbridge has made changes to the scope of the Project that require additional study and review. Dillon is preparing an Amendment to the Environmental Report (the Amendment) in consideration of Enbridge's proposed changes to the Project. These proposed Project changes include: (1) the selection of the Phase 1 Alternative Route as the Preferred Route; and, (2) the addition of three small facilities on Enbridge-owned property at 101 Honda Boulevard into the Environmental Report scope. The objective of the Amendment is to determine if there are any additional potential environmental or socio-economic impacts as a result of the proposed changes that were not captured in the assessment already completed in the Environmental Report.

The Amendment to the Environmental Report is planned to be completed by March 31, 2020, after which Enbridge will file the Amendment with the OEB. The OEB's review and approval is required before the Project can proceed. If approved, construction of the Project is currently anticipated to begin by January 2021, at the earliest.

Stakeholder consultation and Indigenous engagement continue to be key components of the Project. We are interested in hearing from you regarding issues/concerns that you may have in relation to the proposed changes to this Project. Please provide feedback to the Project email at LowCarbonEnergyEA@dillon.ca or by contacting one of the individuals listed in this Notice by March 22, 2020.

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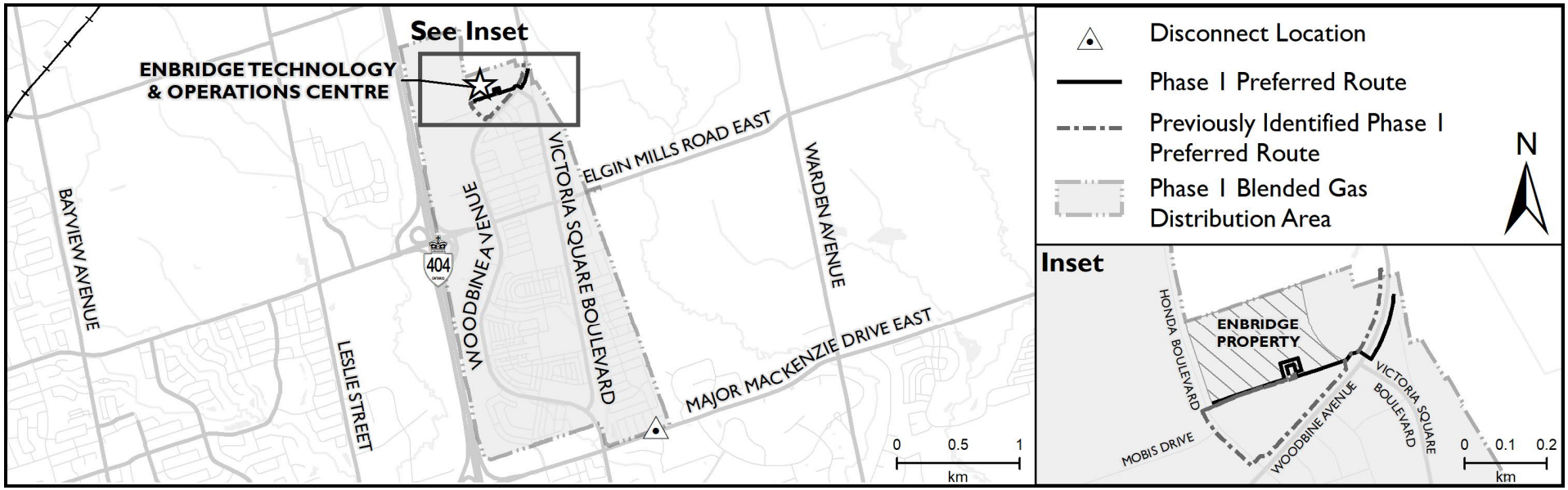
Project website:
https://www.enbridgegas.com/about-us.
Click on the "Projects" tab and select "Low-Carbon Energy Project"



Enbridge Gas Inc.
Low-Carbon Energy Project
Environmental Report Amendment

Prepared for:

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101 Honda Blvd.
Markham, Ontario
L6C 0M6

Prepared by:

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February 2020



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LIST OF APPENDICES

A Consultation Update – Summary and Logs

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LIST OF ACRONYMS AND ABBREVIATIONS

Dillon	Dillon Consulting Limited
ECA	Environmental Compliance Approval
Enbridge	Enbridge Gas Inc.
HP	high pressure
IP	intermediate pressure
km	kilometre(s)
LTC	Leave-to-Construct
m	metre(s)
MECP	Ontario Ministry of the Environment, Conservation and Parks
N/A	not applicable
NPS	nominal pipe size
OEB	Ontario Energy Board
psig	pounds per square inch gauge
the Project	Low-Carbon Energy Project
TOC	Technology and Operations Centre

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1.0 INTRODUCTION

Enbridge Gas Inc. (Enbridge) retained Dillon Consulting Limited (Dillon) to undertake a route selection and environmental and socio-economic impact study and report (Environmental Report) for the proposed Low-Carbon Energy Project (the Project).

The Environmental Report (Dillon, 2019a) for the Project was completed in May 2019. Following completion of the Environmental Report, Enbridge provided additional information regarding the Project in two Addendums. Addendum #1 (Dillon, 2019b) was completed in September 2019 and addressed comments from the Toronto and Region Conservation Authority. Addendum #2 (Dillon, 2019c) was completed in December 2019 and provided updated Project mapping depicting only Phase 1 of the Project, as Phase 2 was removed from the Project scope. Enbridge filed a Leave-to-Construct (LTC) application for the Project with the Ontario Energy Board (OEB) on December 20, 2019.

Since the completion of the Environmental Report and the Addendums (Dillon, 2019a; 2019b; 2019c), Enbridge has made changes to the scope of the Project that require additional study and review. This report constitutes an Amendment to the Environmental Report (Amendment #1) and provides the results of Dillon's review of Enbridge's proposed changes to the Project. These proposed Project changes include:

- The selection of the Phase 1 Alternative Route as the Preferred Route; and,
- The addition of three small facilities on Enbridge-owned property into the Environmental Report scope.

The proposed Project changes are illustrated on **Figure 1** and are described in further detail in **Section 3**.

The objective of this Amendment is to determine if there are any additional potential environmental or socio-economic impacts as a result of the proposed changes that were not captured in the assessment already provided in the Environmental Report.

Stakeholder consultation and Indigenous engagement continue to be key components of the study. This draft Amendment is being shared with interested parties to identify any issues and concerns related to the proposed Project changes. Following the provision of this draft Amendment, interested parties are invited to provide comments, questions, or concerns to the Project Team within a 30-day period. This feedback will be documented as a component of the final Amendment that will be filed with the OEB (see **Section 6** for further details).

This Amendment is to be read in conjunction with the Environmental Report and the Addendums (Dillon, 2019a; 2019b; 2019c). Information from the Environmental Report and the Addendums is not repeated in this Amendment, except where required to provide context.

The Environmental Report and the Addendums are available for review by interested stakeholders on the Enbridge Project website at <https://www.enbridgegas.com/about-us>. Click on the "**Projects**" tab and select "**Low-Carbon Energy Project**".

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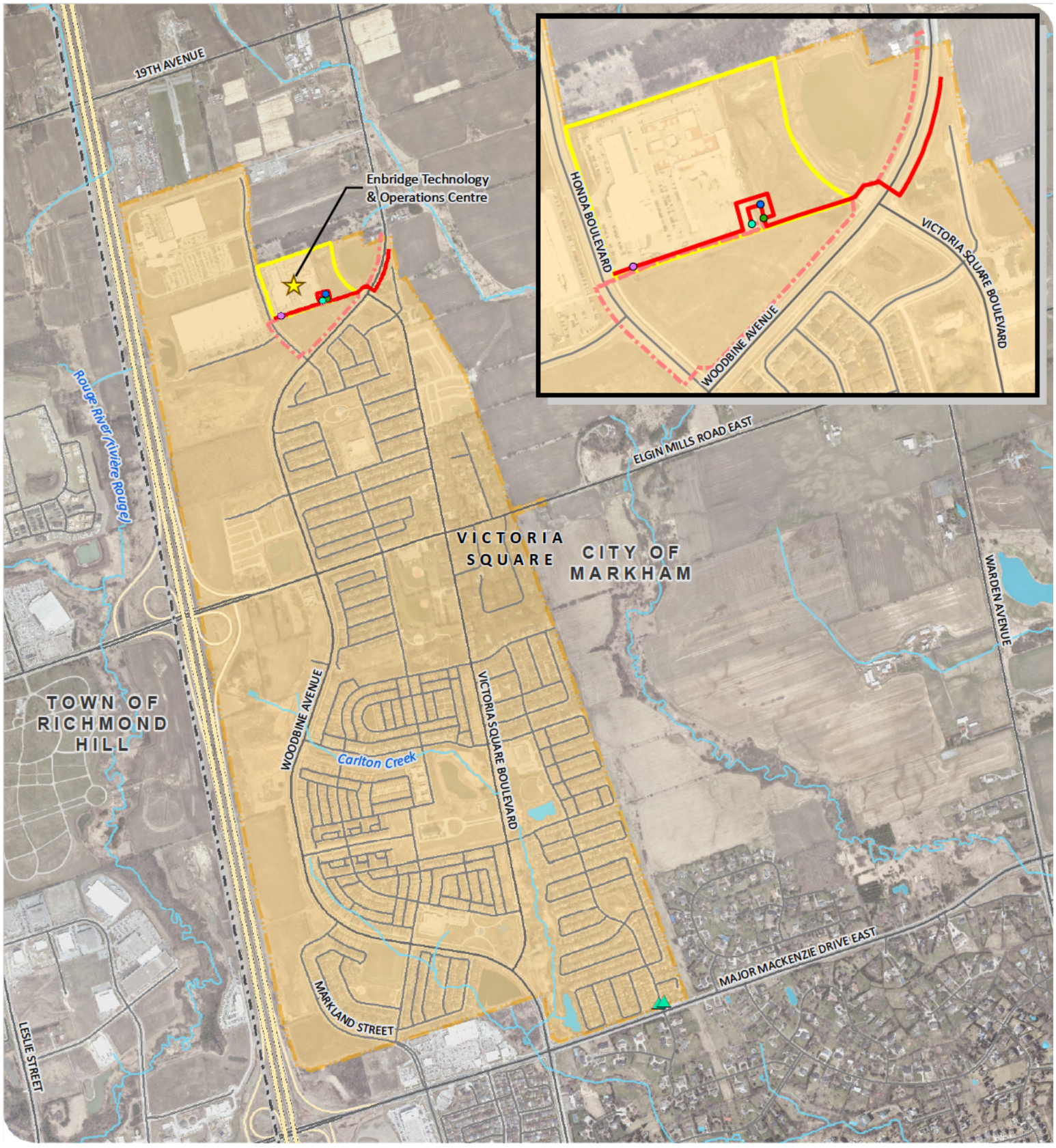

ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

PROPOSED PIPELINE ROUTES

FIGURE 1

- Phase 1 Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Phase 1 Blended Gas Distribution Area
- Enbridge Property
- Watercourse
- Waterbody
- Municipal Boundary

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION
MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:20,000

0 0.125 0.25 0.5 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12

2.0 PROJECT BACKGROUND

The Project was initially proposed as a two-phase installation of approximately 6.7 kilometres (km) of natural gas pipeline in the City of Markham. Addendum #2 to the Environmental Report resulted in the removal of Phase 2 from the Project scope. As such, the Project scope was reduced to Phase 1 only, which would involve the installation of approximately 1.3 km of nominal pipe size (NPS) 6-inch and NPS 8-inch pipe, primarily along Woodbine Avenue and Honda Boulevard, ending at Enbridge's Technology and Operations Centre (see **Figure 1**).

The objective of the Project is to blend a small amount of hydrogen gas (up to 2% by volume) into a small, carefully selected portion of Enbridge's existing natural gas network in order to reduce greenhouse gas emissions. An affiliate of Enbridge Gas Inc. operates a Power-to-Gas facility at the Technology and Operations Centre, which uses surplus electricity to 'split' water molecules into hydrogen and oxygen using electrolyzer technology. The hydrogen gas would be injected into the existing natural gas network and blended gas would be distributed to the Victoria Square neighbourhood, as illustrated on **Figure 1**.

The Environmental Report (Dillon, 2019a) was completed by Dillon in May 2019 and conforms to the OEB *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition* (2016).

The Environmental Report involved undertaking an inventory of physical, natural and socio-economic features within identified Study Areas (see Section 3, Physical, Natural and Socio-Economic Environment Setting in the Environmental Report). Potential alternative routes were identified and then evaluated against one another to select Preferred Routes for each Project Phase. The route selection evaluation process is detailed in Section 5 of the Environmental Report. Public involvement played an important role in this process.

In accordance with the OEB Guidelines, Enbridge carried out a comprehensive stakeholder consultation program to consult and communicate with federal, provincial, and municipal government agencies, Indigenous communities, directly and indirectly affected landowners, residents, and interested members of the public. The stakeholder consultation program methods and results are detailed in Section 4 of the Environmental Report.

Potential environmental and socio-economic impacts and associated mitigation measures are detailed in Section 6 of the Environmental Report. Mitigation measures were recommended to avoid or reduce potential negative impacts to environmental and socio-economic features. Based on the original Project scope and the adoption of mitigation measures recommended in the Environmental Report, Dillon did not predict any long-term impacts from the construction and operation of the Project.

Following the completion of the Environmental Report in May 2019, Enbridge has revised the scope of the Project as detailed in **Section 3**.

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3.0 PROPOSED PROJECT CHANGES

Enbridge is no longer proposing to construct the Phase 1 Preferred Route identified in the Environmental Report. A slight variation of the Phase 1 Alternative Route has now been identified as the Preferred Route (see **Figure 1**).

3.1 RATIONALE

The following provides the rationale for the proposed Project changes. Enbridge has identified these proposed changes as a result of the ongoing detailed engineering design process, the acquisition of new land adjacent to Enbridge's existing Technology and Operations Centre (TOC) property at 101 Honda Boulevard, and stakeholder consultation.

Proceeding with the Phase 1 Preferred Route as described in the Environmental Report would have resulted in added congestion within the TOC Operations Compound, with added safety concerns. The Operations Compound currently has live traffic from operational vehicles, and it houses the Power-to-Gas facilities, the refuelling facilities for compressed natural gas vehicles, and an inventory of materials to support raw material for operations, which are accessed multiple times per day. As part of the long-term plan for the TOC, Enbridge recently acquired new land adjacent to the TOC property, which will now better accommodate the hydrogen-blending facilities required for the Project.

At the Project open houses held in 2019, concerns were raised regarding disruptions to the community due to construction along Woodbine Avenue, including traffic congestion, noise, dust, and accessibility. The new Preferred Route addresses construction concerns, as it results in a reduced duration of construction on Woodbine Avenue, thereby reducing effects such as traffic disruptions dust, and noise. In addition, selecting the new Preferred Route would further add efficiencies to the Project as it would reduce the length of the pipe needed by approximately 40%, resulting in a reduced cost for the Project. Hosting the facilities in the new location also enhances safety at the current site as it reduces the impact of construction and has the added benefit of eliminating the need for construction on Honda Boulevard.

3.2 DESCRIPTION OF THE NEW PREFERRED ROUTE

The new Preferred Route would consist of the installation of approximately 755 metres (m) of new pipeline, including approximately 25 m of NPS 8-inch intermediate pressure (IP) plastic pipe, 380 m of NPS 6-inch extra high pressure (HP) steel pipe, and 350 m of NPS 6-inch HP steel pipe.

The new Preferred Route would begin at a tie-in point along an existing Enbridge pipeline located on the east side of Woodbine Avenue, approximately 300 m northeast of the Enbridge Technology and Operations Centre. It would travel south to the intersection of Woodbine Avenue and Victoria Square Boulevard where it would then turn west and cross under Woodbine Avenue and continue along the southern edge of the Enbridge property at 101 Honda Boulevard. The pipeline would be connected to the proposed hydrogen-blending facilities on the Enbridge property and would continue west to Honda Boulevard where it would tie into another existing Enbridge pipeline (see **Figure 1**).

3.3 DESCRIPTION OF PROPOSED HYDROGEN-BLENDING FACILITIES

The facilities described here are a component of the current LTC application to the OEB that was submitted in December 2020, however, they were not within the scope of the Environmental Report at that time. Their new proposed location has resulted in them being added to the scope of the Environmental Report, and thus they are being assessed in this Amendment.

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The proposed Hydrogen Station and Hydrogen Blending Station, as well as a Remote Terminal Unit (RTU) building, will be located on a concrete pad within a fenced and gravelled compound on Enbridge's existing property at 101 Honda Boulevard. The purpose of this facility is to regulate the pressures of the natural gas and hydrogen prior to mixing and controlling the amount of hydrogen that is injected based on the measured flow of natural gas. The fenced compound will measure approximately 13 m × 25 m and the maximum height of the buildings will be 3.5 m.

The proposed District Station will also be located on Enbridge's existing property at 101 Honda Boulevard and will be nested inside an aluminum box measuring approximately 2 m × 2 m × 2 m. The purpose of the District Station is to reduce the gas pressure from the HP (175 psig) steel pipeline to the IP (55 psig) plastic pipeline for distribution.

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4.0 STUDY PROCESS AND PROJECT SETTING

Section 2 of the Environmental Report describes the study methods used in the Environmental Report, as well as the objectives and methods of stakeholder and Indigenous consultation. The same methods are applied in this Amendment.

Section 3 of the Environmental Report describes the environmental and socio-economic setting of the Project. There is no change to the setting information as a result of the proposed Project changes described in this Amendment, as the location of the Project remains the same (see **Figure 2** and **Figure 3** for mapped natural environment and socio-economic features, respectively). The footprint of the new Preferred Route and proposed hydrogen-blending facilities was covered by desktop and field studies conducted for the Environmental Report. Similarly, the Study Area identified for the Project (120 m buffer on each side of the proposed route for a total width of 240 m) remains the same as identified in the Environmental Report (see **Figure 4**).

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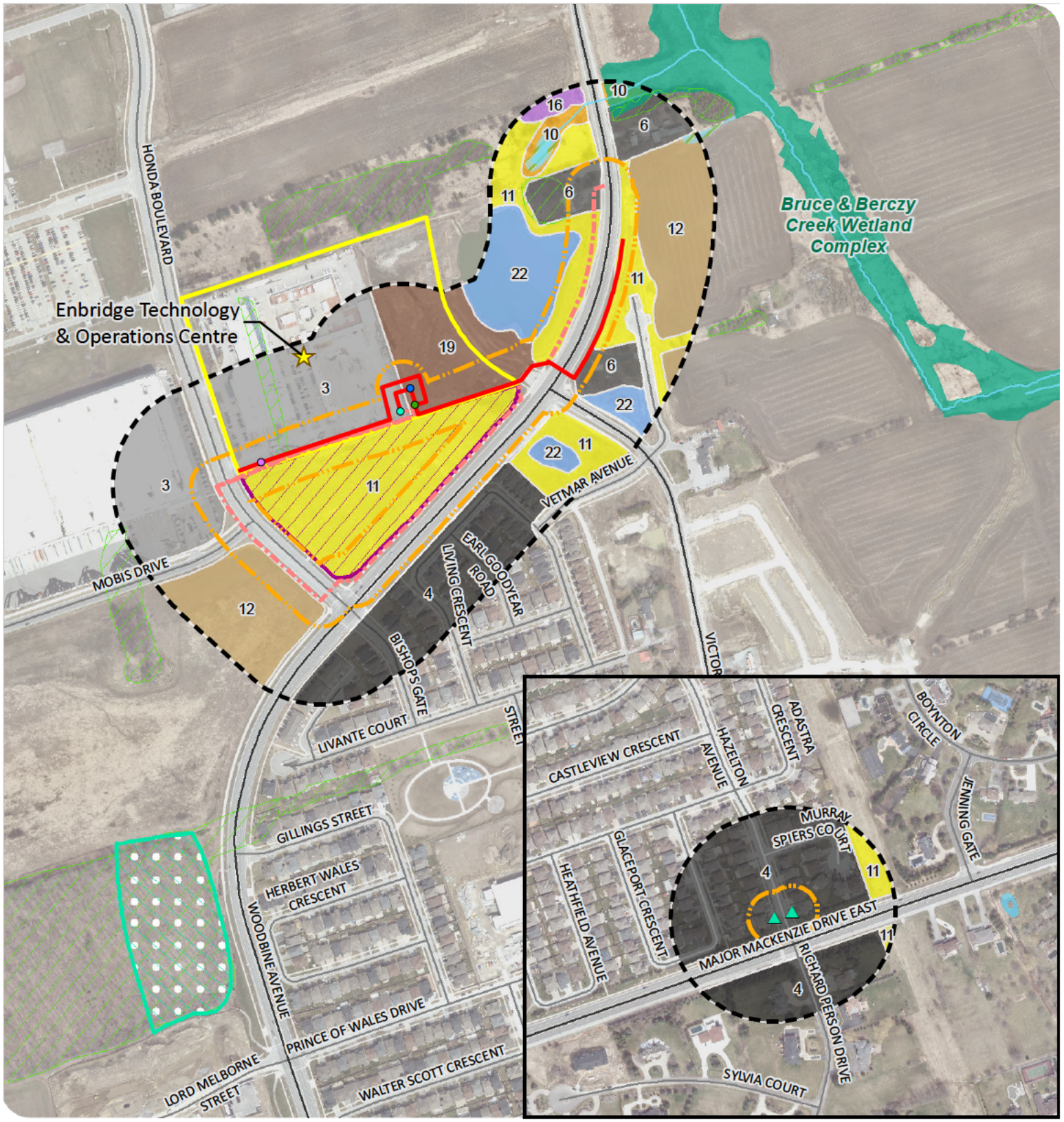

ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

NATURAL ENVIRONMENT FEATURES

FIGURE 2

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Study Area (120 m)
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody
- Unevaluated Wetland
- Provincially Significant Wetland
- Wooded Area (MNRF)
- Candidate Habitat Species of Conservation Concern
- Candidate SAR Bat Habitat and Significant Wildlife for Bat Maternity Colonies
- Potential Grassland Breeding Bird Habitat

Ecological Land Classification

- 3. CVC: Commercial and Institutional
- 4. CVR_1: Low Density Residential
- 6. CVR_4: Rural Property
- 10. MAM: Meadow Marsh
- 11. MEM: Mixed Meadow
- 12. OAGM1: Annual Row Crop
- 16. THD: Deciduous Thicket
- 19. Disturbed Ground
- 22. Stormwater Management Facility

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N
FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:6,000

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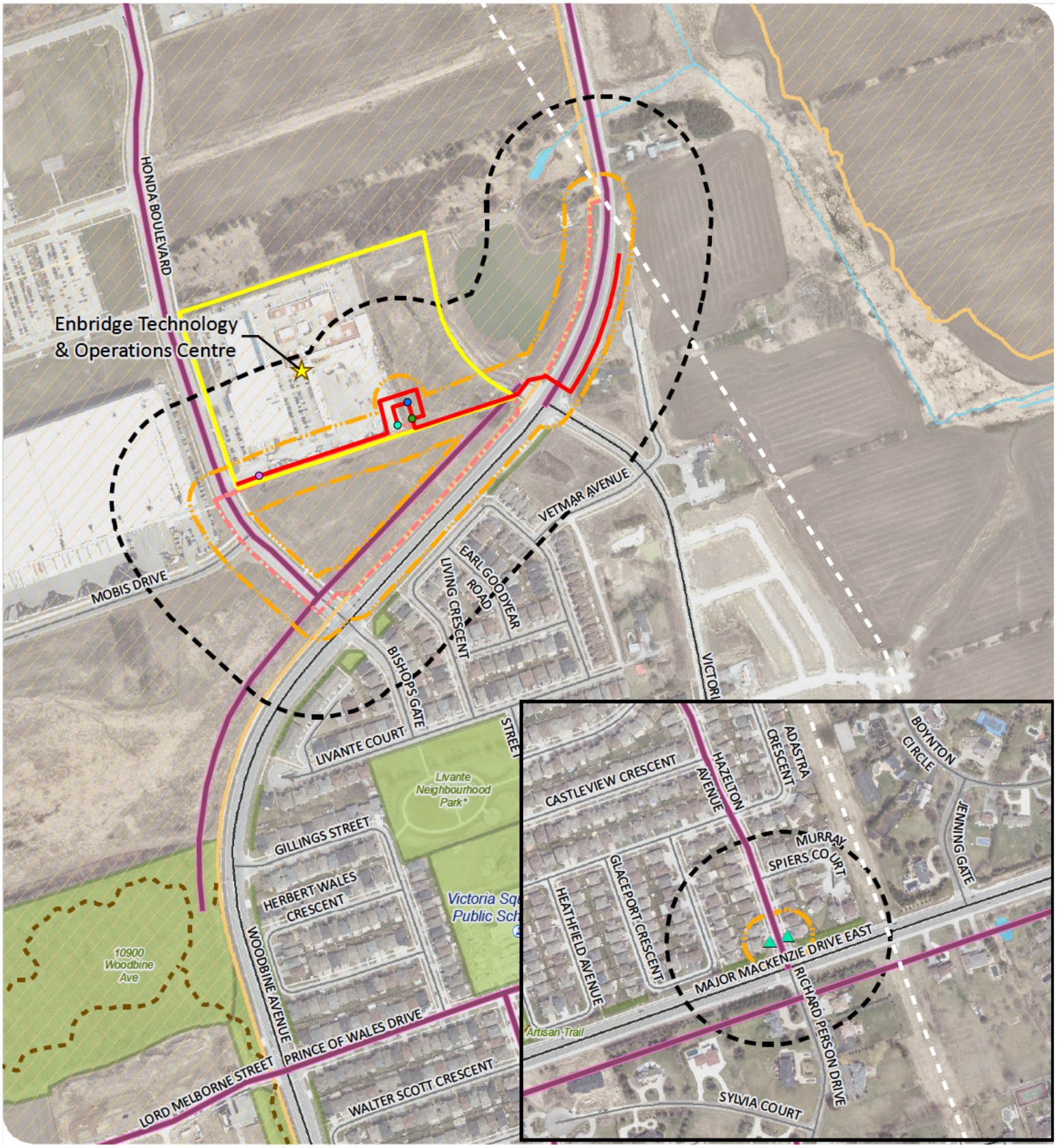
PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12



ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

SOCIO-ECONOMIC FEATURES

FIGURE 3

ENBRIDGE

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Study Area (120 m)
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody
- Educational Facility
- Hydro Line
- Trail
- Bicycle Route
- Business Park
- Park

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MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

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MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N
FILE LOCATION: I:\GIS\189005 - Enbridge

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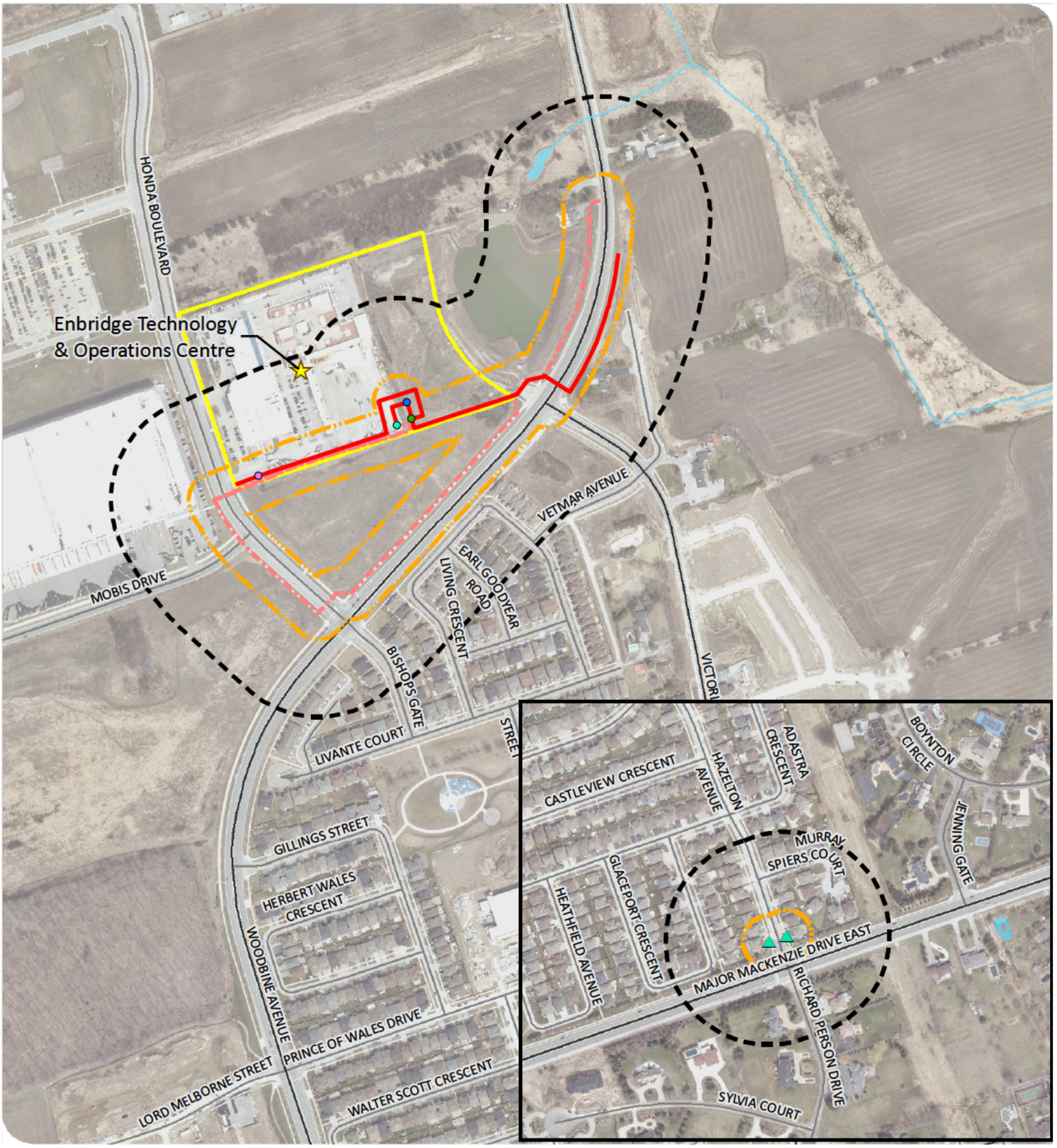
PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12



ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

STUDY AREAS
FIGURE 4

ENBRIDGE

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Study Area (120 m)
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody

DILLON CONSULTING

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FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:6,000

0 0.04 0.08 0.16 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12

5.0 POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

Section 6 of the Environmental Report includes a detailed mitigation strategy based on potential impacts of the Project. This Amendment assesses the potential for previously unassessed/new impacts as a result of the proposed Project changes, and, where necessary, recommends additional mitigation measures. Select mitigation measures are illustrated on **Figure 5**.

This Amendment also considers potential changes in cumulative effects. Proposed developments within 1 km of the Project are listed in Section 7.3 of the Environmental Report, and additional developments identified by the Toronto and Region Conservation Authority are listed in Addendum #1. These proposed developments were reviewed to identify any potential changes to cumulative Project interactions as a result of the proposed Project changes.

5.1 NEW PREFERRED ROUTE

Since the new Preferred Route was previously evaluated as the Phase 1 Alternative Route in the Environmental Report, a new effects assessment is not deemed warranted and, instead, a comparison of constraints between the previously identified Phase 1 Preferred Route and the new Preferred Route is provided in the following subsections.

Considering the criteria used to evaluate the Phase 1 Preferred and Alternative Routes in Section 5 of the Environmental Report, there are few differences between the proposed changes in this Amendment relative to the original Project scope included in the Environmental Report.

BIOPHYSICAL CONSTRAINTS

There are no previously unidentified biophysical constraints associated with the new Preferred Route.

Neither the previously identified Phase 1 Preferred Route, nor the new Preferred Route, cross any waterbodies, watercourses, wetlands/wetland complexes, Special Policy Areas (i.e., Greenbelt), or Areas of Natural or Scientific Interest.

The new Preferred Route is located entirely within municipal road rights-of-way and on previously disturbed land owned by Enbridge.

SOCIO-ECONOMIC CONSTRAINTS

There are no previously unidentified socio-economic constraints associated with the new Preferred Route.

The new Preferred Route will have fewer impacts on the neighbourhood/residences to the south of Woodbine Avenue, as it crosses to the west side of Woodbine Avenue just north of Victoria Square Boulevard, before the commencement of the housing subdivisions. In comparison, the previously identified Phase 1 Preferred Route would have run parallel to Woodbine Avenue from the north tie-in point southwest to Honda Boulevard and would have resulted in a larger footprint adjacent to the residential area.

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TECHNICAL CONSTRAINTS

There are no previously unidentified technical constraints associated with the new Preferred Route.

The new Preferred Route has a shorter overall length (approximately 755 m as opposed to 1.3 km) and has only one road crossing (in comparison to three crossings associated with the previously identified Phase 1 Preferred Route).

SUMMARY

The new Preferred Route does not result in any material change to the biophysical, socio-economic, or technical constraints considered in the Environmental Report. There are minor advantages to the new Preferred Route over the previously identified Phase 1 Preferred Route including lesser impact on nearby residences (south of Woodbine Avenue), shorter overall length, and fewer road crossings.

The assessment of potential Project effects, cumulative effects, and recommended mitigation measures presented in the Environmental Report in regard to the Phase 1 Preferred Route remains unchanged as a result of the new Preferred Route. Consequently, no additional mitigation measures beyond those recommended in the Environmental Report are required.

5.2 PROPOSED HYDROGEN-BLENDING FACILITIES

As noted in **Section 3**, the proposed hydrogen-blending facilities will be located entirely within Enbridge's property at 101 Honda Boulevard on previously disturbed land.

Given the setting of the proposed hydrogen-blending facilities in relation to the previously evaluated Phase 1 Preferred and Alternative Routes, there are no additional constraints (biophysical, socio-economic, or technical) anticipated as a result of the proposed hydrogen-blending facilities, as they are located within the Study Area that was reviewed and assessed in the Environmental Report.

Enbridge will be applying for an Environmental Compliance Approval (ECA) from the Ontario Ministry of the Environment, Conservation and Parks (MECP) that will permit air and noise emissions associated with the proposed hydrogen-blending facilities. As part of the ECA application to MECP, Enbridge will complete all necessary studies to determine the potential impact of the air and noise emissions from the proposed hydrogen-blending facilities.

The following subsections provide an assessment of potential effects and cumulative effects associated with the proposed hydrogen-blending facilities, and recommends additional mitigation measures, where necessary.

POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

Table 1 provides the assessment of potential impacts associated with the proposed hydrogen-blending facilities on the physical, natural, and socio-economic environment, as well as recommended mitigation measures.

The assessment provided in **Table 1** was only conducted for the proposed hydrogen-blending facilities described in this Amendment that were not previously evaluated in the Environmental Report. Effects and mitigation measures considered in the Environmental Report are not repeated below.

The proposed hydrogen-blending facilities do not result in a change to the effects assessment for most of the components; however, new potential interactions have been identified for the Physiography, Topography, and Surficial Geology; Atmospheric Environment; Noise; and Access Modifications and Restrictions components.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
PHYSICAL ENVIRONMENT			
Physiography, Topography, and Surficial Geology	***Construction*** The topography at the proposed facility sites is generally level and no unique physical features are present. The footprint of the proposed hydrogen-blending facilities will be graded, if required, and the facilities will be constructed on concrete pads. The area within the fenced compound will be gravelled. There is potential for a minor, localized change in topography as a result of grading and the installation of permanent components that may alter natural surface drainage patterns. ***Operation*** No effects on physiography, topography, and surficial geology are anticipated during operation of the proposed hydrogen-blending facilities.	• Pre-construction contours and drainage patterns should be re-established around the facilities, to the extent feasible, following construction. • Maintain site drainage during all phases of construction. Ensure construction activities do not cause the ponding of water or unintentional channelization of surface water flow. • Following the completion of construction activities, regrade areas with vehicle ruts or erosion gullies if required.	No significant net effect is anticipated following implementation of the recommended mitigation measures.
Groundwater	***Construction*** The proposed hydrogen-blending facilities will be located above-ground and no interaction with groundwater is anticipated during construction. ***Operation*** No effects on groundwater are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	Not applicable (N/A) – no new potential effects are anticipated.
Bedrock	***Construction*** The proposed hydrogen-blending facilities will be located above-ground and no interaction with bedrock is anticipated during construction. ***Operation*** No effects on bedrock are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Seismicity	***Construction*** No effects of seismic activity are anticipated during construction of the proposed hydrogen-blending facilities. ***Operation*** Impacts to the proposed hydrogen-blending facilities as a result of seismic activity are not anticipated at this time. The facilities will be designed in accordance with low to moderate levels of seismicity and comply with Canadian Geological Survey data and National Building Code minimum standards.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
NATURAL ENVIRONMENT			
Atmospheric Environment	***Construction*** Effects on the atmospheric environment from construction were previously assessed in the Environmental Report and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** There will be venting of natural gas for token relief at the proposed hydrogen-blending facilities during operations. Details on the venting will be provided in Enbridge's ECA permit application to MECP.	• For construction, no additional mitigation measures are recommended beyond the measures provided in the Environmental Report. • During operations, implement requirements/conditions of the ECA permit from MECP.	No significant net effect is anticipated following implementation of the recommended mitigation measures.
Wetlands	***Construction*** There are no wetlands located within 30 m of the proposed hydrogen-blending facilities and no interaction with wetlands is anticipated during construction. ***Operation*** No effects on wetlands are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Surface Water, Fish and Aquatic Habitat	***Construction*** There are no watercourses located within 30 m of the proposed hydrogen-blending facilities and no interaction with surface water, fish, and aquatic habitat is anticipated during construction. ***Operation*** No effects on surface water, fish, and aquatic habitat are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Terrestrial Habitat and Vegetation	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land adjacent to manicured lawns, sidewalks, and major roads (Woodbine Avenue and Honda Boulevard). Vegetation encountered will consist of common roadside vegetation of minor ecological value (vegetation capable of colonizing new roadside edges). Effects on terrestrial habitat and vegetation were previously assessed in the Environmental Report and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects on terrestrial habitat and vegetation are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Wildlife, Significant Wildlife Habitat and Species at Risk	***Construction*** No effects on wildlife, significant wildlife habitat, and species at risk are anticipated during construction of the proposed hydrogen-blending facilities. ***Operation*** No effects on wildlife, significant wildlife habitat, and species at risk are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Agriculture and Soils	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land adjacent to manicured lawns, sidewalks, and major roads (Woodbine Avenue and Honda Boulevard). Topsoil will be removed within the footprint of the facilities to accommodate site preparation and installation of the concrete pad. No interaction with agricultural soils is anticipated during construction. ***Operation*** No effects on agriculture and soils are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
SOCIO-ECONOMIC ENVIRONMENT			
Noise	***Construction*** Construction activities have the potential to disturb residents south of Woodbine Avenue in the Victoria Square neighbourhood. Construction-related noise effects are expected to be minor, temporary, and localized, particularly given the existing acoustic environment which includes regular traffic noise on Woodbine Avenue. ***Operation*** There may be some noise from the facilities during operations, however, this will be permitted through the MECP ECA process.	• For construction, no additional mitigation measures are recommended beyond the measures provided in the Environmental Report. • During operations, implement requirements/conditions of the ECA permit from MECP.	No significant net effect is anticipated following implementation of the recommended mitigation measures.
Access Modifications and Restrictions	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge, however, there is the potential that construction of the District Station may require some workspace that extends into the sidewalk along Honda Boulevard, temporarily disrupting pedestrian traffic. Access restrictions on road traffic are not anticipated. ***Operation*** No effects on access will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are recommended beyond the measures provided in the Environmental Report.	No significant net effect is anticipated following implementation of the recommended mitigation measures.

Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Traffic Disruption	***Construction*** Effects on traffic as a result of construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects on traffic will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Vibration	***Construction*** Effects of vibration during construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects of vibration will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Construction Waste	***Construction*** Effects of construction wastes were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects of construction waste will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Bentonite Slurry	***Construction*** Bentonite slurry is generated during trenchless pipeline construction and, therefore, will not be generated during facility construction. ***Operation*** No effects of bentonite slurry will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Hydrostatic Test Water	***Construction*** Hydrostatic test water is not required for construction of the proposed hydrogen-blending facilities. ***Operation*** No effects of hydrostatic test water will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Aesthetics	***Construction*** Effects on aesthetics as a result of construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** The proposed hydrogen-blending facilities will be permanent and will alter the current aesthetics of the area; however, in the context of the existing setting, including the existing Enbridge and Mobis Parts Canada buildings, and the presence of Woodbine Avenue, a busy thorough-fare immediately adjacent to the property, the change in aesthetics is anticipated to be minor.	• No additional mitigation measures are required.	No significant net effect is anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Existing and Planned Land Use	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge. As such, there will be no effects on existing and planned land use at the proposed facility locations. ***Operation*** No effects on existing and planned land use will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Existing Linear Infrastructure Corridors and Other Infrastructure	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge that is currently vacant. No interaction with existing linear infrastructure corridors and other infrastructure is anticipated. ***Operation*** No effects on existing linear infrastructure corridors and other infrastructure will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Population and Demographics	***Construction*** No effects on population and demographics will occur during construction of the proposed hydrogen-blending facilities. ***Operation*** No effects on population and demographics will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Economic Activities, Employment and Labour Force	***Construction*** Effects on economic activities, employment, and labour force as a result of construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects on economic activities, employment and labour force will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Tourism and Recreation	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge. No interaction with tourism and recreation is anticipated. ***Operation*** No effects on tourism and recreation will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Indigenous Communities	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge. No interaction with Indigenous communities is anticipated. ***Operation*** No effects on Indigenous communities will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Archaeological and Heritage Resources	***Construction*** The Stage 1 Archaeological Assessment conducted for the Project concluded that the Phase 1 Study Area be considered free of archaeological concern and no further assessment was recommended. As such, no interaction with archaeological and heritage resources is anticipated during construction. ***Operation*** No effects on archaeological and heritage resources will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Community Services	***Construction*** No effects on community services will occur during construction of the proposed hydrogen-blending facilities. ***Operation*** No effects on community services will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Contaminated Sites	***Construction*** There is limited potential to encounter contaminated sites during construction. Effects of contaminated sites discovered during construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects of contaminated sites will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Planning Policies	***Construction*** The Project will need to conform to applicable provincial and municipal planning policies. No new interactions have been identified as a result of the proposed hydrogen-blending facilities ***Operation*** No effects on planning policies will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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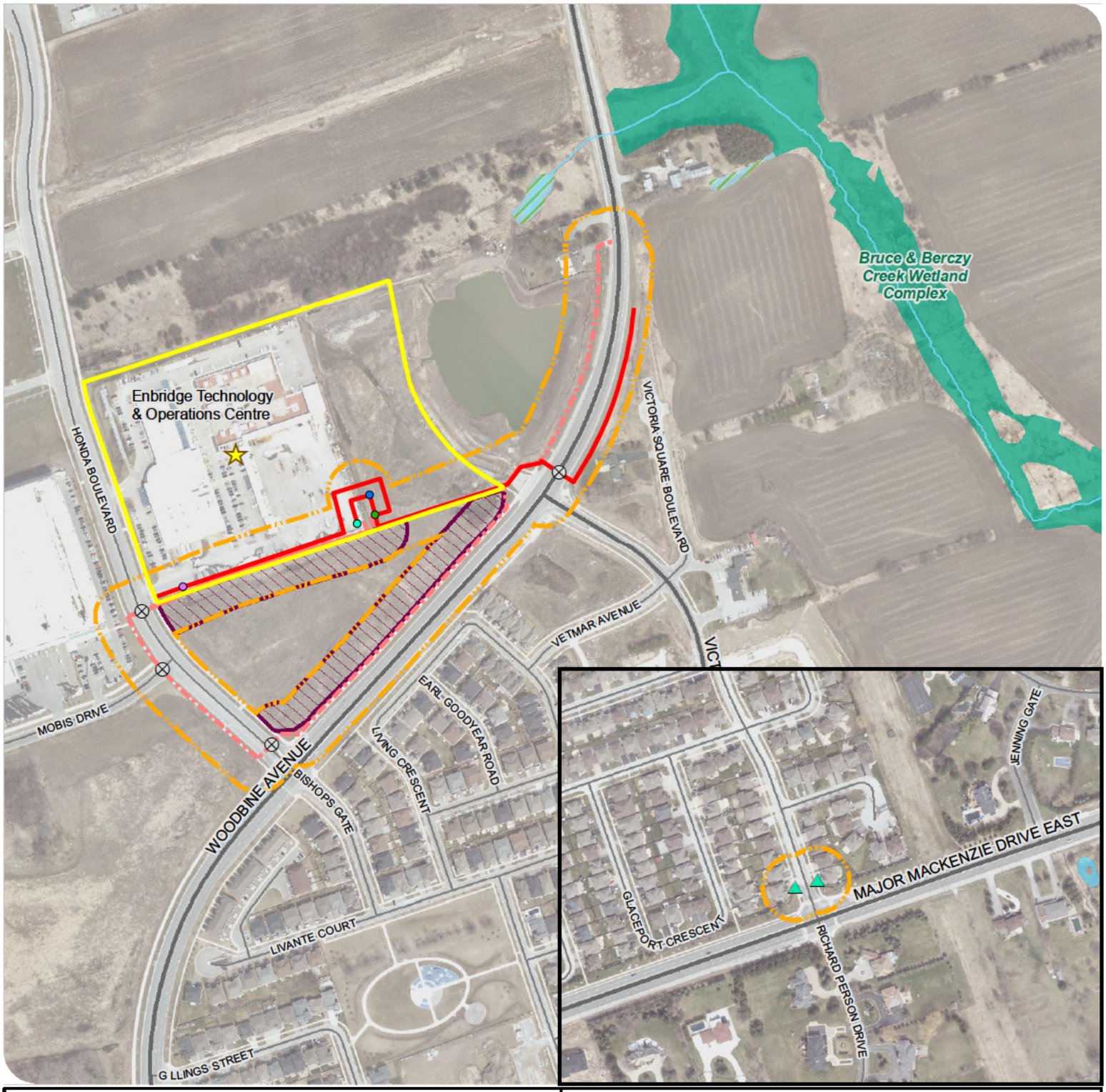

⊗ **Potential Road or Rail Crossing.** For minor road crossings, open-cut or trenchless crossings will be applied. Contact the local region or municipality. Enbridge to develop a Traffic Management Plan to ensure that traffic is maintained while the crossing is conducted. Flag persons will be provided as required. Refer to Section 18.0 of the Enbridge Environmental Construction and Maintenance Manual, 2019.

Candidate Significant Wildlife Habitat. These areas are known to contain Significant Wildlife Habitat. Abide by restricted activity periods and mitigation measures in Table 7.

ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

MITIGATION

FIGURE 5

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody
- Unevaluated Wetland
- Provincially Significant Wetland

*As identified in the TRCA's 2010 Draft Rouge River Watershed Management Plan.

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N
FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:5,000

0 0.0325 0.065 0.13 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12

CUMULATIVE EFFECTS ASSESSMENT

Cumulative effects to the physical and natural environment are anticipated to be negligible given the land for the proposed hydrogen-blending facilities has been previously disturbed and the permanent facility footprints will be minimal in an area of existing high anthropogenic disturbances. Residual air and noise emissions are anticipated to be well within regulatory standards and will be in compliance with the MECP ECA permit.

There is a possibility of cumulative effects on the socio-economic environment related to construction traffic, noise, and dust; however, as described in Section 7 of the Environmental Report, the use of appropriate mitigation techniques and the short timeframe for construction will mitigate any cumulative impacts to a low magnitude. Consequently, no significant cumulative effects are anticipated as a result of the addition of the proposed hydrogen-blending facilities to the scope of the Environmental Report.

SUMMARY

The assessment of potential Project effects, cumulative effects, and recommended mitigation measures presented in the Environmental Report remains largely unchanged as a result of the proposed hydrogen-blending facilities.

The proposed hydrogen-blending facilities will result in a minor, localized alteration of topography, some air and noise emissions during operations, a minor alteration of visual aesthetics, and potential temporary pedestrian access restrictions; however, no significant net effects are anticipated with the implementation of mitigation measures. The mitigation measures recommended in the Environmental Report are considered adequate to address these potential minor effects in conjunction with the implementation of any requirements/conditions of the MECP ECA permit for air and noise emissions.

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6.0 STAKEHOLDER AND INDIGENOUS CONSULTATION UPDATE

This draft Amendment is being circulated to all individuals on the Project contact list developed for the Environmental Report. In addition, a Notice of Project Change is being circulated to all individuals who participated in the consultation process either by attending the Open Houses, sending emails to the Project email inbox, or who otherwise provided their contact details to a Project Team Member with an interest in staying informed of Project updates. The Notice of Project Change will also be circulated to approximately 2,700 residents and businesses located within the Phase 1 Study Area (see **Figure 4**). The Notice of Project Change requests public comment on the proposed changes and provides Project contact information.

A 30-day public comment period will be observed following the release of this draft Amendment. Any comments received as a result of consultation relating to the Amendment will be tracked and responses will be provided, as required. Meetings will be held with applicable agencies, Indigenous communities, and other stakeholders on an as-needed basis to review the proposed changes to the Project. A summary of the consultation results, as well as the consultation logs, will be provided in **Appendix A** of the finalized Amendment to be submitted to the OEB.

The final Amendment will be available for review by interested stakeholders on the Enbridge Project website at <https://www.enbridgegas.com/about-us>, following submission to the OEB (anticipated by March 31, 2020).

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7.0 CONCLUSIONS

This Amendment provides the results of Dillon's review of the proposed changes to the Project scope (as described in **Section 3**) since the completion of the Environmental Report in May 2019, as well as the Addendums in September and December 2019.

The new Preferred Route is similar to the Phase 1 Alternative Route evaluated in the Environmental Report. The setting and assessment of the previously identified Phase 1 Preferred Route can be applied to the new Preferred Route given their proximity to one another. The new Preferred Route results in some advantages over the previously identified Phase 1 Preferred Route, including a shorter overall length, fewer road crossings, and smaller overall construction footprint. The proposed hydrogen-blending facilities will be located entirely on Enbridge-owned property and will be subject to the MECP ECA process.

Based on this review, Dillon has determined that the proposed changes to the Project scope do not result in any material change to the assessment, recommended mitigation measures, or conclusions, as presented in the Environmental Report, and no further assessment is considered necessary.

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8.0 REFERENCES

Dillon Consulting Limited (Dillon). 2019a. *Low-Carbon Energy Project Environmental Report*. May 2019. Prepared for Enbridge Gas Inc. Markham, ON. ix + 100 pp. + Appendices. Available at: https://www.enbridgegas.com/about-us.

Dillon Consulting Limited (Dillon). 2019b. *Enbridge Gas Inc. Low-Carbon Energy Project Environment Report Addendum*. September 2019. Prepared for Enbridge Gas Inc. Markham, ON. ii + 5 pp. Available at: https://www.enbridgegas.com/about-us.

Dillon Consulting Limited (Dillon). 2019c. *Enbridge Gas Inc. Low-Carbon Energy Project Environmental Report Addendum #2*. December 2019. Prepared for Enbridge Gas Inc. Markham, ON. i + 8 pp. Available at: https://www.enbridgegas.com/about-us.

Ontario Energy Board (OEB). 2016. *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition*. 70 pp.

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APPENDIX A

Consultation Update – Summary and Logs

[Note: To be completed and included in Final Amendment for OEB submission]

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ATTACHMENTS
(2 – HWN)

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

[redacted]@enbridge.com> Fri, Mar 8, 2019 at 3:36 PM
To: [redacted]@yahoo.ca" [redacted]@yahoo.ca>, [redacted]@cnhw.qc.ca>
Cc: "[redacted]@ontario.ca)" [redacted]@ontario.ca>

Hi [redacted],

I hope you are both doing well.

I'm emailing to provide some advance materials about our proposed Power to Gas Pipeline Project in the City of Markham. Please find attached the Project Notification letter, Notice of Commencement, map of the proposed location and a copy of the Duty to Consult letter issued by the Ministry of Energy, Northern Development & Mines for your information and reference.

Please don't hesitate to contact me with any questions you may have regarding the proposed project.

I look forward to connecting with you soon.

[Quoted text hidden]

4 attachments

- **Huron Wendat Nation Notification Letter_March 8.pdf**
  394K
- **EGI-LCEP-NOC_Mar-2019_Admail.pdf**
  543K
- **Fig1_ProjectLayout_Feb21.pdf**
  12427K
- **Power to Gas Delegation Letter.pdf**
  1560K

March 8, 2019

[redacted]
Huron Wendat Nation
255, place Chef Michel Laveau
Wendake, Quebec, G0A 4V0

RE: Enbridge Gas Inc. Low-Carbon Energy Project City of Markham, Ontario
Notice of Project

Dear [redacted]

Enbridge Gas Inc. (Enbridge) has retained Dillon Consulting Limited (Dillon) to undertake an environmental and cumulative effects assessment and route selection study for approximately 6.8 kilometers (km) of natural gas pipeline and associated facilities in Markham, Ontario. The project objective is to create a network supplying blended natural gas with a small amount of hydrogen gas within Enbridge's existing natural gas pipeline infrastructure (the Project). The study is being conducted in accordance with the Ontario Energy Board's (OEB) *Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition, August 2016*. Once the study is complete, Enbridge may apply to the OEB for approval to construct the new pipeline. If approved, construction would be completed in two phases in 2020 and 2021.

Enbridge has an operating electrolyzer at its Training and Operations Centre located at 101 Honda Boulevard in Markham, Ontario. The electrolyzer converts surplus electricity into hydrogen gas and oxygen. The hydrogen gas can have multiple uses. Enbridge is proposing to blend a low concentration of hydrogen (up to 2% by volume) into an isolated area of the gas distribution network in an effort to reduce greenhouse emissions. This blended gas will remain within Enbridge's natural gas specifications. It can be utilized in the same way traditional natural gas is used, for example, to heat homes and water. As is the case with any other project, Enbridge will take all necessary measures to ensure that the safety of the gas distribution system is maintained at all times.

A Preliminary Preferred Route (PPR) for the proposed natural gas pipeline has been identified. The PPR follows portions of Woodbine Ave., as well as existing residential roads located in subdivisions, generally located south of Honda Blvd. and north of Highway 7 in the City of Markham. Phase 1 of the Project includes the installation of approximately 1 km of nominal pipe size (NPS) 6-inch steel Extra High Pressure (XHP) natural gas pipe, 250 m of NPS 6-inch steel High Pressure (HP) pipe and 75 m of NPS 8-inch Intermediate Pressure (IP) polyethylene (PE) natural gas pipeline. Phase 2 of

Continued . . .

DILLON CONSULTING

51 Breithaupt Street
Suite 200
Kitchener, Ontario
Canada
N2H 5G5
Telephone
519.571.9833
Fax
519.571.7424

Dillon Consulting Limited

the Project is comprised of multiple segments of pipeline which will convey blended hydrogen and natural gas, and includes the installation of 1.2 km of NPS 8-inch IP PE pipe, 2.9 km of NPS 8-inch and NPS 6-inch IP PE pipe, 350 m of NPS 6-inch IP PE pipe, 60 m of NPS 6-inch IP PE pipe, 10 m of NPS 4-inch IP PE pipe, 350 m of NPS 4-inch IP PE pipe, and 600 m of NPS 2-inch IP PE pipe. An alternative route is also being considered as part of the study, and is located in the same general area as the PPR. Locations requiring both temporary and permanent disconnection points of gas pipelines have been identified as well for both routes. A map showing both the PPR and alternative pipeline route is enclosed (**Figure 1**).

In order to undertake a successful consultation program, Indigenous engagement will play a key role in the Project. As noted in the attached Notice of Study Commencement, Enbridge will be hosting Open House meetings as part of the study.

As part of the initial phase of the study, we are collecting information on the natural environment, archaeological features and socio-economic features for both the PPR and alternative route described above. Examples of data being collected include information on terrestrial and aquatic vegetation and wildlife, archaeological and heritage resources, community parks and picnic areas, community facilities, nature trails, bus routes and other utilities such as water, sewage, industrial and commercial utilities.

Enbridge is committed to meaningful engagement with Indigenous groups and the satisfaction of the duty to consult. Enbridge looks forward to engaging with your Nation to ensure your community's interests are being represented. Your Nation is invited to provide comments regarding the proposed project. Specifically, Enbridge is seeking information about any potential impacts that the project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts.

We invite your community to be involved in the engagement and consultation process. Kindly indicate whether your community is interested in participating in the engagement activities on or before **March 31, 2019.** If you are unable to respond by the above date and are intending to do so, please provide an alternative date for when the Project Team may expect a response.

Enbridge would also be interested in meeting with your Nation to share project related information should you wish. Alternatively, please advise if you do not wish to meet individually but would prefer to be kept informed of the project.

On behalf of the Project Team, thank you in advance for your consideration regarding the initial phases of the project. Please do not hesitate to contact me with any questions you may have.

Continued . . .

Sincerely,

[redacted]

[redacted]
Sr. Advisor, Community Engagement
Enbridge Gas Inc.
O: 416-753-6962
C: 416-525-2497
[redacted]@enbridge.com

Encls. Notice of Study Commencement and Open House
Figure 1 – Project Layout and Location
MOENDM Delegation Letter

PROPOSED ENBRIDGE LOW-CARBON ENERGY PROJECT
NOTICE OF STUDY COMMENCEMENT AND OPEN HOUSE
CITY OF MARKHAM, ONTARIO
ENBRIDGE GAS INC.

The Study

Enbridge Gas Inc. (Enbridge) has retained Dillon Consulting Limited (Dillon) to begin an environmental and route selection study for approximately 6.8 kilometers (km) of natural gas pipeline and associated facilities. The objective of the project is to blend a small amount of hydrogen gas into our existing natural gas network, to reduce greenhouse gas emissions. Enbridge operates a facility which converts surplus electrical energy to hydrogen gas, which would be injected into the existing natural gas network. The blended gas would be distributed within the area outlined on the map below. Once the study is complete, Enbridge may apply to the Ontario Energy Board (OEB) for approval to construct the new pipeline. If approved, construction may begin in 2020.

The preferred route for Phase 1 of the project would involve the installation of approximately 1,325 m of 6-inch and 8-inch pipe primarily along Woodbine Ave. and Honda Blvd., ending at Enbridge's Technology and Operations Centre. Phase 2 of the project would involve multiple pipeline segments of various lengths and sizes ranging from 2-inch to 8-inch pipe along Victoria Square Blvd., Woodbine Ave., Rodick Rd., Prince Regent St., Major Mackenzie Dr. E, Village Pkwy., Elgin Mills, Honda Blvd., and Victoria Square Blvd.

An alternative route is also being considered as part of the study. The alternative route for Phase 1 of the project would involve the installation of 450 m of 6-inch pipe along Victoria Square Blvd. and an unnamed street. Phase 2 of the project will involve multiple pipeline segments of various lengths and sizes ranging from 6-inch to 8-inch pipe along Honda Blvd., Bishop's Gate, Livante Ct., Helford St., Prince of Wales Dr., Duke of York St., Woodbine Ave., Betty Roman Blvd., Markland St., and Calvert Rd. The preliminary preferred and alternative routes are identified on the map below.

The Process

The study is being conducted in accordance with the OEB's Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario. The study will review the need and justification for the pipeline, describe the natural and socio-economic environment, evaluate the potential facilities from a social and environmental perspective, outline safety measures, and describe appropriate measures for impact mitigation and monitoring.

Invitation to the Community

Stakeholder consultation is a key component of this study. Members of the general public, agencies, Indigenous communities and interest group representatives are invited to participate in the study. We will be hosting Open Houses to provide you with an opportunity to review the project and provide input. Details on the Open Houses are as follows:

Location: Monte Carlo Inn (8990 Woodbine Ave., Markham)
Date: March 19, 2019 (Tuesday)
Time: 5 PM to 8 PM

Location: Enbridge Technology & Operations Centre
(101 Honda Blvd., Markham)
Date: March 23, 2019 (Saturday)
Time: 9 AM to 12 PM
Free pancake breakfast will be served!

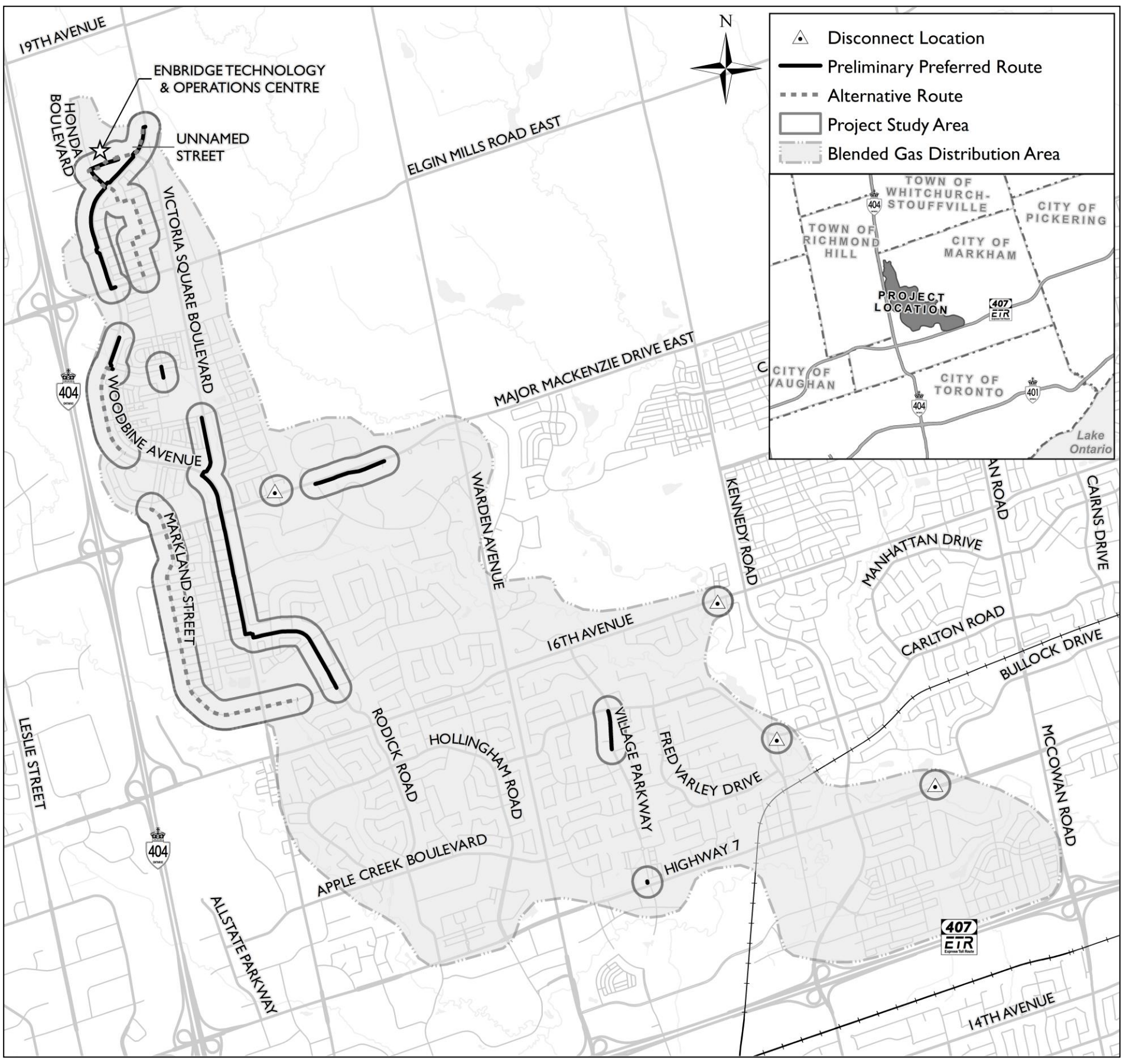
Win an Ecobee (valued at $300)

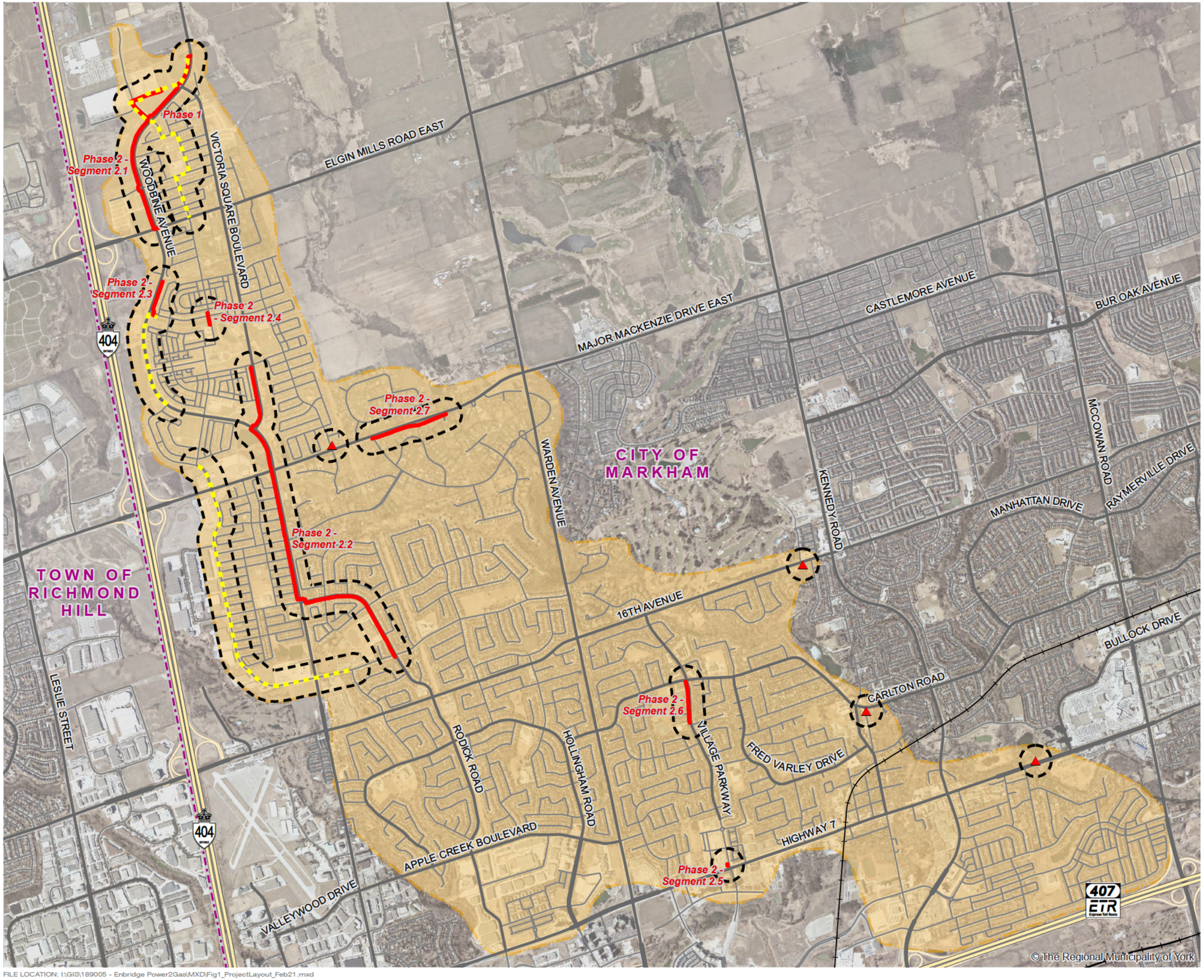
Enter for a chance to win an Ecobee smart thermostat at one of the Open Houses.

Representatives from Enbridge and Dillon will be in attendance to discuss the project and answer questions. Your input will be used to confirm the preferred route and create mitigation plans to be implemented during construction. If you are interested in participating, or would like to provide comments, please come to one of the Open Houses or contact one of the individuals listed as soon as possible. For more information about the proposed project and hydrogen blending, please visit http://enbridgegas.com/LowCarbonEnergyProject.

Tanya Turk
Sr Environmental Advisor
Enbridge Gas Inc.
101 Honda Blvd., Markham, ON L6C 0M6
(416) 495-3103
tanya.turk@enbridge.com

Tristan Lefler
Environmental Assessment Project Manager
Dillon Consulting Limited
51 Breithaupt St., Suite 200, Kitchener, ON
N2H 5G5
(519) 571-9833
LowCarbonEnergyEA@dillon.ca





ENBRIDGE

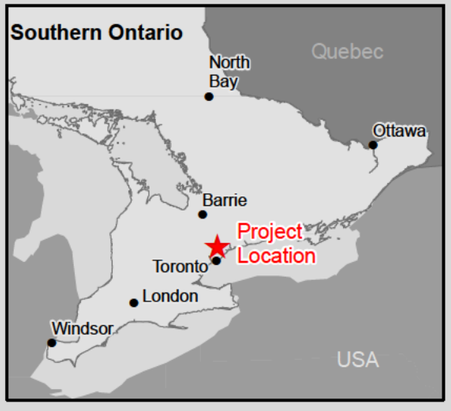
ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

PROJECT LAYOUT

FIGURE 1

- Disconnect Location
- Preliminary Preferred Route
- Alternative Route
- Rail
- Project Study Area
- Blended Gas Distribution Area
- Municipal Boundary



0 125 250 500 m

SCALE 1:28,000

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: NT / TL
MAP PROJECTION: NAD 1983 UTM Zone 17N

DILLON CONSULTING

PROJECT: 18-9005

DATE: 2019-02-21

FILE LOCATION: I:\GIS\189005 - Enbridge Power2Gas\MXD\Fig1_ProjectLayout_Feb21.mxd

Ministry of Energy, Northern Development and Mines

77 Grenville Street
6th Floor
Toronto ON M7A 2C1

Tel: (416) 314-2599

Ministère de l'Énergie, Développement du Nord et Mines

77 rue Grenville
6e étage
Toronto ON M7A 2C1

Tél: (416) 314-2599

Ontario

Indigenous Energy Policy

VIA EMAIL

March 1, 2019

[redacted]
Technical Manager, Regulatory Applications
Enbridge Gas Distribution Inc.
500 Consumers Road
North York, Ontario M2J 1P8

Re: Power to Gas Pipeline Project

Dear [redacted]

Thank you for your email dated January 4, 2019 notifying the Ministry of Energy, Northern Development and Mines of Enbridge's proposal for the Power to Gas Pipeline Project and requesting clarification on Duty to Consult requirements.

We understand that Enbridge is proposing to construct approximately 6.8 kilometers of natural gas pipeline in the City of Markham to isolate a small portion of Enbridge's existing distribution system to ensure that only blended natural gas is utilized in that isolated section. The project is associated with Enbridge's operating electrolyzer at its Training and Operations Center at 101 Honda Boulevard in Markham. The project, as outlined in the project description from Enbridge, consists of two phases with varying diameter and length of pipeline.

Phase 1 of the project consists of approximately 750 meters of NPS 6 steel extra high-pressure natural gas pipeline. The expected route will begin approximately 40 meters south of 11182 Woodbine Avenue in Markham, that will travel south on Woodbine Avenue and turn west onto Honda Boulevard. The pipeline will terminate at the Training and Operating Centre. Phase 2 will require the construction of multiple segments of varying diameter and length of pipeline. These segments will be required to provide system support when the project is isolated from the rest of the distribution system. Phase 2 will originate at the Training and Operating Centre and terminate at Major Mackenzie Drive.

The Ministry has reviewed the information provided relative to its current understanding of the interests of First Nation and Métis communities in the area and has determined that it may have the potential to affect First Nation and Métis communities who hold or claim Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982.

As you are aware, the Government of Ontario (the "Crown") has a constitutional duty to consult and accommodate First Nation and Métis communities when Crown project approvals may lead to an appreciable adverse impact on established or asserted Aboriginal or treaty rights. While the legal duty to consult falls on the Crown, the Crown may delegate the day-to-day, procedural aspects of consultation to project proponents. The Ministry of the Energy, Northern Development and Mines is delegating the procedural aspects of consultation to Enbridge through this letter.

Based on the Crown's preliminary assessment of First Nation and Métis community rights and project impacts, the following Aboriginal communities should be consulted on the basis that they have or may have constitutionally protected Aboriginal or treaty rights that may be adversely affected by the Project:

Community	**Mailing Address**
Alderville First Nation	11696 Line Road 2 Roseneath, ON K0K 2X0
Curve Lake First Nation	22 Winookeedaa Road Curve Lake, ON K0L1R0
Hiawatha First Nation	123 Paudash Street Hiawatha, ON K9J 0E6
Huron Wendat First Nation *	255, place Chef Michel Laveau Wendake, QC G0A 4V0
Mississaugas of the Credit First Nation	2789 Mississauga Road R.R. #6 Hagersville, ON N0A 1H0
Mississaugas of Scugog Island First Nation	Administration Building 22521 Island Road Port Perry, ON L9L 1B6

Note: * interests are specific to archeological resources

This rights-based consultation list is based on information that is subject to change. First Nation and Métis communities may make new rights assertions at any time, and other developments (e.g. the discovery of Aboriginal archaeological sites) can occur that may require additional First Nation and/or Métis communities to be notified and/or consulted. If you become aware of potential rights impacts on communities that are not listed above at any stage of the consultation and approval process, kindly bring this to the attention of the Ministry with any supporting information regarding the claim. The Ministry will then assess whether it is necessary to include the community on the rights-based consultation list above.

It is the Ministry's expectation that Enbridge will communicate directly with the communities listed above, and that Enbridge will:

- Notify the communities that Enbridge has been delegated the procedural aspects of consultation by the Ministry of Energy, Northern Development and Mines on behalf of Ontario.
- Notify the communities that they may contact the Crown directly should they have any questions or concerns.
- Provide the communities with the following contact information should they wish to communicate directly with the Ministry:

  Raina Crasto
  Policy Advisor, Indigenous Energy Policy
  Ministry of Energy, Northern Development and Mines
  416-326-4571 / Raina.crasto@ontario.ca

- Please copy the Ministry contact when communicating the above information.

The Ministry relies on consultation conducted by proponents when it assesses the Crown's obligations and directs proponents during the regulatory process. Enbridge's responsibilities for procedural aspects of consultation include:

- Providing the Indigenous communities with timely notice of the project for the purposes of considering possible impacts on their Aboriginal and/or treaty rights;

- In that notice, clearly stating that Enbridge has been delegated the procedural aspects of consultation by the Ministry of Energy, Northern Development and Mines on behalf of Ontario for the project.

- Providing Indigenous communities with information about the project including anticipated impacts, and information on project timelines;

- Following up with the Indigenous communities to ensure they have received project information and that they are aware of the opportunity to express comments and concerns about the project;

- Explaining the regulatory and approval processes that apply to the project;

- Gathering information about how the project may adversely impact the relevant Aboriginal and/or treaty rights (for example, hunting, fishing) or sites of cultural significance (for example, burial grounds, archaeological sites);

- Considering the comments and concerns raised by Indigenous communities and providing responses;

- Where appropriate, discussing accommodation, including mitigation or other measures to address potential adverse impacts on Aboriginal and/or treaty rights;

- Where appropriate, developing and discussing with the Crown appropriate accommodation measures;
- Taking reasonable steps to foster positive relationships with the Indigenous communities;
- Bearing the reasonable costs associated with these procedural aspects of consultation; and
- Maintaining records of activities in relation to carrying out the delegated procedural aspects of consultation and providing information to the Ministry.

If you have any questions about this letter or require any additional information, please contact Raina Crasto at 416-326-4571 or Raina.crasto@ontario.ca

Sincerely,

[redacted]

A/Manager
Indigenous Energy Policy

C: Ontario Pipeline Coordinating Committee (OPCC)

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

1 message

[redacted]@enbridge.com> Wed, Mar 13, 2019 at 11:34 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]@cnhw.qc.ca]
Sent: Monday, March 11, 2019 8:41 AM
To: [redacted]@yahoo.ca
Cc: [redacted])
Subject: [External] RE: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

Good morning [redacted]

Thanks for the notice and letter on the project.

Could you please first provide us the shapefiles of the proposes pipeline route ?

Best regards,

[redacted]

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham (Shapefiles)

1 message

[redacted]enbridge.com> Wed, Mar 13, 2019 at 3:31 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

Please do not open any attachments from organizations or people that you are not familiar with. Also, since it is possible for viruses to SPOOF or fake the sender's address, do not open emails with attachments from people you know, or from whom you were not expecting an attachment, or if the attachment is a file type or file name that you customarily do not receive from this person.

From: [redacted]
Sent: Wednesday, March 13, 2019 3:31 PM
To: [redacted]
Subject: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham (Shapefiles)

Please do not open any attachments from organizations or people that you are not familiar with. Also, since it is possible for viruses to SPOOF or fake the sender's address, do not open emails with attachments from people you know, or from whom you were not expecting an attachment, or if the attachment is a file type or file name that you customarily do not receive from this person.

Hi [redacted]

Please find attached the shapefiles for the proposed project. Please let me know if you require anything further.

Regards,

[redacted]

Client_Mar13.zip
10K

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham (Shapefiles)

1 message

[redacted]@enbridge.com> Thu, Mar 14, 2019 at 10:13 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]@cnhw.qc.ca]
Sent: Thursday, March 14, 2019 10:12 AM
To: [redacted]
Subject: [External] RE: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham (Shapefiles)

Thanks for following-up quickly [redacted]

We effectively have worked with Timmins in the past.

They are great people and a really professional team.

Look forward working with them again.

Best,

[redacted]

De : [redacted]@enbridge.com]
Envoyé : 14 mars 2019 10:09
À : [redacted]d
Objet : RE: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham (Shapefiles)

Hi [redacted]

The Stage 1 archaeological assessment has already been completed and we are just waiting for the report. As soon as it's prepared, I will send you a copy for your review. We anticipate starting sometime in the Spring to complete the Stage 2 assessment. I will keep you posted once I have more information and yes, we will certainly provide funding to support the participation of one HWN representative to participate in all the assessments. Timmins Martelle is the Archaeological firm that we have hired. I believe the HWN have worked with them in the past.

Please don't hesitate to reach out with any additional questions you may have. I will be in touch soon.

Regards,

[redacted]

From: [redacted].picard@cnhw.qc.ca]
Sent: Thursday, March 14, 2019 9:01 AM
To: [redacted]
Subject: [External] RE: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham (Shapefiles)

Good morning [redacted]

Thanks for providing us the shapefiles.

Do you already have a plan in mind for the archaeology ?

When do you anticipate so start?

Is the firm already choose ?

This project is in a very sensitive area for our heritage and as you already know we will want to be present for all stages.

Have a good day [redacted]

[redacted]

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

1 message

[redacted]@enbridge.com> Thu, Apr 25, 2019 at 10:54 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]
Sent: Thursday, April 25, 2019 10:54 AM
To: [redacted]
Subject: RE: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

Good morning [redacted]

Are you available for a conference call next Friday, May 3rd anytime during the day to walk you through the project?

Please find attached a copy of the stage 1 report and associated maps for your information and reference. We have not yet determined when we plan to complete the stage 2 work but we anticipate it will be during the summer. As soon as a timeline has been determined I will let you know.

I look forward to hearing back from you.

Regards,

[redacted]

From: [redacted]@cnhw.qc.ca]
Sent: Thursday, April 25, 2019 9:47 AM
To: [redacted]
Subject: [External] RE: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

H[redacted]

I unfortunately have not received the Stage 1 report.

I would be happy to discuss the project with you.

What time suits best for you ?

Regards,

[redacted]

De : [redacted]@enbridge.com]
Envoyé : 24 avril 2019 16:56
À : [redacted]
Objet : RE: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

Hi [redacted]

I emailed the Stage 1 information on two separate occasions? I will forward my last email again momentarily. If you wouldn't mind replying back confirming that you are in receipt of the email that would be greatly appreciated. Also, is there a time and date that works for you to schedule a conference call to discuss this project?

I look forward to hearing back from you.

Regards,

[redacted]

From: [redacted]
[redacted] Wednesday, April 24, 2019 3:10 PM
To: Sonia Fazari
Subject: [External] TR: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

---

De : [redacted]@cnhw.qc.ca]
Envoyé : 24 avril 2019 15:09
À : [redacted]d
Objet : RE: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

Hi [redacted]

Any news ?

Best,

[redacted]

De : [redacted]@cnhw.qc.ca]
Envoyé : 17 avril 2019 09:08
À : [redacted]
Objet : TR: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

---

De : [redacted]@cnhw.qc.ca]
Envoyé : 10 avril 2019 13:39
À : [redacted] [redacted]@yahoo.ca
Objet : RE: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

Good afternoon [redacted]

First of all have you received the Stage 1 archaeological report from your consultant ?

If so, could we receive a copy please.

Do you have an approximate date fixed in order to conduct the Stage 2 assessment ?

Is it still the intention of Enbridge to invite us in the Stage 2 fieldwork ?

Thanks [redacted]

[redacted]

De : [redacted]enbridge.com]
Envoyé : 10 avril 2019 13:31
À : [redacted]
Objet : FW: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

Hi [redacted]

I hope you are both doing well. I was wondering if you've had the opportunity to review the attached project information and if you would both be interested in scheduling a conference call to provide you with an overview of the proposed Power to Gas Project.

I look forward to hearing back from you and have a great day.

Best regards,

[redacted]

2 attachments

P324-0378-2019_12Mar19_RE_Part2 (1).pdf
13137K

P324-0378-2019_12Mar19_RE_Part1 (1).pdf
15110K

Stage 1 Archaeological Assessment
Low-Carbon Energy Project
Enbridge Gas Inc.
Various Lots and Concessions
Geographic Township of Markham
Former County of York
City of Markham
Regional Municipality of York, Ontario

Submitted to

Dillon Consulting Limited
235 Yorkland Blvd, Suite 800
Toronto, Ontario, M2J 4Y8

and

The Ontario Ministry of Tourism, Culture and Sport

Prepared by

Timmins Martelle
Heritage Consultants Inc.

@ the Museum of Ontario Archaeology
1600 Attawandaron Road, London, ON N6G 3M6
Phone: (519) 641-7222 Fax: (519) 641-7220

Archaeological License: Matthew Beaudoin, Ph.D., P324
Our File: 2018-207
PIF Number: P324-0378-2019

March 2019
Original report submitted to the Ministry of Tourism, Culture and Sport
12 March 2019

Executive Summary

Enbridge Gas In.c (Enbridge) is proposing the Low-Carbon Energy Project to service an urban residential and commercial community in Markham, Ontario. All proposed segments of pipe are to be installed within the existing municipal road rights-of-way (ROWs). Timmins Martelle Heritage Consultants Inc. (TMHC) was contracted to carry out a Stage 1 archaeological assessment for the Project area by Dillon Consulting Limited (Dillon) who are coordinating the project on behalf of Enbridge. The Project area lies within part of Lots 16 to 28, Concession 3, Lots 16 to 23 and 28, Concession 4, Lots 10, 11, 13 and 14, Concession 5, in the Geographic Township of Markham, City of Markham, Regional Municipality of York, Ontario. The natural gas main installation project is divided into a Preliminary Preferred Route and an Alternative Route. The Preliminary Preferred Route is divided into Phases 1 and 2 which is further divided into Segments 2.1.-2.7. The Preliminary Preferred Route also includes Disconnection Points 1-4 and associated work areas. An Alternative Route was also established and considered in this assessment. The Alternative Route is divided into Phase 1 and 2 which is further divided into Segments 2.1-2.3. It was determined in discussions with the proponent that the Project area should be considered to be the entire ROW along the length of the proposed routes and an assumed 50 m wide area centred on them which represents an assumed work area. The Stage 1 assessment was undertaken as part of the internal Enbridge environmental screening process. All work was done in accordance with the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011).

The Stage 1 background study included a review of current land use, historic and modern maps, registered archaeological sites and previous archaeological studies, past settlement history for the area and a consideration of topographic and physiographic features, soils and drainage. The background research indicated that the Project area was in proximity to features signalling archaeological potential, namely: 1) watercourses (Rouge River, Berczy Creek, Bruce Creek, Eckhardt Creek and various small unnamed tributaries and ponds); 2) well-drained soils (Pontypool sandy loam, Berrien sandy loam and Cashel clay); 3) areas of 19th century settlement; 4) mapped 19th century thoroughfares (19th Avenue, Elgin Mills Road East, Woodbine Avenue, Major Mackenzie Drive East, 16th Avenue, Warden Avenue and Highway 7); and 5) previously identified archaeological sites (AlGu-463 (Peach 2), AlGu-457 (Glendower 3), AlGu-380 (Rice), AlGu-379 (McCague), AlGu-306 (Carlton Creek Northwest), AlGu-5 (Carlton Creek Northeast), AlGu-304 (Carlton Creek), AlGu-303 (Golden Tower), AlGu-302 (Dietzmann), AlGu-301 (Carver), AlGu-300 (Klinck) and AlGu-237).

A Stage 1 property inspection was undertaken for the Preliminary Preferred Route. The entire Alternative Route was not subject to a property inspection at this time. A review of historic aerial photographs, modern day imagery and topographic mapping was undertaken for the Preliminary Preferred Route and the Alternative Route to determine if prior land use had removed archaeological potential from the Project area.

Based on the information compiled in the background study and the property inspection, the following recommendations are made:

Preliminary Preferred Route - Phase 1

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Alternative Route - Phase 1

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.1

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Alternative Route - Segment 2.1

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.2

The majority of this Project area is free of archaeological concern; however, there are numerous areas that still have archaeological potential and require Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval. The areas that require Stage 2 survey include:

- Victoria Square Boulevard – eastern ROW across from Murison Drive;
- Woodbine Avenue – western ROW north of Major Mackenzie Drive;
- Woodbine Avenue – eastern and western ROW south of Major Mackenzie Drive;
- Woodbine Avenue – eastern and western ROW north of Rodick Road; and
- Rodick Road – eastern and western ROW, various parcels between Woodbine Avenue and Calvert Road.

Alternative Route - Segment 2.2

The majority of this Project area is free of archaeological concern; however, there are numerous areas that still have archaeological potential and require Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval. The areas that require Stage 2 survey include:

- Calvert Road – northern ROW between of Woodbine Avenue and Townson Road; and,

- Calvert Road – southern ROW west of Townson Road.

Preliminary Preferred Route - Segment 2.3

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Alternative Route - Segment 2.3

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.4

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.5

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.6

The majority of this Project area is free of archaeological concern; however, there are numerous areas that still have archaeological potential and require Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval. The areas that require Stage 2 survey include:

- Village Parkway – eastern and western ROW, various parcels between Carleton Road and Wentworth Court.

Preliminary Preferred Route - Segment 2.7

The majority of this Project area is free of archaeological concern; however, there are numerous areas that still have archaeological potential and require Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval. The areas that require Stage 2 survey include:

- Major Mackenzie Drive – northern ROW, two segments west of Walsingham Court; and
- Major Mackenzie Drive – southern ROW east of Walsingham Court.

Preliminary Preferred Route - Disconnect 1

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Disconnect 2

The northern portion of this Project area is free of archaeological concern; however, the southern portion still has archaeological potential and requires Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval.

Preliminary Preferred Route - Disconnect 3

The western portion of this Project area is free of archaeological concern; however, the eastern portion still has archaeological potential and requires Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval.

Preliminary Preferred Route - Disconnect 4

The majority of this Project area is free of archaeological concern; however, the there are areas in the northern portion that still have archaeological potential and require Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval.

If the Project area is changed to incorporate lands not covered within this assessment, then additional archaeological assessment may be required.

These recommendations are subject to the conditions laid out in Section 7.0 of this report and to the Ministry of Tourism, Culture and Sport's review and acceptance of this report into the provincial registry.

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Stage 1 Archaeological Assessment
Low-Carbon Energy Project
Enbridge Gas Inc.
Various Lots and Concessions
Geographic Township of Markham
Former County of York
City of Markham
Regional Municipality of York, Ontario

1.0 PROJECT CONTEXT

1.1 Development Context

1.1.1 Introduction

Enbridge Gas In.c (Enbridge) is proposing the Low-Carbon Energy Project to service an urban residential and commercial community in Markham, Ontario. All proposed segments of pipe are to be installed within the existing municipal road rights-of-way (ROWs). Timmins Martelle Heritage Consultants Inc. (TMHC) was contracted to carry out a Stage 1 archaeological assessment for the Project area by Dillon Consulting Limited (Dillon) who are coordinating the project on behalf of Enbridge. The Project area lies within part of Lots 16 to 28, Concession 3, Lots 16 to 23 and 28, Concession 4, Lots 10, 11, 13 and 14, Concession 5, in the Geographic Township of Markham, City of Markham, Regional Municipality of York, Ontario. The natural gas main installation project is divided into a Preliminary Preferred Route and an Alternative Route. The Preliminary Preferred Route is divided into Phases 1 and 2 which is further divided into Segments 2.1.-2.7. The Preliminary Preferred Route also includes Disconnection Points 1-4 and associated work areas. An Alternative Route was also established and considered in this assessment. The Alternative Route is divided into Phase 1 and 2 which is further divided into Segments 2.1-2.3. It was determined in discussions with the proponent that the Project area should be considered to be the entire ROW along the length of the proposed routes and an assumed 50 m wide area centred on them which represents an assumed work area. The Stage 1 assessment was undertaken as part of the internal Enbridge environmental screening process. All work was done in accordance with the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011).

All archaeological assessment activities were performed under the professional archaeological license of Matthew Beaudoin, Ph.D. (P324) and in accordance with the 2011 *Standards and Guidelines for Consultant Archaeologists* (MTC 2011). Permission to commence the study was given by Tristan Lefler, of Dillon.

1.1.2 Purpose and Legislative Context

The *Ontario Heritage Act* (1990) makes provisions for the protection and conservation of heritage resources in the province of Ontario. Our archaeological assessment work is part of an environmental review which is intended to identify areas of environmental interest as specified in the *Provincial Policy Statement* (2014). Heritage concerns are recognized as a matter of provincial interest in Section 2.6.2 of the *Provincial Policy Statement* (PPS) which states:

> *development* and *site alteration* shall not be permitted on lands containing *archaeological resources* or *areas of archaeological potential* unless *significant archaeological resources* have been *conserved* (OMMAH 2014:29).
>
> In the PPS the term *conserved* means:
>
> the identification, protection, management and use of *built heritage resources, cultural heritage landscapes* and *archaeological resources* in a manner that ensures their cultural heritage value or interest is retained under the *Ontario Heritage Act*. This may be achieved by the implementation of recommendations set out in a conservation plan, archaeological assessment and/or heritage impact assessment. Mitigative measures and/or alternative development approaches can be included in these plans and assessments (OMMAH 2014:40).

Sections 2 (d) and 3.5 of the *Planning Act* stipulate that municipalities shall have regard for their conservation of features of significant architectural, cultural, historical, archaeological or scientific interest. Therefore, the purpose of a Stage 1 background study is to determine if there is potential for cultural resources to be found on a property for which a change in land use is pending. If a property is found to have potential for cultural resources, a Stage 2 assessment is required, involving a search for archaeological resources.

2.0 STAGE 1 BACKGROUND STUDY

2.1 Research Methods and Sources

A Stage 1 background study was conducted to gather information about known and potential archaeological resources within the Project area. According to the Province of Ontario's 2011 *Standards and Guidelines for Consultant Archaeologists*, a Stage 1 background study must include a review of:

- an up-to-date listing of sites from the Ontario Archaeological Sites Database (OASD) of archaeological sites with 1 km of the property;
- reports of previous archaeological fieldwork within a radius of 50 metres;

- topographic maps at 1:10,000 (recent and historical) or the most detailed scale available;
- historic settlement maps (e.g., historical atlas, surveys);
- archaeological management plans or other archaeological potential mapping (when available); and
- commemorative plaques or monuments on or near the Project area.

For this project, the following activities were carried out to satisfy or exceed the above requirements:

- a database search of registered archaeological sites within 1 km of the Project area was carried out with the Ministry of Tourism, Culture and Sport's Past Portal system (completed August 8, 2018);
- a review of known prior archaeological reports for the Project area and adjacent lands (note the Ministry of Tourism, Culture and Sport currently does not keep a publicly accessible record of archaeological assessments carried out in the Province of Ontario, so a complete inventory of prior assessment work nearby is not available);
- Ontario Base Mapping (1:10,000) was reviewed through ArcGIS and mapping layers provided by geographynetwork.ca; detailed mapping provided by the client was also reviewed; and,
- historic maps and records related to post-1800 land settlement were studied.

This Project area is not covered by any existing archaeological management plans and there are no commemorative plaques or monuments identified within the vicinity.

Additional sources of information were also consulted, including modern aerial photographs, local history accounts, soils and physiography data provided by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), and both 1:50,000 (Natural Resources Canada) and finer scale topographic mapping.

When compiled, background information was used to create a summary of the characteristics of the Project area, to evaluate its archaeological potential. The Province of Ontario (MTC 2011 – Section 1.3.1) has defined the criteria that identify archaeological potential as:

- previously identified archaeological sites
- water sources
    - primary water sources (lakes, rivers, streams, creeks)
    - secondary water courses (intermittent streams and creeks, springs, marshes, swamps)
    - features indicating past water sources (e.g., glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river

or stream channels indicated by clear dip or swale in topography, shorelines of drained lakes or marshes, cobble beaches)
    - accessible or inaccessible shoreline (e.g., high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh)
- elevated topography (e.g., eskers, drumlins, large knolls, plateau)
- pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground
- distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases; there may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings
- resource areas, including:
    - food or medicinal plants (e.g., migratory routes, spawning areas, prairie);
    - scarce raw materials (e.g., quartz, copper, ochre or outcrops of chert);
    - early Euro-Canadian industry (e.g., fur trade, logging, prospecting, mining)
- areas of 19th century settlement. These include places of early military or pioneer settlement (e.g., pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches and early cemeteries. There may be commemorative markers of their history, such as local, provincial, or federal monuments or heritage parks.
- early historical transportation routes (e.g., trails, passes, roads, railways, portage routes)
- 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; and
- property that local histories or informants have identified with possible archaeological sites, historical events, activities or occupations.

In Southern Ontario (south of the Canadian Shield), any lands within 300 metres of any of the features listed above are considered to have potential for the discovery of archaeological resources.

Typically, a Stage 1 assessment will determine potential for precontact First Peoples' and historic era sites independently. This is due to the fact that lifeways varied considerably during these eras so that criteria used to evaluate potential for each type of site also varies.

It should be noted that some factors can also negate the potential for discovery of intact archaeological deposits. Subsection 1.3.2 of the 2011 *Standards and Guidelines for Consultant Archaeologists* indicates that archaeological potential can be removed in instances where land has been subject to extensive and deep land alterations that have severely damaged the integrity of any archaeological resources. Major disturbances indicating removal of archaeological potential include, but are not limited to:

- quarrying;
- major landscaping involving grading below topsoil;
- building footprints; and,
- sewage and infrastructure development.

Some activities (agricultural cultivation, surface landscaping, installation of gravel trails, etc.) may result in minor alterations to the surface topsoil but do not necessarily affect or remove archaeological potential. It is not uncommon for archaeological sites, including structural foundations, subsurface features and burials, to be found intact beneath major surface features like roadways and parking lots. Archaeological potential is, therefore, not removed in cases where there is a chance of deeply buried deposits, as in a developed or urban context or floodplain where modern features or alluvial soils can effectively cap and preserve archaeological resources.

2.2 Project Context: Archaeological Context

2.2.1 Project area: Overview and Physical Setting

Enbridge is proposing the Low-Carbon Energy Project to service an urban residential and commercial community in Markham, Ontario. The natural gas main installation project, described below, is divided into a Preliminary Preferred Route and an Alternative Route. The Preliminary Preferred Route is divided into Phases 1 and 2 which is further divided into Segments 2.1.-2.7. The Preliminary Preferred Route also includes Disconnection Points 1-4 and associated work areas. An Alternative Route was also established and considered in this assessment. The Alternative Route is divided into Phase 1 and 2 which is further divided into Segments 2.1-2.3. It was determined in discussions with the proponent that the Project area should be considered to be the entire ROW along the length of the proposed routes. All proposed segments of pipe are to be installed within the existing municipal right of way with an assumed 50 m wide study area centred on them which represents an assumed work area.

The Project area falls within the Peel Plain region (Chapman and Putnam 1984:174-176). Located between the Oak Ridges Moraine and Lake Ontario, this region's almost flat terrain consists of shale and limestone till overlaid by a clay layer of varying depth (Map 4).

The soil types within the Project area vary (Map 5). The soils along the Project area are Peel clay, Milliken loam, Bottom land, Chinguacousy clay loam, Malton clay, Cashel clay, Pontypool sandy loam and Berrien sandy loam. The characteristics and drainage capabilities of these soil types are present in Table 1 (Hoffman and Richards 1955). Peel clay refers to those soils of the Cashel catena developed on stone free lacustrine materials. The drainage is typically imperfect (Hoffman and Richards 1955:71). Milliken loam refers to those soils of the Woburn catena developed on medium textured shale and limestone till. The materials are dominantly shale with varying amounts of limestone. The drainage is typically imperfect (Hoffman and Richards 1955:32-34). Bottom land soils refer to those

low lying soils along stream courses which are subject to flooding. Bottom Land is an immature soil and shows little horizon differentiation. The profile usually consists of a deep dark coloured surface underlain by greyish material. The drainage varies but is usually poor (Hoffman and Richards 1955:76). Chinguacousy clay loam refers to those soils of the Oneida caterna developed on mostly limestone but with notable shale content. The drainage is typically imperfect (Hoffman and Richards 1955:41). Malton clay refers to those soils of the Cashel catena developed on lime lacustrine clays underlain by heavy textured clay till. The drainage is typically poor (Hoffman and Richards 1955:73). Cashel clay refers to those soils of the Cashel catena developed on lime lacustrial clays underlain by heavy textured clay till. Occurrence on smooth, moderately sloping topography which aids drainage is characteristic of this type. The drainage is typically good (Hoffman and Richards 1955:70, 71). Pontypool sandy loam refers to those soils developed on poorly sorted calcareous materials deposited by glacio-fluvial action. Occurrence on irregular, steeply sloping topography is characteristic of this type. These soils are well drained to excessively drained (Hoffman and Richards 1955:47). Berrien sandy loam refers to the soils of the Bookton catena developed on sand and clay till outwash. The topography is smooth, gently sloping. The drainage is typically imperfect (Hoffman and Richards 1955:63, 64).

Table 1: Soils within the Project area

Soil	Characteristics	Drainage
Peel clay	Developed on stone free lacustrine materials	Imperfect
Milliken loam	Developed on medium textured shale and limestone till	Imperfect
Bottom land	Developed on recently deposited alluvium	Poor
Chinguacousy clay loam	Developed on mostly limestone but with notable shale content	Imperfect
Malton clay	Developed on lime lacustrial clays	Poor
Cashel clay	Developed on lime lacustrial clays	Good
Pontypool sandy loam	Developed on poorly sorted calcareous materials deposited by glacio-fluvial action	Well Drained to Excessively Well Drained
Berrien sandy loam	Developed on sand and clay till outwash	Imperfect

The Credit, Humber, Don, and Rouge Rivers have cut deep valleys through the Peel Plain physiographic region, as have other streams such as the Bronte, Oakville, and Etobicoke Creeks. The Project area is located within the Rouge River watershed (Map 5). The Project area occurs in an area between the Rouge River and the Bruce and Eckhardt Creeks, major tributaries of the Rouge. Parts of every section of the Project area occur within roughly 300 m of a source of potable water save for Section 2.1.

2.2.2 Summary of Registered or Known Archaeological Sites

According to the Ontario Archaeological Sites Database (OASD) maintained by the Ministry of Tourism, Culture and Sport, there are 43 registered archaeological sites within one kilometre of the Project area (Table 2). The majority were identified during cultural resource management (CRM) projects in advance of development since the 1990s. Only

12 of the sites (AlGu-463 (Peach 2), AlGu-457 (Glendower 3), AlGu-380 (Rice), AlGu-379 (McCague), AlGu-306 (Carlton Creek Northwest), AlGu-5 (Carlton Creek Northeast), AlGu-304 (Carlton Creek), AlGu-303 (Golden Tower), AlGu-302 (Dietzmann), AlGu-301 (Carver), AlGu-300 (Klinck) and AlGu-237) were identified within 300 m of the Project area (SD Map 22). These sites are discussed in detail in the following section.

Table 2: Registered Archaeological Sites within 1 km of the Project area

Borden Number	Site Name	Time Period	Affinity	Site Type	Current Development Review Status
AlGt-211	CNR Uxbridge 2	Post-Contact	Euro-Canadian	midden	
AlGt-262		Pre-Contact	Aboriginal	findspot	
AlGt-264		Pre-Contact	Aboriginal	findspot	
AlGt-265		Pre-Contact	Aboriginal	findspot	
AlGt-266		Pre-Contact	Aboriginal	findspot	
AlGt-267		Post-Contact	Euro-Canadian	Other privy, homestead	Further CHVI
AlGt-621		Post-Contact		homestead, midden	
AlGt-652		Pre-Contact	Aboriginal	Unknown	Further CHVI
AlGt-653		Post-Contact	Euro-Canadian	Unknown	No Further CHVI
AlGt-654		Post-Contact	Euro-Canadian	Unknown	No Further CHVI
AlGu-10	BUTTONVILLE	Pre-Contact	Aboriginal	Othercamp/campsite	
AlGu-11	BARKER	Other		Othercamp/campsite	
AlGu-12	Bruce Creek	Pre-Contact	Aboriginal	Othercamp/campsite	
AlGu-14	ALMIRA	Pre-Contact	Aboriginal	Othercamp/campsite	
AlGu-218	Neu	Post-Contact	Euro-Canadian	midden	Further CHVI
AlGu-220		Archaic, Late	Aboriginal	findspot	
AlGu-222		Pre-Contact	Aboriginal	findspot	
AlGu-237		Pre-Contact	Aboriginal	findspot	
AlGu-24	Nicholson	Woodland	Aboriginal	village	
AlGu-300	The Klinck Site	Post-Contact	Euro-Canadian	homestead	No Further CHVI
AlGu-301	Carver	Post-Contact	Euro-Canadian	dump	
AlGu-302	Dietzmann	Post-Contact	Euro-Canadian	homestead	No Further CHVI
AlGu-303	Golden Tower	Archaic, Late	Aboriginal	Othercamp/campsite	
AlGu-304	The Carlton Creek Site	Pre-Contact	Aboriginal	scatter	
AlGu-305	Carlton Creek Northeast	Archaic, Middle	Aboriginal	findspot	
AlGu-306	Carlton Creek Northwest	Pre-Contact	Aboriginal	findspot	
AlGu-322	Cathedral Town	Archaic, Middle	Aboriginal	findspot	
AlGu-354	Kizhep	Pre-Contact	Aboriginal	Othercamp/campsite	
AlGu-370	Baker	Post-Contact	Euro-Canadian	homestead	No Further CHVI
AlGu-371		Post-Contact		Unknown	Further CHVI
AlGu-373	AlGu-372	Pre-Contact		scatter	No Further CHVI
AlGu-374	AlGu-374	Pre-Contact		scatter	No Further CHVI
AlGu-375	AlGu-375	Pre-Contact		scatter	No Further CHVI
AlGu-376	AlGu-376	Pre-Contact		scatter	No Further CHVI
AlGu-377	AlGu-377	Pre-Contact		scatter	No Further CHVI
AlGu-386	Bawden-Wood I	Pre-Contact	Aboriginal		
AlGu-390	Barber 2				
AlGu-391	Barber's Pit				
AlGu-4	HEISE	Pre-Contact	Aboriginal	Othercamp/campsite	
AlGu-401	Glendower	Post-Contact			
AlGu-42					
AlGu-456	Glendower 2	Post-Contact			
AlGu-457	Glendower 3	Post-Contact			
AlGu-462	Peach 1				
AlGu-463	Peach 2	Post-Contact	Euro-Canadian		
AlGu-464	Peach 3				
AlGu-465	James Nigh	Post-Contact	Euro-Canadian	Otherhomestead, midden	
AlGu-466	Spring Family	Post-Contact	Euro-Canadian	homestead	

Borden Number	Site Name	Time Period	Affinity	Site Type	Current Development Review Status
AlGu-467	Teal Family	Post-Contact	Euro-Canadian	homestead	
AlGu-470	AlGu-470-P1	Paleo-Indian, Pre-Contact	Aboriginal	findspot	
AlGu-471	AlGu-471-P5	Archaic, Middle, Paleo-Indian	Aboriginal	scatter	
AlGu-472	Baker Dump	Post-Contact	Euro-Canadian	scatter	
AlGu-497	DeGear Site	Post-Contact	Euro-Canadian	homestead	No Further CHVI
AlGu-499	Rawn Site	Post-Contact	Euro-Canadian	homestead	Further CHVI
AlGu-500	Berczy H1 Site	Post-Contact	Euro-Canadian	homestead	Further CHVI
AlGu-502	Berczy H4 Site	Post-Contact	Euro-Canadian	homestead	Further CHVI
AlGu-505		Pre-Contact	Aboriginal	findspot	No Further CHVI
AlGu-510	Victoria Square 1	Post-Contact	Euro-Canadian	homestead	Further CHVI
AlGu-513					
AlGu-6	BARKER	Post-Contact, Woodland, Early	Aboriginal, Euro-Canadian	Othercamp/campsite	
AlGu-73	Ursa	Other		Otherfindspot	
AlGu-84	Bootes	Pre-Contact	Aboriginal	Unknown	
AlGu-90	Stong	Post-Contact	Euro-Canadian	homestead	
AlGu-91	McConnell	Post-Contact	Euro-Canadian	homestead	

2.2.3 Summary of Past Archaeological Investigations Within 50 Metres

During our background review it was established that nine archaeological projects had taken place within 50 metres of the Project area. As the Province does not currently maintain an accessible database of archaeological assessment areas *per se*, it is not known whether this is a complete inventory of archaeological assessment activities undertaken within 50 metres of the Project area.

An archaeological assessment was conducted in 1986 and 1987 by the MIA for a property comprised of parts of Lots 18, 19 and 20, Concession 3 east of Highway 404 (SD Map 21). This assessment overlaps with portions of Segment 2.2 Preferred Preliminary Route and Segment 2.2 Alternate Route of the current project area; however, the area to the southwest of the intersection of Major Mackenzie Drive and Woodbine Avenue was not mapped as assessed in MIA's previous work. As such, it is not clear if this area was actually assessed. Assessment of the property included a pedestrian survey at 5 m transect intervals of the ploughed fields west of the Rouge River within Lots 18 and 19 and the ploughed field east of the Rouge within Lot 19. A test pit survey at 5 m transect intervals was conducted in the unploughed areas east of Highway 404 within Lots 18, 19 and 20 and the area immediately southwest of the intersection of Major Mackenzie Drive and Woodbine Avenue within Lot 20. This survey resulted in the recovery of a single fragment of a large biface made on Onondaga chert from Lot 19. This find was registered and Bordenized as AlGu-42. A small collection of mid to late 19th century artifacts was recovered from Lot 19 in association with a house foundation dated to 1866. These finds were not deemed to have significant heritage value and no further work was recommended. The details of this work were presented in an interim report entitled *Interim Report on an Archaeological Assessment of Parts of Lots 18, 19 and 20, Concession 3, Town of Markham* (MIA 1987; Licence Number 86-24) and a final report entitled *Report on the Completion of an Archaeological Assessment of Parts of Lots 18, 19 and 20, Concession 3, Town of Markham* (MIA 1987; Licence Number 87-40).

An archaeological assessment was conducted in 1989 by the Museum of Indian Archaeology (MIA; now Museum of Ontario Archaeology) for a property occupying the southeastern portion of Lot 17, Concession 3 in advance of the development the Buttonville Business Park (19T-87108) (SD Map 17). This assessment overlaps with portions of Segment 2.2 Alternate Route of the current project area. The assessment consisted of a pedestrian survey in transects at 5 m intervals with the ploughed fields in the eastern third of the property. The golf course in the western half of the property and the areas surrounding the Rouge River were not surveyed. No archaeological resources were recovered. The details of this work were presented in a report entitled *Archaeological Assessment of Draft Plan of Subdivision 19T-87108 forming part of the proposed Buttonville Business Park, Town of Markham* (MIA 1990; Licence Number 89-160B)

An archaeological assessment was conducted in 1989 by the MIA for three properties to be impacted by the Buttonville Business Park development (19T-87109, 19T-87110 and 19T-87111) (SD Maps 18, 19 and 20). The properties occupied part of Lots 16, 17, 18 and 19, Concession 3. This assessment overlaps with portions of Segment 2.2. Preferred Preliminary Route and Segment 2.2 Alternate Route of the current project area. Assessment of the lands of Draft Plan 19T-87109 was confined to a pedestrian survey at 5m transect intervals of two ploughed fields along the eastern edge of the property. Assessment of the lands of Draft Plan 19T-87110 consisted of a pedestrian survey at 5 m transect intervals of the ploughed fields in the central portion of the property and test pit survey at 5m transect intervals of a triangular shaped woodlot on a plateau on the west side of the Rouge River. Assessment of the lands of Draft Plan 19T-87111 consisted of a pedestrian survey at 5m transect intervals of the entire parcel which had been ploughed. No archaeological resources were recovered. The details of this work were presented in a report entitled *Archaeological Assessment of Draft Plan of Subdivisions 19T-87109, 19T-87110 and 19T-87111 forming parts of the proposed Buttonville Business Park, Town of Markham* (MIA 1991; Licence Number 89-160B)

A Stage 1 and 2 assessment was conducted in 2001 by Archeoworks Inc. for a 27.7 hectare property located within Lots 22 and 23, Concession 4 as part of the East Cathedral Town Community development. The Stage 2 survey resulted in the recovery of one isolated precontact findspot (AlGu-237) and a small collection of 19th-century artifacts (SD Map 10). AlGu-237 findspot consists of an isolated biface, possibly an end scraper which is likely made on Onondaga chert. AlGu-237 was not recommended for Stage 3 assessment. Due to the low yield and non-diagnostic nature of the 19th-century cluster, this area was not registered as an archaeological site or recommended for Stage 3 assessment. The detailed results of this work are presented in a report entitled *Stage 1-2 Archaeological Assessment of 27.7 Hectare Property Part of Lots 22 & 23, Concession 4, 19TM-01002 Woodbine Avenue/Major Mackenzie Drive, East Cathedral Community, Town of Markham, Regional Municipality of York, Ontario* (Archeoworks Inc. 2001; licensee Kim Slocki CIF#2001-015-004)

A Stage 1 and 2 archaeological assessment was conducted in 2001 and 2003 by ASI on part of Lots 23, 24 and 25, Concession 3 for the Cathedraltown Subdivision (SD Map

11). This assessment overlaps with parts of Segment 2.2 Preferred Preliminary Route, Segment 2.3 Preferred Preliminary Route, Segment 2.3 Alternate Route, and Segment 2.4 Preferred Preliminary Route. The Stage 2 survey resulted in the discovery of six archaeological sites and one findspot: AlGu-300 (Klinck), AlGu-301 (Carver), AlGu-302 (Dietzmann), AlGu-304 (Carlton Creek), AlGu-305 (Carlton Creek Northeast), AlGu-306 (Carlton Creek Northwest) and findspot P7. All six of these archaeological sites and the one findspot are within 300 m of the current Project area and have been cleared of archaeological concern.

AlGu-304 is divided into two loci separated by 25 m. The northern locus comprised two pieces of lithic debitage and one biface midsection within a 15 m diameter area. The southern comprised two pieces of lithic debitage and one scraper. AlGu-305 comprised a single isolated side-notched projectile point found 330 m north of AlGu-304. AlGu-306 comprised a single isolated biface fragment found 200 m to the west of AlGu-305. Findspot P7 consists of an isolated piece of Onondaga chert shatter. This findspot was not registered as an archaeological site. AlGu-300 is comprised of a diffuse scatter of over 100 19th-century artifacts over a 60 m x 80 m area. A sample of 20 artifacts was collected which indicate an early to mid-19th century date for the site. AlGu-301is comprised of a small scatter of 10 19th-century artifacts over a 10 m diameter area. A sample of six artifacts was collected which indicate a late 19th-century date for the site. AlGu-302 is comprised of a diffuse scatter of 18th and 19th-century artifacts over a 40 m x 50 m area. A sample of 11 artifacts was collected that indicates a late 18th to early 19th century date for the site. AlGu-304, AlGu-302, and AlGu-300 were recommended for Stage 3 assessment. AlGu-305, AlGu-306, AlGu-301, and findspot P7 were not recommended for Stage 3 assessment. The detailed results of this work are presented in a report entitled *Stage 1-2 Archaeological Assessment of Cathedraltown Subdivision Revised Draft Plan 19TM-01001, Part of Lots 23, 24 and 25, Concession 3, Geographic Township of Markham, Town of Markham, Regional Municipality of York, Ontario* (ASI 2003; licensee Martin Cooper CIF#2001-020-007)

In 2003, ASI began a Stage 3 assessment of AlGu-302. The Stage 3 assessment began with a CSP of the reploughed surface of the site area; this resulted in the recovery of 232 artifacts. The CSP was followed by the excavation of 13 one by one metre test units across the site area to determine the site's extent. Stage 3 excavations resulted in the recovery of 279 artifacts. Artifacts recovered during Stage 3 included architectural and domestic wares (SD Map 12). Stage 4 work at AlGu-302 in 2003 consisted of topsoil stripping within the densest part of the site area as determine by the CSP results. A total of 10 features were observable in the stripped area (SD Map 14). These were excavated and recorded resulting in the recovery of an additional 54 artifacts. Analysis of artifacts and archival materials confirmed that AlGu-302 represented a brief occupation of the widow Frau Dietzmann and her son John in a log cabin on the property from roughly 1796-1816. Archaeological evidence suggested that the cabin as occupied later into the 1830s or used as a dump in the 19th century.

In 2003, ASI began a Stage 3 assessment of AlGu-300. The Stage 3 assessment began with a CSP of the reploughed surface of the site area; this resulted in the recovery of 466 artifacts. The CSP was followed by the excavation of eight one by one metre test units across the site area to determine the site's extent. Test unit excavation resulted in the recovery of 325 artifacts including ceramics, bone and window glass fragments characteristic of 19th century domestic sites (SD Map 13). Stage 4 work at AlGu-300 in 2003 consisted of topsoil stripping and the documentation of 27 cultural features (SD Map 15). A total of 2,373 artifacts were recovered during Stages 3 and 4 excavation; 466 from the surface, 335 from the plough zone and backdirt and 1,572 from features. Analysis of the artifacts and archival materials confirmed that AlGu-300 represented a re-occupation of Lot 24, Con 3 circa 1837 to the 1870s by the Klinck family who inhabited a log cabin.

The detailed results of the Stage 3 and 4 work at AlGu-302 and AlGu-300 are presented in a report entitled *Stages 3 & 4 Archaeological Excavation of the Klinck (AlGu-300) and the Dietzmann (AlGu-302) Sites, Draft Plan of Subdivision 19T M-01001, Part of Lots 23, 24 and 25, Concession 3, Geographic Township of Markham, Now the Town of Markham, Ontario* (ASI 2006; licensee Eva MacDonald CIF#P125-045)

It should be noted that a Stage 3 archaeological assessment of AlGu-304 was undertaken by ASI in 2004. As of the time of the production of this report we were unable to obtain a copy of said report. It is not clear whether or not Stage 4 assessment was recommended for AlGu-304. The detailed results of the Stage 3 work at AlGu-304 is presented in a report entitled *Stage 3 Archaeological Investigation of The Carlton Creek Site (AlGu-304), Draft Plan of Subdivision 19TM-01001, Part of Lots 23, 24 & 25, Concession 3, Geographic Township of Markham, Now the Town of Markham, Regional Municipality of York, Ontario* (ASI 2004; licensee Bruce Welsh P047-013)

A Stage 1 and 2 archaeological assessment was conducted in 2004 by ASI for the proposed Cathedral Town Development (SD Map 7). This assessment overlaps with Segment 2.2 Preferred Preliminary Route of the current project area. This assessment reported on and further documented a previously identified archaeological site and discovered one additional findspot: AlGu-303 (Golden Tower) and the AlGu-322 (Cathedral Town) findspot (SD Map 8). AlGu-303 occurs within 300 m of the current Project area. AlGu-303 had previously been identified and sampled in 2001 by ASI during a Stage 2 assessment of neighbouring lands which were also to form a part of the Cathedral Town Development. A total of 48 artifacts including 47 pieces of lithic debitage and one bone were collected in 2001. In 2003, ASI returned to the site and collected an additional five pieces of lithic debitage. It was later determined that the site lay outside of the assessment area. The 2001 and 2003 documentation of AlGu-303 was reported later alongside with the 2004 Stage 2 work. A total of seven pieces of lithic debitage and a late Archaic period Genesee point were recovered from the site during Stage 2 pedestrian survey in 2004. The artifacts recovered from AlGu-303 came from a 40 m x 40 m area and the site was recommended for Stage 3 assessment. The detailed results of the 2004 as well as the earlier 2001 and 2003 work are presented in a report entitled *Stage 1 and 2 Archaeological Assessment of Cathedral Town Development, Part of Lots 22, 23 and 24,*

Concession 3, Geographic Township of Markham, County of York, Town of Markham, Regional Municipality of York (ASI 2005; licensee Debbie Steiss; P049-112, P049-123, P049-124).

A Stage 3 assessment of AlGu-303 was conducted in 2005 by AASI. The Stage 3 assessment included the excavation of 22 one by one metre test units across the site and resulted in the recovery of 21 artifacts (SD Map 9). No cultural features or additional diagnostic artifacts were recovered. AlGu-303 was not recommended for Stage 4 mitigation. The detailed results of this work are presented in a report entitled *Stage 3 Assessment of the Golden Tower Site (AlGu-303), Lot 24, Concession 3 (Geographic Township of Markham, County of York), Town of Markham, Regional Municipality of York* (ASI 2005; licensee Bruce Welsh P047-126).

A Stage 1 and 2 archaeological assessment was conducted in 2007 by Archaeological Assessments Ltd. for 11160 Woodbine Avenue (SD Map 1). The assessment consisted of archival and map-based research as well as Stage 2 pedestrian and test pit survey. This survey overlaps with Phase 1 Preferred Preliminary Route, Phase 1 Alternate Route, Segment 2.1 Preliminary Preferred Route, and Segment 2.1 Alternate Route of the current project. This assessment identified two archaeological sites: AlGu-379 (McCague), a mid-19th century domestic site, and AlGu-380 (Rice), an early Archaic period findspot. AlGu-379 consisted of 38 artifacts recovered from a 40 m x 40 m area in an agricultural field and was recommended for Stage 3 assessment. AlGu-380 consisted of an isolated early Archaic period bifurcate base point made from Onondaga chert. No additional artifacts were located in the surrounding area within a 25 m radius of the find. AlGu-380 was not recommended for Stage 3 assessment. The details of this work were presented in a report entitled *The Stage 1-2 Archaeological Assessment of 11160 Woodbine Avenue, Part of Lot 28, Conc 3, and Part of Honda Boulevard and the Woodbine Bypass, Part of Lots 27 & 28, Conc 3, Town of Markham, Regional Municipality of York* (Archaeological Assessment Ltd. 2008; licensee Rick Sutton P013-377-2007).

In 2008, Archaeological Assessments Ltd. began a Stage 3 assessment of AlGu-379. This site is located within Phase 1 Preferred Preliminary Route and Phase 1 Alternate Route of the current project. The Stage 3 assessment began with a controlled surface pickup (CSP) of the reploughed surface of the site area resulting in the recovery of 118 artifacts. The site as is existed on the ploughed surface measured 24 m x 46 m. The CSP was followed by the excavation of 20 one by one metre test units across the site area. Stage 3 excavations resulted in the recovery of 760 artifacts (SD Map 2). Stage 4 work at AlGu-379 was completed in 2008 consisted of topsoil stripping and feature documentation. A total of six features and 12 post moulds were observable in the stripped area (SD Map 3). The features were excavated and recorded resulting in the recovery of an additional 271 artifacts. Analysis of artifacts and archival materials confirmed that AlGu-379 represents the location of a small homestead occupied by John McCague and his family in the 1840s and 1860s. The detailed results of the Stage 3 and 4 work at AlGu-379 (McCague) are presented in a report entitled *The Stage 3-4 Excavations of the McCague Site (AlGu-379), 11160 Woodbine Avenue, Part Of Lot 28, Concession 3, And Part Of Honda Boulevard*

And The Woodbine Bypass, Part Of Lot 27 & 28, Concession 3, Town Of Markham, Regional Municipality Of York (Archaeological Assessment Ltd. 2010; licensee Rick Sutton P013-410-2007).

Stage 1 to 3 archaeological assessments were conducted in 2008 and 2009 by This Land Archaeology Inc. for Glendower Properties Inc.'s land in Markham, part of Lots 28 and 29, Concession 4 in Regional Municipality of York (SD Map 4). The Stage 1 assessment determined that the property demonstrated potential for the discovery of archaeological resources. As such, a Stage 2 archaeological assessment was recommended. The Stage 2 archaeological assessment consisted of a pedestrian survey of the agricultural fields. Three small fields adjacent to Woodbine Avenue and two fields at the rear of the properties were not assessed at that time. This assessment identified three archaeological sites: AlGu-401 (Glendower), AlGu-456 (Glendower 2), and AlGu-457 (Glendower 3) as well as a single isolated Brewerton side-notched projectile point. AlGu-401 consisted of an artifact scatter derived from an early to mid-19th century farmstead. AlGu-456 was a large scatter derived from an early to mid-19th century farmstead. AlGu-457 was a small scatter derived from a mid to late 19th century homestead. All three of these sites were recommended for Stage 3 assessment.

Stage 3 assessment consisted of archival and map-based research as well as a CSP at each site. The CSP at AlGu-401 resulted in the recovery of 392 artifacts from a 1.12 acre area including a single Brewerton projectile point found 570 m southwest of the site. The CSP at AlGu-456 resulted in the recovery of 1,886 artifacts from a 0.7 acre area including two primary Onondaga chert flakes. The CSP at AlGu-457 resulted in the recovery of 113 artifacts from a 0.2 acre area (SD Map 5). AlGu-401 and AlGu-456 required Stage 3 test excavation to complete the Stage 3 assessment. The AlGu-457 was not recommended for Stage 3 test excavation as it dates to the mid-to-late 19th century. The details of the Stage 1-3 work conducted are presented in a report entitled *REVISED report on the 2008 and 2009 Stage 1 to 3 Archaeological Assessment of Glendower Properties Inc.'s Property, part of Lots 28 and 29, Concession 4, Town of Markham, Regional Municipality of York, Ontario, AlGu-401; AlGu-456, AlGu-457* (This Land Archaeology Inc. 2013; licensee William Finlayson P059-135-2009, P059-135-2009-STG3, P059-080-2008, P059-080-2008-STG3). Additional fieldwork at AlGu-401 and AlGu-456 is ongoing at the time of the production of this report (This Land Archaeology Inc., personal communication, January 23, 2019).

A Stage 1 and 2 archaeological assessment was conducted in 2010 and 2011 by Archaeological Services Inc. (ASI) for a 5 hectare property at 10975 Woodbine Avenue within Lot 27, Concession 4. The Stage 2 survey resulted in the discovery of three archaeological sites: AlGu-462 (Peach 1), AlGu-463 (Peach 2) and AlGu-464 (Peach 3) (SD Map 6). AlGu-463 occurs within 300 m of the current Project area. AlGu-463 consists of 118 artifacts from 11 test pits measuring 12 m x 13 m. The site dates to the mid-to-late 19th century and was recommended for Stage 3 assessment. The detailed results of this work are presented in a report entitled *Stage 1 and 2 Archaeological Assessment of Part of Lot 27, Concession 4 Geographic Township of Markham, County of York, Town of*

Markham, Regional Municipality of York (ASI 2012; licensee Debbie Steiss and Andrew Riddle; P049-601-2010/P347-052-2011).

A Stage 3 archaeological assessment of AlGu-463 was conducted in 2011 by ASI. The Stage 3 assessment included the excavation of nine one-metre square test units placed across a 10 m x 10 m area that encompassed the Stage 2 test pits (SD Map 7). Stage 3 excavations resulted in the recovery of a mixed assemblage of 2,330 19th- and 20th- century artifacts. Excavations revealed that soil alterations had taken place in the area that had significantly impacted the archaeological integrity of the site. AlGu-463 was not recommended for Stage 4 mitigation. The detailed results of this work are presented in a report entitled *Stage 3 Archaeological Assessment of The Peach 2 Site (AlGu-463) 10975 Woodbine Ave, Part of Lot 27, Concession 4, Geographic Township of Markham, County of York, Town of Markham, Regional Municipality of York, Revised Report* (ASI 2014; licensee Eva MacDonald; P125-072-2011).

A Stage 1 archaeological assessment was conducted in 2016 by Golder Associates Ltd. for the York Downs Golf Club at 4134 16th Avenue, City of Markham (SD Map 16). The assessment consisted of archival and map-based research as well as Stage 1 property assessment. The Stage 1 assessment determined that the majority of the property exhibited potential for the recovery of intact archaeological deposits and Stage 2 survey was recommended for the identified areas of archaeological potential. The details of this work were presented in a report entitled *Stage 1 Archaeological Assessment York Downs Golf Club, Parts of Lot 16, 17 and 18, Concession 5, Geographic Township of Markham, County of York, Now 4134 16th Avenue, City of Markham, Ontario* (Golder Associates Ltd. 2016; licensee Jamie Lemon P1056-0049-2015).

2.2.4 Dates of Archaeological Fieldwork

The property inspection was conducted on January 17, 2019, in unseasonal overcast and cool weather conditions. The weather conditions allowed for good visibility for the inspection of the surface features. The field directors for the property inspection were Liam Browne (P1048) and Matthew Severn (R1093).

2.3 Project Context: Historical Context

2.3.1 First Peoples Settlement in Markham

There is archaeological evidence of First Peoples settlement in Markham since the time of glacial retreat some 12,000 years ago through to the modern era. Nonetheless, our knowledge of past native land use in the area is incomplete due primarily to a lack of archeological investigation of many areas prior to urban development. Nonetheless, using province-wide and region-specific data, a general model of First Peoples settlement in the area can be proposed. The following paragraphs provide a basic textual summary of the known general cultural trends and archaeological periods and a tabular summary appears in Table 3.

Table 3: Cultural Chronology for First Peoples Settlement in the Markham

Period			Time Range (circa)	Diagnostic Features	Complexes
Paleoindian	Early		9000-8400 B C	Fluted projectile points	Gainy, Barnes, Crowfield
	Late		8400-8000 B C	Non-fluted and lanceolate points	Holcombe, Hi-Lo, Lanceolate
Archaic	Early		8000-6000 B C	Serrated, notched, bifurcate base points	Nettling
	Middle		6000-2500 B C	Stemmed, side & corner notched points	Brewerton, Otter Creek, Stanley/Neville
	Late		2000-1800 B C	Narrow points	Lamoka
			1800-1500 B C	Broad points	Genesee, Adder Orchard, Perkiomen
			1500-1100 B C	Small points	Crawford Knoll
	Terminal		1100-950 B C	First true cemeteries	Hind
Woodland	Early		950-400 B C	Expanding stemmed points, Vinette pottery	Meadowood
	Middle		400 B C - A D 500	Dentate, pseudo-scallop pottery	Saugeen
	Transitional		A D 500-900	First corn, cord-wrapped stick pottery	Princess Point
	Late	Early Iroquoian	A D 900-1300	First villages, corn horticulture, longhouses	Glen Meyer, Pickering
		Middle Iroquoian	A D 1300-1400	Large villages and houses	Uren, Middleport
		Late Iroquoian	A D 1400-1650	Tribal emergence, territoriality	Neutral Iroquois, Wendat
Contact		Aboriginal	A D 1650-1875	Treaties, mixture of Native & European items	Six Nations/Mississaugas, Seneca
		Euro-Canadian	A D 1796 - present	English goods, homesteads	European settlement, pioneer life

Paleoindian Period

The first human populations to inhabit the area came to the region between 10,000 and 12,000 years ago, coincident with the end of the last period of glaciation. Climate and environmental conditions were significantly different than they are today; local environs would not have been welcoming to anything but short-term settlement. Termed Paleoindians by archaeologists, Ontario's first peoples would have crossed the landscape in small groups (i.e., bands or family units) searching for food, particularly migratory game species. In this area, caribou may have provided the staple of Paleoindian diet, supplemented by wild plants, small game and fish. Given the low density of populations on the landscape at this time and their mobile nature, Paleoindian sites are small and ephemeral. They are usually identified by the presence of distinctive fluted projectile points, usually manufactured on high quality raw materials, including Onondaga chert from the Niagara Escarpment and Fossil Hill chert from Blue Mountains.
Paleoindian sites have commonly been found in association with relic glacial lakeshores throughout Ontario.

Archaic Period

Settlement and subsistence patterns changed significantly during the Archaic period as both the landscape and ecosystem adjusted to the retreat of the glaciers. Building on earlier patterns, early Archaic populations continued the mobile lifestyle of their predecessors. Through time and with the development of more resource rich local environments, these groups gradually reduced the size of the territories they exploited on a regular basis. A seasonal pattern of warm season riverine or lakeshore settlements and interior cold weather occupations has been documented in the archaeological record. The large cold-weather mammals that formed the basis of the Paleoindian subsistence pattern

became extinct or moved northward with the onset of warmer climate conditions. Thus, Archaic populations had a more varied diet, exploiting a range of plant, bird, mammal and fish species. Over time, reliance on specific food resources like fish, deer and nuts became more pronounced and the presence of more hospitable environments and resource abundance led to the expansion of band and family sizes. This is evident in the archaeological record in the form of larger sites and aggregation camps, where several families or bands would come together in times of plenty. The change to more preferable environmental circumstances led to a rise in population density. As a result, Archaic sites are more plentiful than those from the earlier period. Artifacts typical of these occupations include a variety of stemmed and notched projectile points, chipped stone scrapers, ground stone tools (e.g., celts, adzes) and ornaments (e.g., bannerstones, gorgets), bifaces or tool blanks, animal bone (where and when preserved) and waste flakes, a by-product of the tool making process.

Early, Middle and Transitional Woodland Periods

Significant changes in cultural and environmental patterns are witnessed in the Early, Middle and Transitional Woodland periods (ca. 950 B.C. to A.D. 1000). Occupations became increasingly more permanent in this period, culminating in major semi-permanent villages by 1,000 years ago. Archaeologically, one of the most significant changes by Woodland times is the appearance of artifacts manufactured from modeled clay and the emergence of more sedentary villages. The Woodland Period is often defined by the occurrence of pottery, storage facilities and residential areas similar to those that define the early agricultural or Neolithic period in Europe. The earliest pottery was crudely made by the coiling method and early house structures were simple oval enclosures. Both the Early and Middle Woodland sub-periods are characterized by an elaborate burial complex that in some areas in Ontario involved the construction of large burial mounds. Trade in exotic items, including rare stone and shell objects, became common at this time, reflecting interconnections between Ontario populations and those in the Ohio and Mississippi river valleys to the south.

Late Woodland – Iroquoian Period

Beginning circa A.D. 1000 the archaeological record documents the emergence of more substantial, semi-permanent settlements and the adoption of corn horticulture. These developments are most often associated with Iroquoian-speaking populations, the ancestors of the Wendat (Huron), Tionontati (Petun) and Attawandaron (Neutral) nations who were known to have resided in the province at the time of the arrival of the first European explorers and missionaries. Iroquoian villages incorporated a number of longhouses, multi-family dwellings that contained several families related through the female line. Precontact Iroquoian sites may be identified by a predominance of well-made pottery decorated with various simple and geometric motifs, triangular projectile points, clay pipes and ground stone artifacts. Sites post-dating European contact are recognized through the appearance of various items of European manufacture. The latter include materials acquired by trade (e.g., glass beads, copper/brass kettles, iron axes, knives and other metal implements) in

addition to the personal items of European visitors and Jesuit missionaries (e.g., finger rings, stoneware, rosaries, and glassware).

Recent Historic Period

When European explorers and missionaries arrived in Ontario in the 17th century, the Wendat no longer inhabited the York area and instead, occupied a vast area between Lake Simcoe and Georgian Bay. By 1650, many Wendat had fled due to the onset of epidemic disease and increasing raids by Five Nations Iroquois groups who had established an increasing presence along Lake Ontario. At least two major Seneca villages were established on the Rouge River later that century. At the same time, Algonquian-speaking populations were utilizing the watershed for hunting and trapping. By the 17th century, the Seneca no longer inhabited the Lake Ontario shores and the Algonquin-speaking Mississaugas began moving southward into the area. It was the Mississaugas who had settled the area by the time the British arrived in the late 18th century.

2.3.2 19th Century and Municipal Settlement

The Project area lies within parts of Lots 16 to 28, Concession 3, Lots 16 to 23 and 28, Concession 4, Lots 10, 11, 13 and 14, Concession 5, in the Geographic Township of Markham, City of Markham, Regional Municipality of York, Ontario. A brief discussion of 19th century and municipal settlement in the City of Markham is provided below, as a means of providing general context for understanding former land use.

The early county of York was a contested area of significance for the Iroquois and Huron of Ontario. This significance was attributed to the area because of the Holland River's importance as a transportation route and the surrounding marshes importance as a source of game (Rolling 1966:11). The earliest Europeans in the region were the French, who used the area as an important trading area with the local First Nations and valued the Holland River as a transportation route between Lake Simcoe and Georgian Bay. The British gained control of the region in 1759 and rapidly began preparing the region for settlement. Governor Simcoe commissioned Augustus Jones to survey the County in 1794, focusing around Yonge Street, a former native trail. The earliest settlement was focused around Yonge Street and it became an important transportation route during the War of 1812 (Rolling 1966:12).

Governor Simcoe pushed for the settlement of Markham Township by "stable, loyal pioneers" (Champion 1979:11) and rapidly attracted the Berczy Settlers. These were settlers from various German states who initially moved to the Genesee Tract in New York State. Markham Township was surveyed in 1793-94 (Champion 1979:7), and the Berczy Settlers received their grant in 1794 (Champion 1979:13). There were severe crop failures in 1795-96 and many settlers died or chose to return to New York State; however, many families remained in Markham Township (Champion 1979:16). Several other immigrant groups settled within Markham Township during the early 19th century, such as the French Emigrés, Pennsylvania Dutch, Irish and Scottish, and Americans. Because of the poor

condition of many of the early roads, settlement focused around rivers like the River Rouge and tributaries of the Don River (Robinson 1885:115).

The 1860 York County maps and the 1878 York County maps depict the owners or occupants of the various lots and concession of the Project area (Maps 7 and 8). Tables 4 and 5 list the owners/occupants and any notable features of each lot or part lot occurring with the Project area by segment.

Table 4: 1860 York County Map Lot and Concession Information Preliminary Preferred Route

Preliminary Preferred Route	City of Markham					
	Lot	Conc.	Name	Structure?	Portion	Notes
Phase 1 0	27	III	Widow Heise	No	NE ¼	
	28	III	John McCague	No	E ½	
	28	IV	Henry Lever	Yes	W ¼	House outside of PA
Segment 2 1	27	III	Widow Heise	No	NE ¼	
	27	III	Christopher Heise	No	SE ¼	
	26	III	Christopher Heise	Yes		House and shops outside of PA
Segment 2 2	18	III	Peter Wilmot	No	SW ⅛	Open roadway runs between part lots towards Concession II
	18	III	Mrs White	No	NE ⅛	
	19	III	William White	No	E Edge	
	20	III	Robert Grandy	No	E ½	
	21	III	Christian Henrick	Yes		House and saw mill outside of PA
	22	III	Christian Henrick	Yes	E ½	House outside of PA
	23	III	William Frisby	No	E ½	
	16	IV	Thomas Frisby	No	NW ¼	
	17	IV	William Jacques	No		
	18	IV	John Fierheller	No	W ½	
	19	IV	Thomas Gawly	No		
	20	IV	Hilery Clarkson Esq	Yes	N ½	Outside of PA
	20	IV	George Nichols	Yes	S½	House within PA
	21	IV	William Wonch	Yes	W ½	School house within PA
	22	IV	George Savage	No	NW ⅛ of W½	
	22	IV	Joseph Galloway	No	SC ⅛ of W½	
	22	IV	Peter Ramohr	No	NC ⅛ of W½	
	22	IV	John Payne	Yes	NW ⅛ of W½	House outside of PA
	23	IV	Hugh Robinson	Yes	SW ¼	House outside of PA
Segment 2 3	24	III	Abraham Horner	Yes	NE ¼	House outside of PA
	24	III	Widow Klink	No	SE ¼	
	25	III	Jason Stautenburgh	Yes	E ½	Store and Wesleyan Methodist church outside of PA
Segment 2 4	23	III	William Frisby	No	E ½	
	24	III	Widow Klink	No	SE ¼	
Segment 2 5	10	V	Jeremiah Sheridan	Yes	W ½	House outside of PA
	11	V	Peter Hummingdon	No	W ½	
Segment 2 6	13	V	Jacob Size	No	W ½	
	14	V	Anthony Size	Yes		Shops outside of PA
Segment 2 7	20	IV	Hilery Clarkson Esq	Yes	N ½	House outside of PA
	21	IV	William Wonch	Yes	W½	School house in Segment 2 2 of PA
	21	IV	Robert Grundy	No	E ½	
Disconnect 1	21	IV	William Wonch	Yes	W ½	School house in Segment 2 2 of PA
Disconnect 2	15	V	Charles McLean	No	E ½	
Disconnect 3	2	V	Townplot	Yes	E End	Townplot
Disconnect 4	11	VI	George Eckhardt	No	E ½	

Table 5: 1878 York County Map Lot and Concession Information Preliminary Preferred Route

Preliminary Preferred Route	City of Markham					
	Lot	Conc.	Name	Structure?	Portion	Notes
Phase 1 0	27	III	Edward McKenzie	No	NE ¼	House outside of PA
	28	III	John McCague	Yes		House outside of PA
	28	IV	Henry Cross	Yes	W ¼	Two houses outside of PA
Segment 2 1	27	III	Edward Mackenzie	Yes	NE ¼	House outside of PA
	27	III	Christopher Heise	No	SE ¼	
	26	III	Christopher Heise	Yes		Two houses with orchards, post office and shops outside of PA
Segment 2 2	18	III	Moses White	Yes	SE ½	House outside of PA but orchard within PA Open roadway runs between part lots towards Concession II
	18	III	Abraham Henrick	Yes	NE ⅛	House outside of PA Open roadway runs between part lots towards Concession II
	19	III	Illegible	Yes	SE Edge	House within PA
	19	III	William White	Yes	NE Edge	House within PA
	20	III	Edward Sanderson	Yes	E ½	Two houses Eastern house adjacent to PA
	21	III	Henry White	No	NE ¼	
	21	III	Jacob White	Yes	SE ¼	House outside of PA
	22	III	John Gormley	Yes	E ½	Structure in interior of lot House and orchard adjacent to PA
	23	III	John Foster	Yes	E ½	House outside of PA
	16	IV	Thomas Frisby	Yes	NW ¼	House outside of PA
	17	IV	Johnson Wilson	Yes		House outside of PA
	18	IV	William Calvert	Yes	W ½	House outside of PA Private roadway within PA
	19	IV	Jason and William Lundy	No	S ½	
	19	IV	Gauly Estate	Yes	N ½	House and orchard outside of PA
	20	IV	George Nichols	Yes	S ½	House outside of PA
	20	IV	Henry Brethaur	Yes	N ½	Two houses outside of PA
	21	IV	William Lawson	Yes	SW ¼	House and orchard outside of PA
	22	IV	George Nichol	No	NW ¼	House outside of PA School house within PA
	22	IV	Henry Jenning	Yes	SW ⅛ of W½	House adjacent to PA
	22	IV	Moses Gamble	Yes	⅛ of W½	House adjacent to PA
	22	IV	Unattributed Severance	Yes	Parcel at W Edge	House outside of PA
	22	IV	Joshua Ellerby	Yes	NW ¼	Two houses outside of PA
	23	IV	David Eyer	Yes	W ½	Two houses outside of PA
Segment 2 3	24	III	Thomas Klink	Yes	E ½	House and orchard, interior structure outside of PA
	25	III	Jason Stautenburgh	Yes	E ½	House and Wesleyan Methodist church outside of PA
Segment 2 4	23	III	John Foster	Yes	E ½	House outside of PA
	24	III	Thomas Klink	Yes	E ½	House and orchard, interior structure outside of PA
Segment 2 5	10	V	Hewlett Kennedy	Yes	W ½	House and orchard outside of PA
	11	V	George Amos	Yes	E ½ of W ½	House and orchard outside of PA
Segment 2 6	13	V	Jacob Size	Yes	W ½	House outside of PA
	14	V	Anthony Size	Yes		Shops outside of PA
Segment 2 7	20	IV	Henry Brethaur	Yes	N ½	Two houses outside of PA
	21	IV	William Lawson	Yes	W½	House outside of PA
	21	IV	Grundy Estate	No	E ½	
Disconnect 1	21	IV	William Lawson	Yes	SW ¼	House and orchard outside of PA
Disconnect 2	15	V	Marshall Crosby	Yes	E ½	House and orchard outside of PA
Disconnect 3	2	V	Townplot	Yes	E End	Grist mill within PA
Disconnect 4	11	VI	Eckhardt Estate	Yes	E ½	House and orchard outside of PA

Table 6: 1860 York County Map Lot and Concession Information Alternative Route

Alternative Route	City of Markham					
	Lot	Conc.	Name	Structure?	Portion	Notes
Phase 1 0	28	III	John McCague	No	E ½	
	28	IV	Henry Lever	Yes	W ¼	House and outside of PA
Segment 2 1	26	III	Christopher Heise	Yes	E ½	House and shops outside of PA
	27	III	Christopher Heise	No	SE ¼	
	27	III	Widow Heise	No	NE ¼	
	28	III	John McCague	Yes	E ½	
Segment 2 2	16	IV	Thomas Frisby	No	NW ¼	
	17	IV	William Jacques	No	Whole	
	16	III	James Walker	No	E ½	
	17	III	John Fierheller	No	E ½	
	18	III	Peter Wilmot	Yes	NW ¼ of E ½, S ½ of E ½ and SW ¾ of W ½	House outside of PA Open roadway within PA
	19	III	Jacob White	No	SE ¼ of E ½	
	19	III	Hiram White	Yes	NE ¼ of E ½	House outside of PA
	20	III	Robert Grandy	No	E ½	
	21	III	Christian Hendrick	Yes	Whole	Sawmill and house outside of PA
Segment 2 3	22	III	Christian Hendrick	Yes	S ½	House outside of PA
	23	III	William Frisby	No	E ½	
	24	III	Widow Klinck	No	SE ¼	Private roadway within PA
	24	III	Abraham Horner	No	NE ¼	Private roadway within PA

Table 7: 1878 York County Map Lot and Concession Information Alternative Route

Alternative Route	City of Markham					
	Lot	Conc.	Name	Structure?	Portion	Notes
Phase 1 0	28	III	John McCague	Yes	Whole	House outside of PA Private roadway within PA
	28	IV	Henry Cross	Yes	W ¼	Two houses outside of PA
Segment 2 1	26	III	Christopher Heise	Yes	E ½	Two houses with orchards and shops outside of PA Post office within PA
	27	III	Christopher Heise	No	SE ¼	
	27	III	Edward Mackenzie	Yes	NE ¼	House outside of PA
	28	III	John McCague	Yes		House outside of PA
Segment 2 2	16	IV	Thomas Frisby	Yes	NW ¼ of W ½	House outside of PA Private roadway within PA
	17	IV	Johnson Wilson	Yes		House, orchard and private roadway outside of PA
	16	III	Unnamed	Yes	NE Corner of Lot	House and orchard within PA
	16	III	Joseph Walker	Yes	Portion of E ½	House and orchard outside of PA
	17	III	Milton Fierheller	Yes	E ½	House outside of PA Orchard adjacent to PA
	18	III	Abraham Hendrick	Yes	S ½ of E ½	House outside of PA Open roadway through PA
	18	III	Peter Wilmot	No	NW ¼ of E ½	Orchard adjacent to PA
	19	III	George Nichols	Yes	S ½	House outside of PA
	20	III	Edward Sanderson	Yes	E ½	Two houses outside of PA
	21	III	Henry White	No	NE ¼	
	21	III	Jacob White	Yes	SE ¼	House outside of PA
Segment 2 3	22	III	John Gormley	Yes	E ½	Structure in interior of lot, house and orchard fronting Woodbine, all outside of PA
	23	III	John Foster	Yes	E ½	House and orchard outside of PA
	24	III	Thomas Klink	Yes	E ½	House and orchard, interior structure outside of PA

2.3.3 19th Century Transportation Routes

19th Avenue, Elgin Mills Road East, Woodbine Avenue, Major Mackenzie Drive East, 16th Avenue, Warden Avenue and Highway 7 are depicted as open on the 1860 and 1878 maps.

2.3.4 Historical Aerial Imagery Review

The available aerial historic mapping indicates that large portions of the Project area have been previous disturbed by roadway and residential construction (Maps 8-24). Historical aerial photographs demonstrate significant disturbance within a number of segments of the Project area including: Preliminary Preferred Route Phase 1, Segment 2.1, 2.2, 2.3 and 2.4 and Alternative Route Phase 1, Segment 2.1, 2.2 and 2.3.

Starting in 2009 the areas adjacent to Woodbine Avenue, Honda Boulevard, Bishop's Gate and Victoria Square Boulevard began to be intensively developed for residential and commercial use. Historical aerial photography from 2009 and 2012 depicts topsoil stripping and significant landscaping which has heavily disturbed the vast majority of the Project area in this area (Maps 8 and 9). At this time the Woodbine Avenue bypass and Honda Boulevard were built resulting in significant landscaping in these ROWs.

Starting in 2007 the area between the Woodbine Avenue bypass and Elgin Mills Road began to be intensively developed for residential and use. Historical aerial photography from 2007, 2009 and 2012 depicts topsoil stripping and significant landscaping which has heavily disturbed the entirety of the Project area in this area (Maps 10, 11 and 12). At this time the Woodbine Avenue bypass, Bishop's Gate, Livante Court, Helford Street, Prince of Wales Drive and Duke of York Street were built resulting in significant landscaping in these ROWs.

The area of the intersection of Woodbine Avenue and Victoria Square Boulevard witnessed significant landscaping as a result the alterations to the roadways for the Woodbine Avenue bypass. Historical aerial photography from 2007 and 2009 depicts topsoil stripping and significant landscaping which has heavily disturbed the Project area to the west of Victoria Square Boulevard between Woodbine Avenue and Murison Drive (Maps 13 and 14).

Starting in 1995 the areas on either side of Markland Avenue between Russell Dawson Road and Woodbine Avenue witnessed topsoil stripping and significant landscaping which has heavily disturbed the vast majority of the Project area in this area. At this time the Markland Avenue was built resulting in significant landscaping in the ROW (Maps 15-22).

In 2009 the areas on either side of Woodbine Avenue, Betty Roman Boulevard and Prince Regent Street witnessed topsoil stripping and significant landscaping which has heavily disturbed the entirety of the Project area in these areas. At this time the sections of Woodbine Avenue, Betty Roman Boulevard and sections of Prince Regent Street were built resulting in significant landscaping in these ROWs (Maps 23 and 24).

3.0 STAGE 1 PROPERTY INSPECTION

As the Project area contained several features signalling archaeological potential, as well as several features of extensive disturbance, a Stage 1 property inspection was conducted to evaluate the current conditions of the sections of the Project area associated with the Preliminary Preferred Route to determine if any areas of archaeological potential remained intact within this portion of Project area. The Alternative Route was not subject to a Stage 1 field review at this time. This review was restricted to a 50 m wide area centred on the existing ROW.

The property inspection was conducted on January 17, 2019, in overcast and cool weather conditions. The weather conditions allowed for good visibility for the inspection of the surface features. The field review involved the recording and photo-documentation of the field conditions.

Preliminary Preferred Route - Phase 1.0 (Map 25; Images 1-11)

The field review of Phase 1 started at 101 Honda Boulevard and continued south on Honda Boulevard to the intersection with Woodbine Avenue before continuing north on Woodbine Avenue.

101 Honda Boulevard is occupied by an Enbridge facility. The portion of 101 Honda Boulevard within the Project area includes a parking lot bordered by a treeline on its southern end and a narrow section of fallow agricultural field (Images 1 and 2). There is no indication of buried utilities in this section of field.

Honda Boulevard is a four-lane roadway with manicured lawn shoulders and sidewalks along both sides of the ROW. The eastern part of the Honda Boulevard ROW includes a narrow strip of manicured lawn between the roadway and the sidewalk which contains light standards with buried electrical cables (Image 3). Beginning at 101 Honda Boulevard, the land on the eastern side of the ROW east of the sidewalk is occupied by a fallow agricultural field (Image 4). The eastern side of the ROW is slightly elevated relative to the fallow agricultural field to the east. The western part of the Honda Boulevard ROW includes a manicured lawn shoulder which contains buried water and gas lines as well as light standards with buried electrical cables (Image 5). North of Mobis Drive, the ROW contains an extensively manicured lawn area to the west of the sidewalk. South of Mobis Drive, the land on the western side of the ROW west of the sidewalk is occupied by an agricultural field. The western side of the ROW is level with the agricultural field to the west (Image 6).

Woodbine Avenue is a four-lane paved roadway with manicured lawn shoulders and sidewalks along both sides of the ROW. The western part of the Woodbine Avenue ROW between Honda Boulevard and Victoria Square Boulevard includes a strip of manicured lawn between the sidewalk and the roadway contains light standards with buried electrical cables running between each. This section of the ROW has been built up and is

considerably higher than the undeveloped land to the west (Image 7). North of the intersection with Victoria Square Boulevard the sidewalk ends and the entire shoulder is taken up with manicured lawn. This section of manicured lawn contains light standards with buried electrical cables, as well as buried telecommunications, water and gas lines (Image 8). The eastern part of the Woodbine Avenue ROW includes a strip of manicured lawn between the sidewalk and the roadway. This strip of manicured lawn contains light standards with buried electrical cables running between each. Immediately to the east of the sidewalk there is a buried gas line (Image 9). Between the residential houses on Living Crescent and Victoria Square Boulevard the ROW has been built up and is considerable higher than the undeveloped areas to the east (Image 10). North of Victoria Square Boulevard the sidewalk ends and the entire shoulder is occupied by a shallowly ditched manicured lawn bounded by a fence that includes light standards with buried electrical cables running between each. North of the fence the ROW has been built up and is considerable higher than the undeveloped areas to the east (Image 11).

Preliminary Preferred Route - Segment 2.1 (Map 25 and 26; Images 12-15)

The field review of Segment 2.1 started at the intersection with Woodbine Avenue and Honda Boulevard and continued south to the intersection of Woodbine Avenue and Elgin Mills Road.

Woodbine Avenue is a four-lane paved roadway with manicured lawn shoulders and sidewalks along both sides of the ROW. The western side of the Woodbine Avenue ROW contains a sidewalk and a narrow strip of extensively manicured lawn. Between Honda Boulevard and Lord Melborne the strip of manicured lawn contains a buried sewer as well as light standards with buried electrical cables. This section of the Woodbine Avenue ROW has been built up relative to the lower lying land to the west (Image 12). South of Lord Melborne Street the strip of manicured lawn on the western side of the Woodbine Avenue ROW contains light standards with buried electrical cables running between each. This section of the ROW is level with the lands to the west (Image 13). The eastern side of the Woodbine Avenue ROW contains a sidewalk and a narrow strip of extensively manicured lawn. Between Bishops Gate and Prince of Wales Drive the narrow strip of extensively manicured lawn contains buried water and sewers as well as light standards with buried electrical cables running between each (Image 14). South of Prince of Wales Drive the narrow strip of extensively manicured lawn containing buried water and sewers as well as light standards with buried electrical cables running between each (Image 15).

Preliminary Preferred Route - Segment 2.2 (Map 27-31 and 33; Images 16-34)

The field review of Segment 2.2 started at the intersection of Donald Buttress Boulevard/Vine Cliff Boulevard and Victoria Square Boulevard and continued south on to Woodbine Avenue before turning east on to Roddick Road and terminated at the intersection with Calvert Road.

Victoria Square Boulevard is a two-lane paved roadway with a narrow, gravelled shoulder on both sides. The western side of Victoria Square Boulevard between Donald Buttress Boulevard and Murison Drive is occupied by residential houses, south of Murison the land is undeveloped. The eastern side of Victoria Square Boulevard between Donald Buttress Boulevard and Murison Drive is undeveloped. South of Murison the land has been partially developed but significant greenspace remains. The western side of the Victoria Square Boulevard ROW south of Donald Buttress Boulevard contains a gravelled shoulder and a ditched lawn area that slopes up to the sidewalk. This area of lawn contains buried water and sewer utilities as well as poles for suspended electrical cables (Image 16). Between Murison Drive and the intersection with Woodbine Avenue the ROW contains a deeply ditched grassed area as well as poles for suspended electrical cables (Image 17). The eastern side of the Victoria Square Boulevard ROW south of Donald Buttress Boulevard contains a gravelled shoulder and a grassed slope leading down to the undeveloped grassed area to the east (Image 18). This sloped area contains poles for suspended electrical cables but no buried utilities. The grassed area at the base of the slope is not obviously disturbed. In front of the Victoria Square Montessori school an artificial large berm with associated ditch and sewer exists immediately adjacent to the gravelled shoulder (Image 19).

Woodbine Avenue is a four-lane paved roadway with a narrow, manicured lawn shoulder and sidewalk on both sides. The eastern side of the Woodbine Avenue ROW north of Major Mackenzie Drive contains a narrow strip of ditched lawn between the roadway and the sidewalk and a grassed slope leading down from the sidewalk to the undeveloped lands to the east. The narrow strip of manicured lawn contains light standards with buried electrical cables (Image 20). The western side of the Woodbine Avenue ROW north of Major Mackenzie Drive contains a narrow strip of ditched lawn between the roadway and the sidewalk and a grassed slope leading down from the sidewalk to an artificial pond and undeveloped lands. The narrow strip of manicured lawn contains light standards with buried electrical cables running between each. A grassed slope leads down from the sidewalk to the artificial pond (Image 21). South of the pond, there is a buried sewer and a bridge over a small tributary of the Berczy Creek which drains the pond. South of the bridge there is a grassed slope which leads down to a treed area. This treed area is not obviously disturbed. The northwestern corner of the intersection of Woodbine Avenue and Major Mackenzie Drive is a manicured lawn that contains buried electrical cables near to the sidewalk and poles for suspended electrical cables. Beyond the area immediately adjacent to the sidewalk the manicured lawn is not obviously disturbed (Image 22)

The western side of the Woodbine Avenue ROW between Major Mackenzie Drive and Oakford Drive contains a strip of lawn between the roadway and the sidewalk. The strip of lawn between the roadway and the sidewalk contains poles for suspended electrical cables but no indication of buried utilities (Image 23). This section of manicured lawn is not obviously disturbed. The eastern side of the Woodbine Avenue ROW between Major Mackenzie Drive and Personna Boulevard contains a sidewalk with a grassed area to the east. The area south of the intersection with Major Mackenzie Drive and east of the sidewalk is manicured lawn that contains buried electrical cables near to the sidewalk and

poles for suspended electrical cables. This section of manicured lawn is not obviously disturbed (Image 24). The remainder of the eastern side of the ROW between Major Mackenzie Drive and Personna Boulevard is deeply ditched and contains buried telecommunications and sewer as well as poles for suspended electrical cables (Image 25)

The western side of the Woodbine Avenue ROW between Oakford Drive and Hillmouth Road contains a strip of lawn between the roadway and the sidewalk. The strip of lawn between the roadway and the sidewalk contains poles for suspended electrical cables but no indication of buried utilities (Image 26). This section of manicured lawn is not obviously disturbed. The eastern side of the Woodbine Avenue ROW between Personna Boulevard and Roddick Road contains a strip of lawn between the roadway and the sidewalk. The strip of lawn between the roadway and the sidewalk contains poles for suspended electrical cables and a sewer immediately adjacent to the sidewalk but no indication of other buried utilities (Image 27 and 28). This entirety of this section of manicured lawn is not obviously disturbed.

Rodick Road is a four-lane paved roadway with narrow manicured lawn shoulder and sidewalk on both sides. Roddick Road runs east-west through a residential neighbourhood before turning north-south as it travels towards Calvert Road. The entirety of the manicured lawn shoulder on the north/east side of the Roddick Road ROW between Woodbine Avenue and Calvert Road contains buried water, telecommunications, gas lines and electrical cables (Images 29, 30 and 31). The entirety of the of the manicured lawn shoulder on the south/west side of the Roddick Road ROW between Woodbine Avenue and Calvert Road contains buried sewer, and telecommunication lines as well as light standards with buried electrical cables running between each. The area to the west of the southward curve is heavily landscaped resulting in a steeply sloped manicured lawn leading away from the sidewalk (Images 32, 33 and 34).

In many cases on either side of Roddick Road the residential structures and associated landscaping extend up to the edge of the sidewalk. However, in other cases sizable areas of manicured lawn exist between the sidewalk and the homes. These areas of manicured lawn beyond the sidewalk associated with the residential homes are not obviously disturbed.

Preliminary Preferred Route - Segment 2.3 (Map 34; Images 35-40)

The field review of Segment 2.3 started on Woodbine Avenue across from Tucciarone Court and continues south before turning east onto Betty Roman Boulevard and continued to a point west of Reflection Road.

Woodbine Avenue is a four-lane paved roadway with manicured lawn shoulders and sidewalks on both sides of the ROW. Buried electrical cables run between the light standards which exist between the sidewalk and the roadway (Image 35). The Woodbine Avenue ROW has been built up relative to the lower lying land to the west (Image 36). The northwest corner of the intersection of Woodbine Avenue and Betty Roman Boulevard

contains a concrete underpass for a watercourse which flows southeast towards the open area south of Betty Roman Boulevard. The ROW on the western side of Woodbine Avenue is considered extensively disturbed and does not retain archaeological potential. The eastern side of the Woodbine Avenue ROW contains a sidewalk and an extensively manicured lawn area. The lawn area contains buried gas, sewer and electrical cables and is considered extensively disturbed and does not retain archaeological potential (Image 37).

Betty Roman Boulevard is a two-lane paved roadway with manicured lawn shoulders and sidewalks on either side. The northern side of the Betty Roman Boulevard ROW contains buried electrical cables which run between the light standards which exist in the manicured lawn shoulder between the sidewalk and the roadway (Image 38). The southern side of the Betty Roman Boulevard contains an artificial slope leading down to the watercourse which flows from the northwest on the western side of Woodbine Avenue. The area at the foot of this slope in the vicinity of the watercourse is considered low lying and wet (Image 39). The northern side of the Betty Roman Boulevard ROW contains buried water and electrical cables which run between the light standards which exist in the manicured lawn shoulder between the sidewalk and the roadway (Image 40). Residential structures extend right up to the northern edge of the sidewalk.

Preliminary Preferred Route - Segment 2.4 (Map 34; Images 41-43)

The field review of Segment 2.4 started north of the intersection of Prince Regent Street and Betty Roman Boulevard continued to the south beyond the intersection across the bridge.

This section of the Price Regent Street contains a bridge over a small watercourse. Prince Regent Street is a two-lane paved roadway with manicured lawn shoulders on both sides of the ROW. Buried electrical cables run along the eastern and western sides of the Price Regent Street ROW between the light standards and a sewer exists at the northwestern corner of the intersection (Image 41 and 42). Slopes leading down to the Otter Trail Creek from Betty Roman Boulevard and from Prince Regent Street are products of recent landscaping activity related to bridge and subdivision construction and are considered extensively disturbed. The area below the bridge in the vicinity of the watercourse is considered low lying and wet (Image 43).

Preliminary Preferred Route - Segment 2.5 (Map 36; Images 44-46)

The field review of Segment 2.5 started north of the intersection Village Parkway and Highway 7 and continued south beyond the intersection.

Village Parkways is a three-lane paved roadway with narrow manicured lawn shoulders and sidewalks on both sides of the ROW. Buried telephone cables, water, gas lines are located along the western side of the ROW (Image 44). The eastern side of the ROW has been heavily disturbed by residential construction and also contains buried water and electrical cables (Image 45). Two very small areas of lawn exist to the south of the

Highway 7 and both of these contain buried electrical cables and would have been heavily impacted during the construction of the adjacent buildings (Image 46). The properties on either side of Village Parkway consist of heavily manicured residential and commercial properties and the topography is generally flat.

Preliminary Preferred Route - Segment 2.6 (Map 37; Images 47-52)

The field review of Segment 2.6 started at the intersection of Village Parkway and Wentworth Court and continued north to the intersection with Carleton Road.

Village Parkway is a two-lane paved roadway with narrow strips of manicured lawn between the roadway and the sidewalks on both sides. The western side of the Village Parkway ROW includes a narrow strip of manicured lawn between the roadway and the sidewalk with residential lawns to the west of the sidewalk. Across from Wentworth Court in front of the Unionville Presbyterian Church in the narrow strip of manicured lawn there is buried telecommunications and electrical cables. Unionville Presbyterian Church is a relatively recent church and there are no associated cemeteries in the area. South of the sidewalk in the church lawn there is a buried sewer and electrical utilities but the area immediately in front of the church is not obviously disturbed (Image 47). On either side of the intersection with Paget Place the strips of manicured lawn between the roadway and the sidewalk is not obviously disturbed (Image 48). To the west of these strips of lawn there are buried electrical and telecommunications utilities up to Carleton Road (Image 49). The southwestern corner of the intersection of Village Parkway and Carleton Road is an artificially built up area (Image 50). The east side of the Village Parkway ROW includes a narrow strip of manicured lawn between the roadway and the sidewalk with residential lawns to the east of the sidewalk. North of Wentworth Court the strip of manicured lawn west of the sidewalk contains buried telecommunications, water and electrical cables (Images 51 and 52). These buried utilities appear to follow the course of the sidewalk fairly closely and impact to the area adjacent to the roadway appears minimal. In many cases, on either side of Village Parkway, sizable areas of manicured lawn exist between the sidewalk and the homes. These areas of manicured lawn beyond the sidewalk associated with the residential homes are not obviously disturbed.

Preliminary Preferred Route - Segment 2.7 (Map 38 and 39; Images 53-60)

The field review of Segment 2.7 started on Major Mackenzie Drive at the intersection with Walsingham Court and continued west to the intersection with Cachet Parkway.

Major Mackenzie Drive is a four-lane paved roadway with sidewalks and variably artificial sloped grassed shoulders along both sides of the ROW. The north side of Major Mackenzie Drive ROW includes a paved sidewalk and areas of artificial sloping terrain. Immediately across from Walsingham Court a narrow strip of manicured lawn exists between the sidewalk and the roadway. North of the sidewalk a hydro pole connects the suspended electrical cables on the south side of Major Mackenzie to the northern side of

the road. On the northern side of the road the electrical utility moved underground to run between light standards that exist north of the sidewalk. A level area exists in the area of the suspended electrical cable connection that is not obviously disturbed (Image 53). To the west of this level area there is an artificial slope (Image 54). Beyond this artificial slope in the western half of the Segment 2.7 there is an area only a slight slope which is not obviously disturbed (Image 55). Across from Cachet Parkway the ROW north of the sidewalk is a steep artificial slope (Image 56). The south side of Major Mackenzie Drive ROW includes a paved sidewalk and artificial sloping terrain. The artificially sloped grassed areas to the south of the sidewalk contain suspended electrical utilities running between hydro poles, street lights as well as buried telecommunications and electrical cables. A small section of lawn east of Walsingham Court contains buried hydro utilities and is ditched near the roadway but an area of lawn to the south of the ditch is not obviously disturbed (Image 57). In the area west of Walsingham Court the land slopes down towards Major Mackenzie Drive but at the approximate halfway point of Segment 2.7 the land begins to steeply slope away from Major Mackenzie Drive (Images 58-60).

Preliminary Preferred Route - Disconnect 1 (Map 39; Images 61 and 62)

The field review of Disconnect 1 started at the intersection of Hazelton Avenue and Major Mackenzie Drive and continued north on Hazelton Avenue.

Hazelton Avenue is a two-lane paved roadway with manicured lawn shoulders and sidewalks on both sides of the ROW. The properties on either side of Hazelton consist of heavily manicured residential properties. The grass shoulder on the western side of the ROW contains buried electrical cables and has been extensively manicured (Image 61). The grass shoulder on the eastern side of the Row contains buried water and electrical cables and has been extensively manicured (Image 62).

Preliminary Preferred Route - Disconnect 2 (Map 40)

Disconnect 2 is located on the southern side of 16th Avenue, across from Yorkton Boulevard. 16th Avenue is a divided four-lane paved roadway with manicured lawn shoulders and sidewalks on both sides of the ROW. The ROW in this area has buried and above ground utilities and has been extensively disturbed. The lands to the south of the ROW in this area are grassed and treed and generally slope down to the watercourse.

Preliminary Preferred Route - Disconnect 3 (Map 41; Images 63-65)

The field review of Disconnect 3 started in the parking lot off of Carleton Road and continued into the woodlot to the east. The western half of the Disconnect 3 Project area contains a parking lot and small sections of manicured lawn which would have been impacted by construction of the parking lot (Image 63). The area to the east of the parking lot is an undeveloped woodlot (Image 64 and 65). A buried gas line is located along the eastern side of the parking lot adjacent to the woodlot.

Preliminary Preferred Route - Disconnect 4 (Map 42; Images 66-69)

The field review of Disconnect 4 started on the east side of the pathway north of Highway 7 and continued into the woodlot. The Rouge River flows north through the Disconnect 4 Project area to the northeast where it drains Waldon Pond. The southern half of the Disconnect 4 Project area is occupied by a bridge portion of Highway 7 which straddles the Rouge River (Image 66). The area beneath Highway 7 contains a gravelled footpath and concrete footings of the bridge (Image 67). The western and eastern ends of the Project area contain a steep built up area associated with construction of the Highway 7 bridge (Image 68). The flat areas immediately to the north, east and west of the Rouge River are not obviously disturbed (Image 69).

The results of our Stage 1 archaeological assessment, as well as the location and orientation of report photographs are presented on Maps 25 – 42. As the proponent mapping was preliminary and used for discussion purposes (Map 3), no attempt was made to present the Stage 1 results on the proponent mapping.

Table 8: Documentary Records

Field Notes and Field Maps	Dated January 17th, 2019
Photo Catalogue	January 17th (238 digital photographs)
Location of Records	Timmins Martelle Heritage Consultants Inc., @ the Museum of Ontario Archaeology, 1600 Attawandaron Road, London, Ontario N6G 3M6

4.0 ANALYSIS AND CONCLUSIONS

As noted in Section 2.1, the Province of Ontario has identified numerous factors that signal the potential of a property to contain archaeological resources. The Stage 1 background study included a review of current land use, historic and modern maps, registered archaeological sites and previous archaeological studies, past settlement history for the area and a consideration of topographic and physiographic features, soils and drainage. According to the map-based review and background research, potential for the discovery of archaeological sites is indicated by the proximity (within 300 m) to:

1) watercourses (Rouge River, Berczy Creek, Bruce Creek, Eckhardt Creek and various small unnamed tributaries and ponds);
2) well-drained soils (Pontypool sandy loam, Berrien sandy loam and Cashel clay);
3) areas of 19th century settlement;
4) mapped 19th century thoroughfares (19th Avenue, Elgin Mills Road East, Woodbine Avenue, Major Mackenzie Drive East, 16th Avenue, Warden Avenue and Highway 7); and
5) previously identified archaeological sites (AlGu-463, AlGu-457, AlGu-380, AlGu-379, AlGu-306, AlGu-5, AlGu-304, AlGu-303, AlGu-302, AlGu-301, AlGu-300, and AlGu-237)

Preliminary Preferred Route - Phase 1

In addition to numerous buried utilities and obvious signs of roadway construction related disturbance, a review of historical aerial photography demonstrates that both sides of the Honda Boulevard and Woodbine Avenue ROW within Phase 1 are extensively disturbed. Furthermore, portions of this Project area overlap with an area cleared by a previous archaeological assessment (AA 2008). The registered archaeological site within this Project area (AlGs-379) was completely excavated and is of no further archaeological concern. As such, this Project area should be considered free of archaeological concern and no further assessment is recommended.

Alternative Route - Phase 1

In addition to numerous buried utilities and obvious signs of roadway construction related disturbance, a review of historical aerial photography demonstrates that both sides of the Honda Boulevard and Woodbine Avenue ROW within Phase 1 are extensively disturbed. Furthermore, portions of this Project area overlap with an area cleared by a previous archaeological assessment (AA 2008). The registered archaeological site within this Project area (AlGs-379) was completely excavated and is of no further archaeological concern. As such, this Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.1

In addition to numerous buried utilities and obvious signs of construction related disturbance, a review of historical aerial photography demonstrates that both sides of the Woodbine Avenue ROW within Segment 2.1 are extensively disturbed. Furthermore, portions of this Project area overlap with an area cleared by a previous archaeological assessment (AA 2008). As such, this Project area should be considered free of archaeological concern and no further assessment is recommended.

Alternative Route - Segment 2.1

In addition to numerous buried utilities and obvious signs of construction related disturbance, a review of historical aerial photography demonstrates that both sides of the Woodbine Avenue ROW within Segment 2.1 are extensively disturbed. Furthermore, portions of this Project area overlap with an area cleared by a previous archaeological assessment (AA 2008). As such, this Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.2

Numerous buried utilities, ditches, berms and obvious signs of disturbance related to the construction of residential houses and the roadway indicate that approximately half of the Victoria Square Boulevard ROW within Segment 2.2 is extensively disturbed and does not have archaeological potential. The eastern side of the Victoria Square Boulevard

ROW north of Victoria Square Montessori are not obviously disturbed and retain archaeological potential.

Numerous buried utilities and obvious signs of disturbance related to the construction of the roadway indicate that a large portion of the Woodbine Avenue ROW within Segment 2.2 is extensively disturbed and does not have archaeological potential. The western side of Woodbine Avenue from immediately north of Major Mackenzie Drive to the intersection with Hillmount Road contains some utilities but is not obviously disturbed. The northern half of the eastern side of Woodbine Avenue between Major Mackenzie Drive and Personna Boulevard and the area between Personna Boulevard and Rodick Road is not obviously disturbed.

The entirety of the manicured lawn shoulder on either side of the Roddick Road ROW between Woodbine Avenue and Calvert Road contains buried water, telecommunications, gas lines and electrical cables. The sections of manicured lawn between the sidewalk and the roadway on either side of Roddick Road are considered to be extensively disturbed and do not have archaeological potential. In many cases, on either side of Roddick Road between Woodbine Avenue and Calvert Road, sizable areas of manicured lawn exist between the sidewalk and the homes. These areas of manicured lawn beyond the sidewalk associated with the residential homes are not obviously disturbed.

Portions of this Project area overlap with areas cleared by previous archaeological assessments (Archeoworks 2001; ASI 2006, MIA 1987, 1991). As such, there areas should be considered free of archaeological concern and no further work is recommended.

These not obviously disturbed portions of the Segment 2.2 Project area will require Stage 2 survey.

Alternative Route - Segment 2.2

The majority of the lands within the Alternative Route – Segment 2.2 Project area are extensively disturbed and do not retain archaeological potential. Portions of this Project area overlap with areas cleared by previous archaeological assessments (Archeoworks 2001; ASI 2006, MIA 1987, 1990, 1991). The north side of Calvert Road east of Woodbine Avenue contains a number of strips of manicured lawn which are not obvious disturbed. The south side of Calvert Road east of Woodbine Avenue contains a number of small sections of manicured lawn in the area of Townson Road which are not obviously disturbed. These not obviously disturbed areas retain archaeological potential and would require Stage 2 survey.

Preliminary Preferred Route - Segment 2.3

Numerous buried utilities and obvious signs of construction related disturbance indicate that both sides of the Woodbine Avenue and Betty Roman Boulevard ROWs within Segment 2.3 are extensively disturbed and do not have archaeological potential. A

small area to the south of Betty Roman Boulevard is low lying and wet and does not have archaeological potential. Furthermore, portions of this Project area overlap with areas cleared by a previous archaeological assessment (ASI 2001, 2006). The registered archaeological site adjacent to this Project area (AlGu-303) was completely excavated and is of no further archaeological concern. As such, this Project area should be considered free of archaeological concern and no further assessment is recommended.

Alternative Route - Segment 2.3

In addition to numerous buried utilities and obvious signs of construction related disturbance, a review of historical aerial photography demonstrates that both sides of the Woodbine Avenue ROW within Segment 2.3 are extensively disturbed. Furthermore, portions of this Project area overlap with an area cleared by a previous archaeological assessment (ASI 2001, 2006). As such, this Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.4

Numerous buried utilities and obvious signs of construction related disturbance indicate that both sides of the Prince Regent Street ROW within Segment 2.4 are extensively disturbed and do not have archaeological potential. Small areas to the east and west of the Prince Regent Street bridge over the watercourse are low lying and wet and do not have archaeological potential. Furthermore, portions of this Project area overlap with areas cleared by a previous archaeological assessment (ASI 2001, 2006). The registered archaeological sites adjacent to and within this Project area (AlGu-300 and AlGu-304) were completely excavated and is of no further archaeological concern. As such, this Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.5

Numerous buried utilities and obvious signs of construction related disturbance indicate that both sides of the Village Parkway ROW within Segment 2.5 are extensively disturbed and do not have archaeological potential. As such, this Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.6

The western side of the Village Parkway ROW includes a narrow strip of manicured lawn between the roadway and the sidewalk with residential lawns to the west of the sidewalk. Across from Wentworth Court in front of the Unionville Presbyterian Church in the narrow strip of manicured lawn there is buried telecommunications and electrical cables. South of the sidewalk in the church lawn there is a buried sewer and electrical utilities but the area immediately in front of the church is not obviously disturbed (Image 47). On either side of the intersection with Paget Place the strips of manicured lawn

between the roadway and the sidewalk are not obviously disturbed (Image 48). To the west of these strips of lawn there are buried electrical and telecommunications utilities up to Carleton Road (Image 49). The northwestern corner of the intersection of Village Parkway and Carleton Road is an artificially built up area (Image 50).

The eastern side of the Village Parkway ROW includes a narrow strip of manicured lawn between the roadway and the sidewalk with residential lawns to the east of the sidewalk. North of Wentworth Court the strip of manicured lawn west of the sidewalk contains buried telecommunications, water and electrical cables (Images 51 and 52). These buried utilities appear to follow the course of the sidewalk fairly closely and impact to the area adjacent to the roadway appears minimal. In many cases, on either side of Village Parkway, sizable areas of manicured lawn exist between the sidewalk and the homes. These areas of manicured lawn beyond the sidewalk associated with the residential homes are not obviously disturbed.

The portions manicured lawn of the Village Parkway ROW within Segment 2.6 that contain buried utilities have been extensively disturbed and do not retain archaeological potential.

The areas of manicured lawn on west side of the ROW immediately east of the Unionville Presbyterian Church and to the strip of manicured lawn between the sidewalk and the roadway the north and south of Paget Place are not obviously disturbed and retain archaeological potential and would require Stage 2 survey. The areas of manicured lawn west of the sidewalk on the east side of the ROW that are closer to the roadway are not obviously disturbed and retain archaeological potential and would require Stage 2 survey. Numerous areas of manicured lawn beyond the sidewalk associated with the residential homes on either side of Village Parkway are not obviously disturbed and retain archaeological potential and would require Stage 2 survey.

Preliminary Preferred Route - Segment 2.7

The majority of the Major Mackenzie Drive ROW is extensively disturbed by soil alterations related to landscaping on either side of Major Mackenzie Drive. There is a small section of manicured lawn south of Major Mackenzie Drive to the east of Walsingham Court that contains a small ditch but is otherwise not obviously disturbed. The northern side of Major Mackenzie Drive contains two generally level areas which are not obviously disturbed and retain archaeological potential. These portions of the Project area will require Stage 2 survey.

Preliminary Preferred Route - Disconnect 1

The Disconnect 1 Project area includes the paved sidewalk, lawn shoulder and heavily manicured residential properties on either side of Hazelton Avenue. Both sides of Hazelton Avenue within the Disconnect 1 Project area extensively disturbed by buried

utilities and residential development. As such, this Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Disconnect 2

16th Avenue is a four-lane paved roadway with a manicured lawn shoulder, sidewalk and paved bus stop on the south side of the ROW. The manicured lawn shoulder on the southern side of the ROW contains above ground electrical cables but is not obviously disturbed. The area to the south of the sidewalk is a woodlot.

The paved sidewalk and the bus stop are considered extensively disturbed and do not retain archaeological potential. The manicured lawn shoulder south of 16th Avenue and the woodlot in the southern half of the Disconnect 2 Project area retains archaeological potential and would require Stage 2 survey.

Preliminary Preferred Route - Disconnect 3

The western half of the Disconnect 3 Project area contains a parking lot which is extensively disturbed and does not retain archaeological potential. The woodlot east of the parking lot retains archaeological potential and would require Stage 2 survey.

Preliminary Preferred Route Disconnect 4 - Highway 7

The parts of the Disconnect 4 Project area containing the Highway 7 bridge, the gravelled pathway and the slopes up to the bridge are extensively disturbed and do not retain archaeological potential. The flat, grassed areas adjacent to the Rouge River retain archaeological potential. These portions of the Project area will require Stage 2 survey.

5.0 RECOMMENDATIONS

Based on the information compiled in the background study and the property inspection, the following recommendations are made:

Preliminary Preferred Route - Phase 1

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Alternative Route - Phase 1

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.1

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Alternative Route - Segment 2.1

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.2

The majority of this Project area is free of archaeological concern; however, there are numerous areas that still have archaeological potential and require Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval. The areas that require Stage 2 survey include:

- Victoria Square Boulevard – eastern ROW across from Murison Drive;
- Woodbine Avenue – western ROW north of Major Mackenzie Drive;
- Woodbine Avenue – eastern and western ROW south of Major Mackenzie Drive;
- Woodbine Avenue – eastern and western ROW north of Rodick Road; and
- Rodick Road – eastern and western ROW, various parcels between Woodbine Avenue and Calvert Road.

Alternative Route - Segment 2.2

The majority of this Project area is free of archaeological concern; however, there are numerous areas that still have archaeological potential and require Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval. The areas that require Stage 2 survey include:

- Calvert Road – northern ROW between of Woodbine Avenue and Townson Road; and,
- Calvert Road – southern ROW west of Townson Road.

Preliminary Preferred Route - Segment 2.3

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Alternative Route - Segment 2.3

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.4

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.5

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.6

The majority of this Project area is free of archaeological concern; however, there are numerous areas that still have archaeological potential and require Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval. The areas that require Stage 2 survey include:

- Village Parkway – eastern and western ROW, various parcels between Carleton Road and Wentworth Court.

Preliminary Preferred Route - Segment 2.7

The majority of this Project area is free of archaeological concern; however, there are numerous areas that still have archaeological potential and require Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval. The areas that require Stage 2 survey include:

- Major Mackenzie Drive – northern ROW, two segments west of Walsingham Court; and
- Major Mackenzie Drive – southern ROW east of Walsingham Court.

Preliminary Preferred Route - Disconnect 1

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Disconnect 2

The northern portion of this Project area is free of archaeological concern; however, the southern portion still has archaeological potential and requires Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval.

Preliminary Preferred Route - Disconnect 3

The western portion of this Project area is free of archaeological concern; however, the eastern portion still has archaeological potential and requires Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval.

Preliminary Preferred Route - Disconnect 4

The majority of this Project area is free of archaeological concern; however, the there are areas in the northern portion that still have archaeological potential and require Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval.

If the Project area is changed to incorporate lands not covered within this assessment, then additional archaeological assessment may be required.

These recommendations are subject to the conditions laid out in Section 7.0 of this report and to the Ministry of Tourism, Culture and Sport's review and acceptance of this report into the provincial registry.

6.0 SUMMARY

Enbridge is proposing the Low-Carbon Energy Project to service an urban residential and commercial community in Markham, Ontario. All proposed segments of pipe are to be installed within the existing municipal right of way. The natural gas main installation project, described below, is divided into a Preliminary Preferred Route and an Alternative Route. The Preliminary Preferred Route is divided into Phases 1 and 2 which is further divided into Segments 2.1.-2.7. An Alternative Route was also established and considered in this assessment. The Alternative Route is divided into Phase 1 and 2 which is further divided into Segments 2.1-2.3. It was determined, in discussions with the proponent, that the Project area should be considered to be the entire ROW along the length of the proposed routes and an assumed 50 m wide area centred on them which represents an assumed work area.

A Stage 1 background study was undertaken for the Project area associated with the Preliminary Preferred Route and the Alternative Route proposed pipeline corridors in Markham, Ontario. The background research indicated that the Project area was in proximity to features signalling archaeological potential, namely: 1) watercourses (Rouge River, Berczy Creek, Bruce Creek, Eckhardt Creek and various small unnamed tributaries and ponds); 2) well-drained soils (Pontypool sandy loam, Berrien sandy loam and Cashel clay); 3) areas of 19th century settlement; 4) mapped 19th century thoroughfares (19th Avenue, Elgin Mills Road East, Woodbine Avenue, Major Mackenzie Drive East, 16th Avenue, Warden Avenue and Highway 7); 5)previously identified archaeological sites (AlGu-463 (Peach 2), AlGu-457 (Glendower 3), AlGu-380 (Rice), AlGu-379 (McCague),

AlGu-306 (Carlton Creek Northwest), AlGu-5 (Carlton Creek Northeast), AlGu-304 (Carlton Creek), AlGu-303 (Golden Tower), AlGu-302 (Dietzmann), AlGu-301 (Carver), AlGu-300 (Klinck) and AlGu-237). Therefore, based on the background review, some portions of the Project area have potential for either First Peoples or 19th century sites. As the Project area contained several features signalling archaeological potential, as well as several features of extensive disturbance, a Stage 1 property inspection was conducted to evaluate the current conditions of the Project area associated with the Preliminary Preferred Route and determine if any areas of archaeological potential remained intact within the Project area. The Alternative Route was not subject to a property inspection.

Overall, the majority of the Project area is of low archaeological potential and does not require additional archaeological assessment; however, there are many small areas that retain archaeological potential and that require Stage 2 survey.

7.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Ministry of Tourism, Culture and Sport 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 Ministry of Tourism, Culture and Sport, 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.

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*.

Should previously undocumented (i.e., unknown or deeply buried) archaeological resources be discovered, there 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*. Further, archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the *Ontario Heritage Act* and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.

The *Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33* requires that any person discovering human remains must notify the police or coroner and the Registrar of Burial Sites, War Graves, Abandoned Cemeteries and Cemetery Closures, Ontario Ministry of Government and Consumer Services. Effective as of January 16, 2016, Nancy Watkins, Senior Policy Analyst, is the new Registrar. Her telephone number is 416 212-7499 and her e-mail address is Nancy.Watkins@ontario.ca.

8.0 BIBLIOGRAPHY

Archaeological Assessments Ltd.

2008 *The Stage 1-2 Archaeological Assessment of 11160 Woodbine Avenue, Part of Lot 28, Conc 3, and Part of Honda Boulevard and the Woodbine Bypass, art of Lots 27&28, Conc 3, Town of Markham, Regional Municipality of York.* Report on file with the Ministry of Tourism, Culture and Sport. Licensee Rick Sutton P013-377-2007.

2010 *The Stage 3-4 Excavations of the McCague Site (AlGu-379), 11160 Woodbine Avenue, Part Of Lot 28, Concession 3, And Part Of Honda Boulevard And The Woodbine Bypass, Part Of Lot 27 & 28, Concession 3, Town Of Markham, Regional Municipality Of York.* Report on file with the Ministry of Tourism, Culture and Sport. Licensee Rick Sutton; PIF P013-410-2007.

Archaeological Services Inc.

2003 *Stage 1-2 Archaeological Assessment of Cathedraltown Subdivision Revised Draft Plan 19TM-01001, Part of Lots 23, 24 and 25, Concession 3, Geographic Township of Markham, Town of Markham, Regional Municipality of York, Ontario.* Report on file with the Ministry of Tourism, Culture and Sport. Licensee Martin Cooper; CIF#2001-020-007.

2004 *Stage 3 Archaeological Investigation of The Carlton Creek Site (AlGu-304), Draft Plan of Subdivision 19TM-01001, Part of Lots 23, 24 & 25, Concession 3, Geographic Township of Markham, Now the Town of Markham, Regional Municipality of York, Ontario* (Archaeological Services Inc. 2004; licensee Bruce Welsh P047-013)

2005 *Stage 1 and 2 Archaeological Assessment of Cathedral Town Development, Part of Lots 22, 23 and 24, Concession 3, Geographic Township of Markham, County of York, Town of Markham, Regional Municipality of York.* Report on file with the Ministry of Tourism, Culture and Sport. Licensee Debbie Steiss. PIF P049-112, P049-123 and P049-124)

2005 *Stage 3 Assessment of the Golden Tower Site (AlGu-303), Lot 24, Concession 3 (Geographic Township of Markham, County of York), Town of Markham, Regional Municipality of York.* Report on file with the Ministry of Tourism, Culture and Sport. Licensee Bruce Welsh; PIF# P047-126.

2006 *Stages 3 & 4 Archaeological Excavation of the Klinck (AlGu-300) and the Dietzmann (AlGu-302) Sites, Draft Plan of Subdivision 19T M-01001, Part of Lots 23, 24 and 25, Concession 3, Geographic Township of Markham, Now the Town of Markham, Ontario*. Report on file with the Ministry of Tourism, Culture and Sport. Licensee Eva MacDonald; CIF#P125-045.

2012 *Stage 1 and 2 Archaeological Assessment of Part of Lot 27, Concession 4 Geographic Township of Markham, County of York, Town of Markham, Regional Municipality of York.* Report on file with the Ministry of Tourism, Culture and Sport. Licensees Debbie Steiss and Andrew Riddle P049-601-2010 and P347-052-2011.

2014 *Stage 3 Archaeological Assessment of The Peach 2 Site (AlGu-463) 10975 Woodbine Ave, Part of Lot 27, Concession 4, Geographic Township of Markham, County of York, Town of Markham, Regional Municipality of York, Revised Report.* Report on file with the Ministry of Tourism, Culture and Sport. Licensee Eva MacDonald; PIF P125-072-2011.

Archeoworks Inc.

2001 Stage 1-2 Archaeological Assessment of 27.7 Hectare Property Part of Lots 22 & 23, Concession 4, 19TM-01002 Woodbine Avenue/Major Mackenzie Drive, East Cathedral Community, Town of Markham, Regional Municipality of York, Ontario. Report on file with the Ministry of Tourism, Culture and Sport. Licensee Kim Slocki; CIF# 2001-015-004.

Chapman L.J. and D.F. Putnam

1984 *The Physiography of Southern Ontario*. Second Edition. University of Toronto Press, Toronto, Ontario.

Golder Associates Ltd.

2016 *Stage 1 Archaeological Assessment York Downs Golf Club, Parts of Lot 16, 17 and 18, Concession 5, Geographic Township of Markham, County of York, Now 4134 16th Avenue, City of Markham, Ontario.* Report on file with the Ministry of Tourism, Culture and Sport. Licensee. Jamie Lemon; P1056-0049-2015)

Hoffman, D.W. and N.R. Richards

1955 *Soil Survey of York County*. The Ontario Soil Survey Report No. 19. Joint Publication of the Canada Department of Agriculture, Research Branch; Ontario Ministry of Agriculture and Food, Toronto; and Ontario Agricultural College, Guelph.

Miles and Co.

1878 *Illustrated Historic Atlas of the County of York.*

Ministry of Northern Development and Mines (MNDM)
2007 *Physiography of Southern Ontario*. Chapman, L.J. and D.F. Putnam, authors. GIS map data layer distributed by the Ontario Geological Survey as Miscellaneous Release – Data (MRD) 228. Queen's Printer for Ontario.

Ministry of Tourism and Culture (MTC; now Ministry of Tourism, Culture and Sport)
2011 *Standards and Guidelines for Consultant Archaeologists.* Toronto.

Museum of Indian Archaeology
1987a *Interim Report on an Archaeological Assessment of Parts of Lots 18, 19 and 20, Concession 3, Town of Markham.* Report on file with the Ministry of Tourism, Culture and Sport, Licensee Museum of Indian Archaeology; Licence # 86-24
1987b *Report on the Completion of an Archaeological Assessment of Parts of Lots 18, 19 and 20, Concession 3, Town of Markham.* (Museum of Indian Archaeology. 1987; Licence Number 87-40)
1990 *Archaeological Assessment of Draft Plan of Subdivision 19T-87108 forming part of the proposed Buttonville Business Park, Town of Markham.* Report on file with the Ministry of Tourism, Culture and Sport, Licensee Museum of Indian Archaeology; Licence # 89-160B
1991 *Archaeological Assessment of Draft Plan of Subdivisions 19T-87109, 19T-87110 and 19T-87111 forming parts of the proposed Buttonville Business Park, Town of Markham*. Report on file with the Ministry of Tourism, Culture and Sport, Licensee Museum of Indian Archaeology; Licence # 89-160B

Ontario Fundamental Dataset, Ministry of Natural Resources (2012) and CanVec Geospatial Database (2012)
2013 Base Mapping for the Province of Ontario.

Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)
2006 GIS Layers for Soils in the Province of Ontario.

This Land Archaeology Inc.
2013 *REVISED report on the 2008 and 2009 Stage 1 to 3 Archaeological Assessment of Glendower Properties Inc.'s Property, part of Lots 28 and 29, Concession 4, Town of Markham, Regional Municipality of York, Ontario, AlGu-401; AlGu-456, AlGu-457*. Report on file with the Ministry of Tourism, Culture and Sport. Licensee William Finlayson; PIF P059-135-2009, P059-135-2009, P059-080-2008 and P059-080-2008.

Tremaine, George. R.
1860 *Tremaine's Map of the County of York, Canada West*. Compiled from Actual Surveys. George C. Tremaine, Publisher.

9.0 IMAGES

Image 1: PPR Phase 1 - Overview of Enbridge Facilities at 101 Honda Boulevard (looking northeast)



Image 2: PPR Phase 1 - East Side of Honda Boulevard at 101 Honda Boulevard (looking east)



Image 3: PPR Phase 1 - Honda Boulevard at Woodbine Avenue, Eastern ROW (looking northwest)



Image 4: PPR Phase 1 - Honda Boulevard, Eastern ROW (looking southeast)



Image 5: PPR Phase 1 - Honda Boulevard, Western ROW (looking southeast)



Image 6: PPR Phase 1 - Honda Boulevard South of Mobis Drive, Western ROW (looking southeast)



Image 7: PPR Phase 1 - Woodbine Avenue, Western ROW (looking northeast)



Image 8: PPR Phase 1 - Woodbine Avenue, Western ROW (looking south)



Image 9: PPR Phase 1 - Woodbine Avenue at Bishop's Gate. Eastern ROW (looking north)



Image 10: PPR Phase 1 - Woodbine Avenue West of Victoria Square Boulevard, Eastern ROW (looking southwest)



Image 11: PPR Phase 1 - Woodbine Avenue East of Victoria Square Boulevard, Eastern ROW (looking north)



Image 12: PPR Segment 2.1 - Woodbine Avenue West of Honda Boulevard, Western ROW (looking northeast)



Image 13: PPR Segment 2.1 - Woodbine Avenue South of Lord Melborne Street, Western ROW (looking south)



Image 14: PPR Segment 2.1 - Woodbine Avenue North of Prince of Wales Drive, Eastern ROW (looking north)



Image 15: PPR Segment 2.1 - Woodbine Avenue South of Prince of Wales Drive, Eastern ROW (looking north)



Image 16: PPR Segment 2.2 - Victoria Square Boulevard South of Donald Buttress Boulevard, Western ROW (looking south)



Image 17: PPR Segment 2.2 - Victoria Square Boulevard South of Murison Drive, Western ROW (looking south)



Image 18: PPR Segment 2.2 - Victoria Square Boulevard South of Donald Buttress Boulevard, Eastern ROW (looking south)

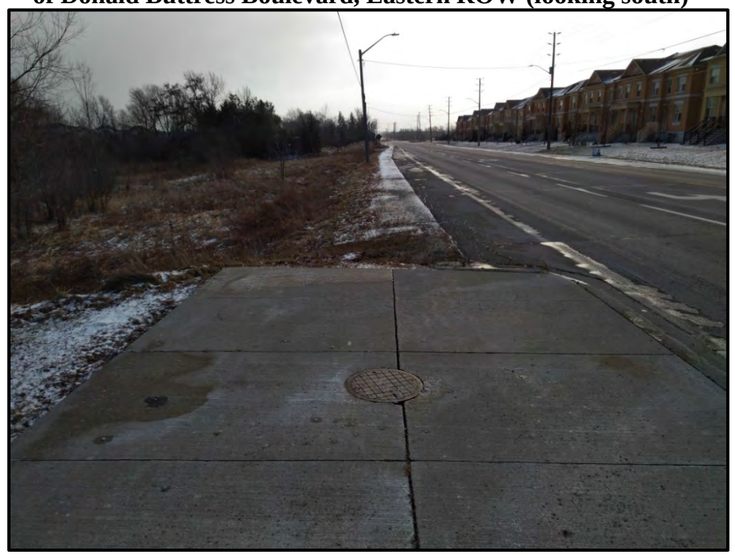


Image 19: PPR Segment 2.2 - Victoria Square Boulevard at Victoria Square Montessori, Eastern ROW (looking south)



Image 20: PPR Segment 2.2 – Woodbine Avenue North of Major Mackenzie Drive, Eastern ROW (looking southeast)



Image 21: PPR Segment 2.2 - Woodbine Avenue North of Major Mackenzie Drive, Western ROW (looking southeast)



Image 22: PPR Segment 2.2 - Woodbine Avenue at Major Mackenzie Drive, Western ROW (looking north)



Image 23: PPR Segment 2.2 - Woodbine Avenue North of Oakford Drive, Western ROW (looking north)



Image 24: PPR Segment 2.2 - Woodbine Avenue South of Major Mackenzie Drive, Eastern ROW (looking south)



Image 25: PPR Segment 2.2 - Woodbine Avenue North of Personna Boulevard, Eastern ROW (looking south)



Image 26: PPR Segment 2.2 - Woodbine Avenue South of Oakford Drive, Western ROW (looking south)



Image 27: PPR Segment 2.2 - Woodbine Avenue South of Personna Boulevard, Eastern ROW (looking north)



Image 28: PPR Segment 2.2 - Woodbine Avenue North of Roddick Road, Eastern ROW (looking north)



Image 29: PPR Segment 2.2 - Roddick Road West of Rachel Cres, Northern ROW (looking west)



Image 30: PPR Segment 2.2 - Roddick Road West of Macrill Road, Northern ROW (looking northwest)



Image 31: PPR Segment 2.2 - Roddick Road North of Eyer Drive, Eastern ROW (looking northwest)



Image 32: PPR Segment 2.2 - Roddick Road West of Rachel Cres, Southern ROW (looking east)

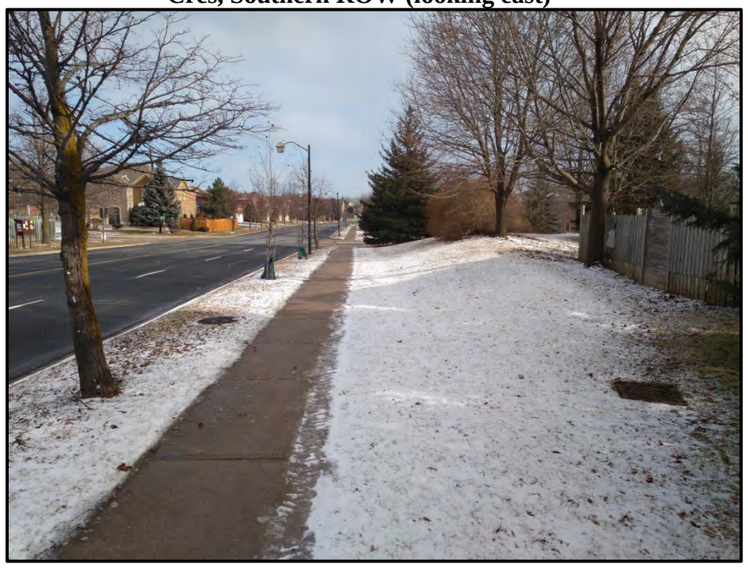


Image 33: PPR Segment 2.2 - Roddick Road West of Macrill Road, Southern ROW (looking southeast)



Image 34: PPR Segment 2.2 - Roddick Road North of Eyer Drive, Western ROW (looking southeast)

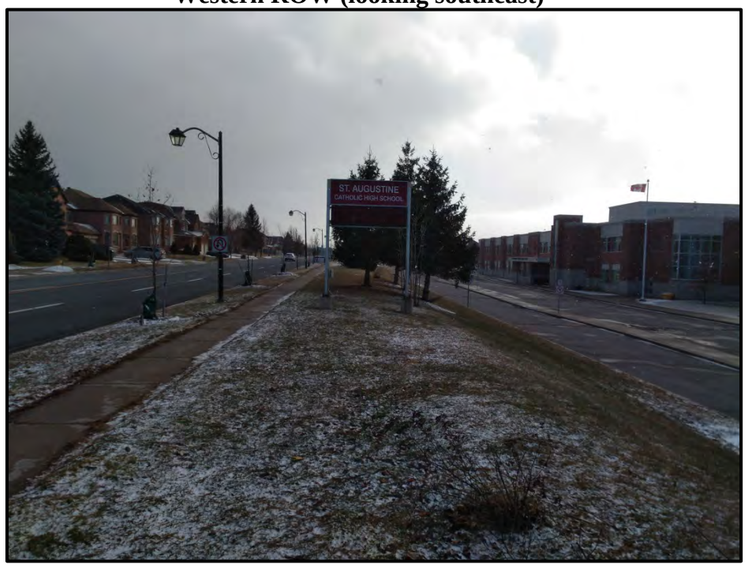


Image 35: PPR Segment 2.3 - Woodbine Avenue Across from Tucciarone Court, Western ROW (looking southwest)



Image 36: PPR Segment 2.3 - Woodbine Avenue North of Betty Roman Boulevard, Western ROW (looking southwest)



Image 37: PPR Segment 2.3 - Woodbine Avenue South of Tucciarone Court, Eastern ROW (looking southwest)



Image 38: PPR Segment 2.3 - Betty Roman Boulevard at Woodbine Avenue, Southern ROW (looking east)



Image 39: PPR Segment 2.3 - Betty Roman Boulevard East of Woodbine Avenue, Southern ROW (looking southwest)



Image 40: PPR Segment 2.3 - Betty Roman Boulevard East of Woodbine Avenue, Northern ROW (looking west)



Image 41: PPR Segment 2.4 - Prince Regent Street at Betty Roman Boulevard, Western ROW (looking south)



Image 42: PPR Segment 2.4 - Prince Regent Street South of Betty Roman Boulevard, Eastern ROW (looking north)

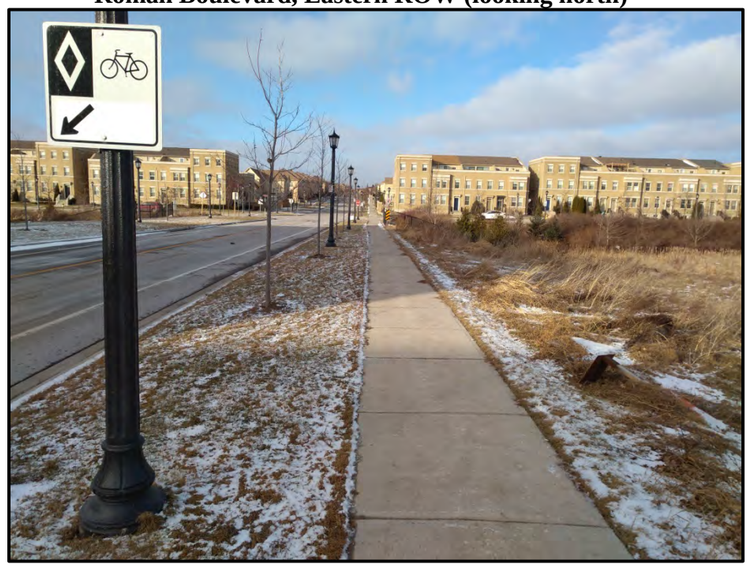


Image 43: PPR Segment 2.4 - Prince Regent Street at Betty Roman Boulevard, Western ROW (looking southeast)



Image 44: PPR Segment 2.5 - Village Parkway at Highway 7, Western ROW (looking north)



Image 45: PPR Segment 2.5 - Village Parkway North of Highway 7, Eastern ROW (looking south)

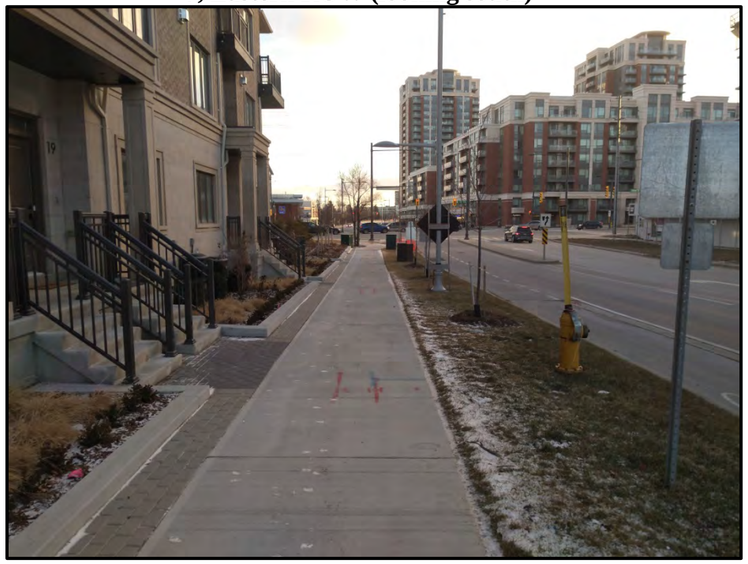


Image 46: PPR Segment 2.5 - Village Parkway South of Highway 7, Eastern ROW (looking northeast)



Image 47: PPR Segment 2.6 - Village Parkway at Wentworth Court, Western ROW (looking north)



Image 48: PPR Segment 2.6 - Village Parkway at Wentworth Court, Western ROW (looking north)



Image 49: PPR Segment 2.6 - Village Parkway West of Paget Plc, Western ROW (looking north)



Image 50: PPR Segment 2.6 - Village Parkway North of Carlton Road, Western ROW (looking south)



Image 51: PPR Segment 2.6 - Village Parkway North of Wentworth Court, Eastern ROW (looking north)



Image 52: PPR Segment 2.6 - Village Parkway South of Carlton Road, Eastern ROW (looking north)



Image 53: PPR Segment 2.7 - Major Mackenzie Drive across from Walsingham Court, Northern ROW (looking west)



Image 54: PPR Segment 2.7 - Major Mackenzie Drive West of Walsingham Court, Northern ROW (looking west)



Image 55: PPR Segment 2.7 - Major Mackenzie Drive, Northern ROW (looking west)



Image 56: PPR Segment 2.7 - Major Mackenzie Drive across from Cachet Parkway, Northern ROW (looking east)



Image 57: PPR Segment 2.7 - Major Mackenzie Drive East of Walsingham Court, Southern ROW (looking west)

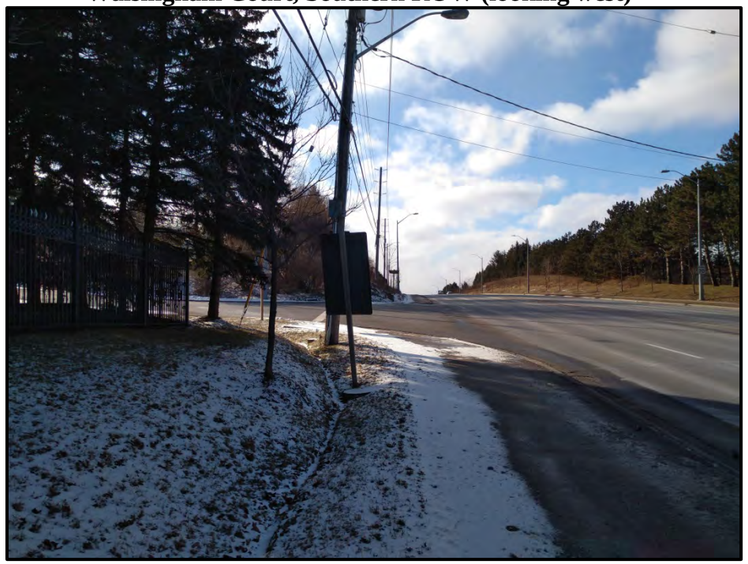


Image 58: PPR Segment 2.7 - Major Mackenzie Drive West of Walsingham Court, Southern ROW (looking west)

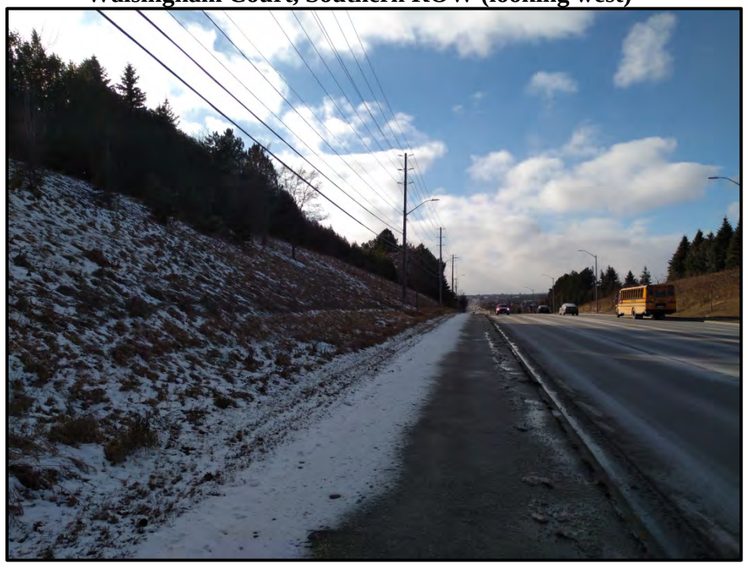


Image 59: PPR Segment 2.7 - Major Mackenzie Drive, Southern ROW (looking east)



Image 60: PPR Segment 2.7 - Major Mackenzie Drive East of Cachet Parkway, Southern ROW (looking west)



Image 61: PPR Disconnect 1 – Hazelton Avenue at Major Mackenzie Drive, Western ROW (looking north)



Image 62: PPR Disconnect 1 – Hazelton Avenue at Major Mackenzie Drive, Eastern ROW (looking north)



Image 63: PPR Disconnect 3 – South of Carleton Road, South End of Project Area (looking north)



Image 64: PPR Disconnect 3 – South of Carleton Road, South End of Project Area (looking northeast)

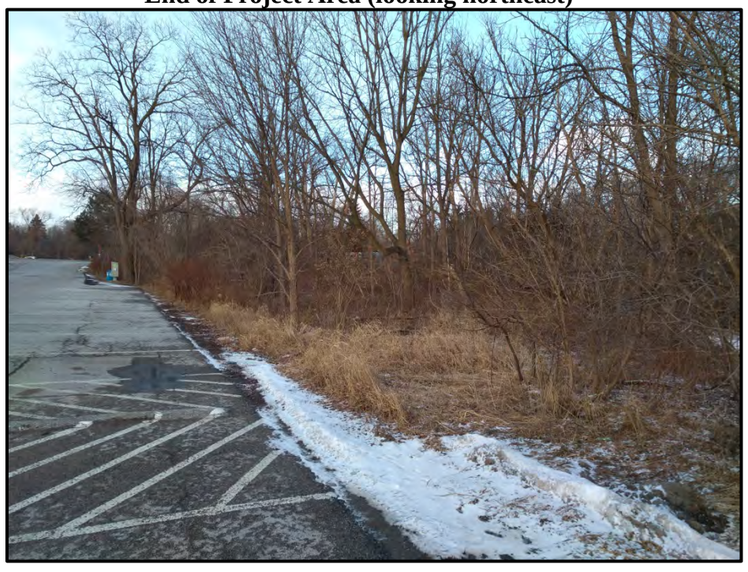


Image 65: PPR Disconnect 3 – South of Carleton Road, Centre of Project Area (looking east)



Image 66: PPR Disconnect 4 – North of HWY 7, East of Rouge River (looking south)



Image 67: PPR Disconnect 4 – Under of HWY 7 Bridge, East of Rouge River (looking south)



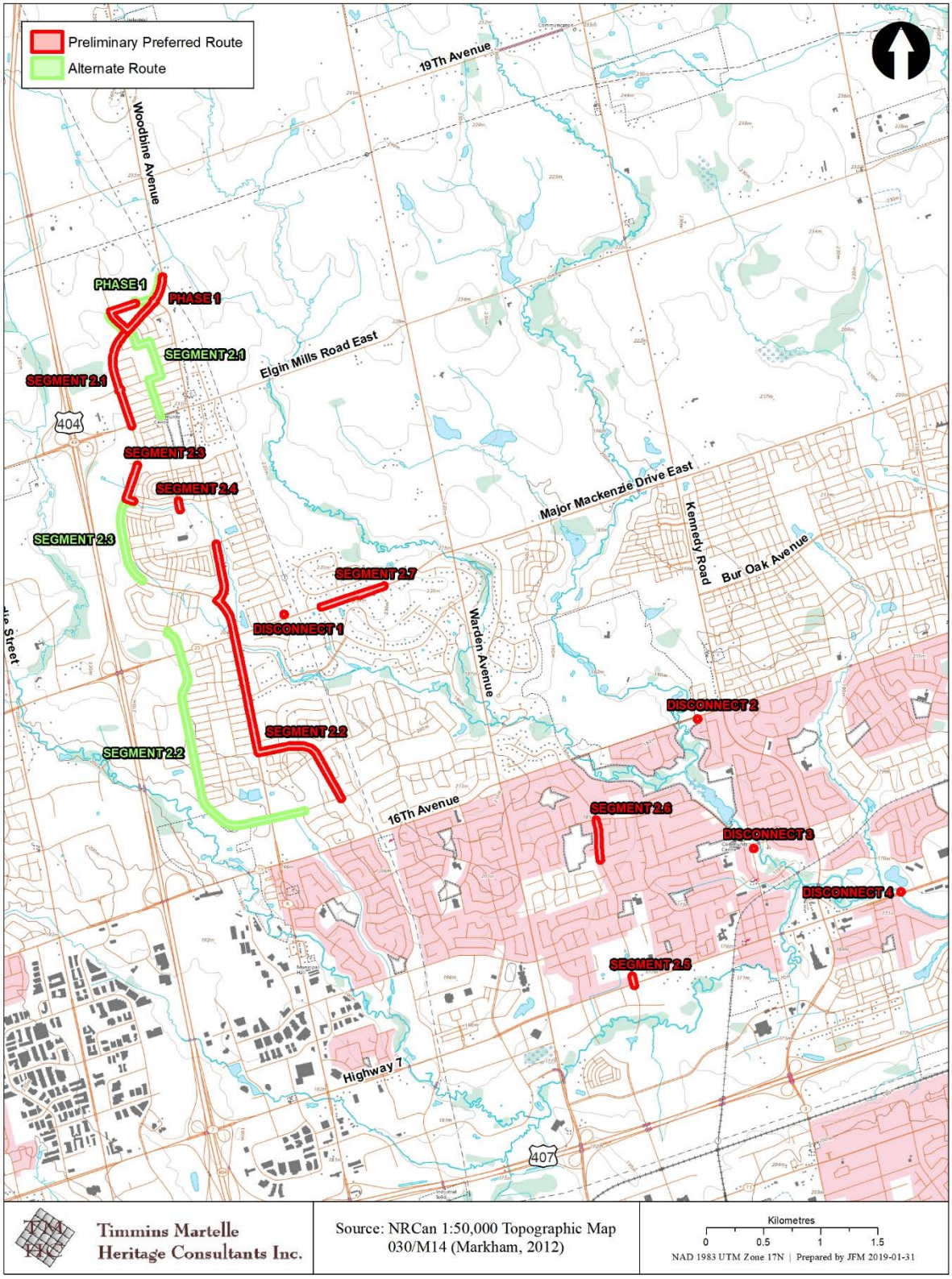
Image 68: PPR Disconnect 4 – North of HWY 7, East of Rouge River (looking east)



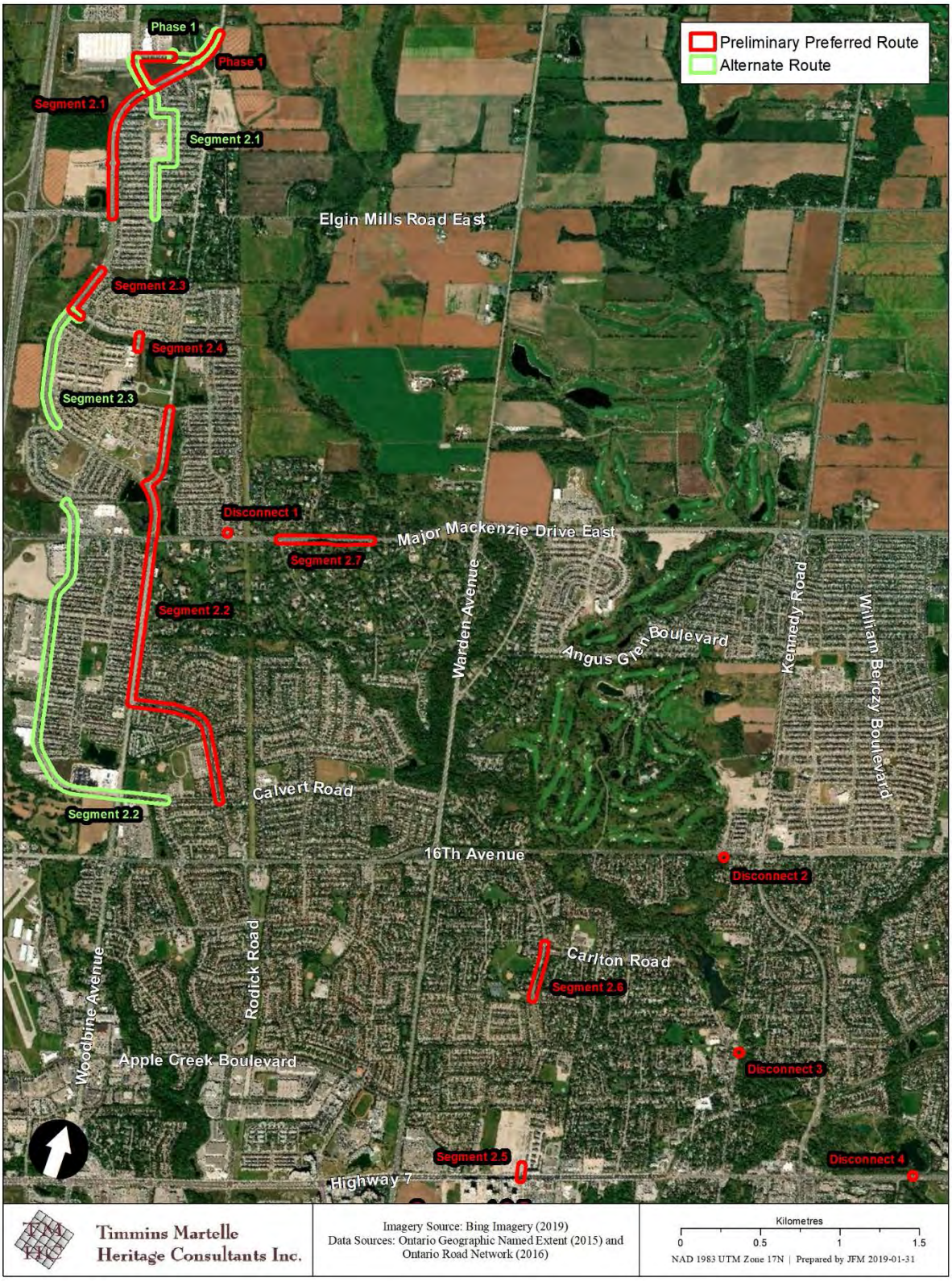
Image 69: PPR Disconnect 4 – North of HWY 7, East of Rouge River (looking west)



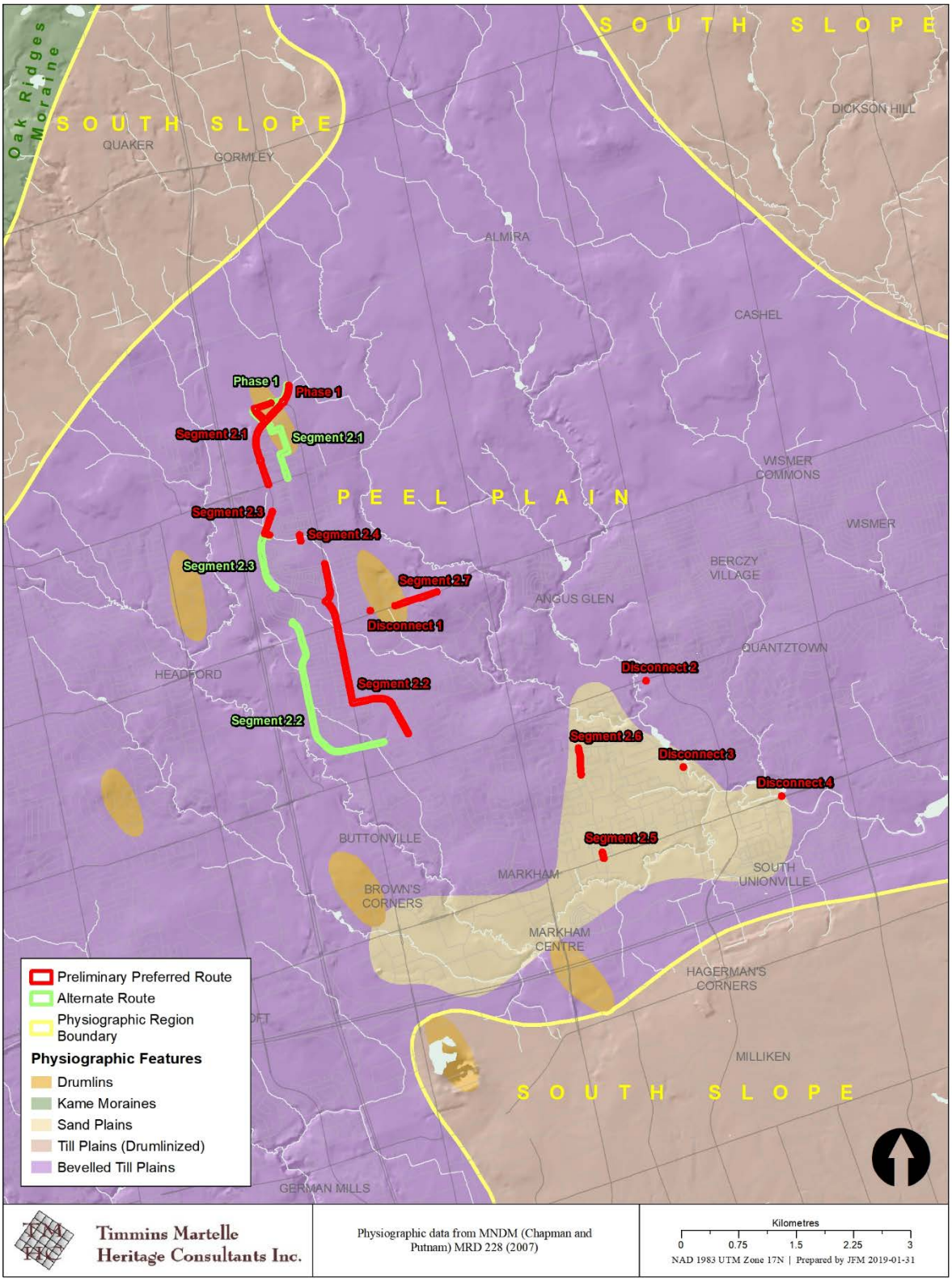
10.0 MAPS



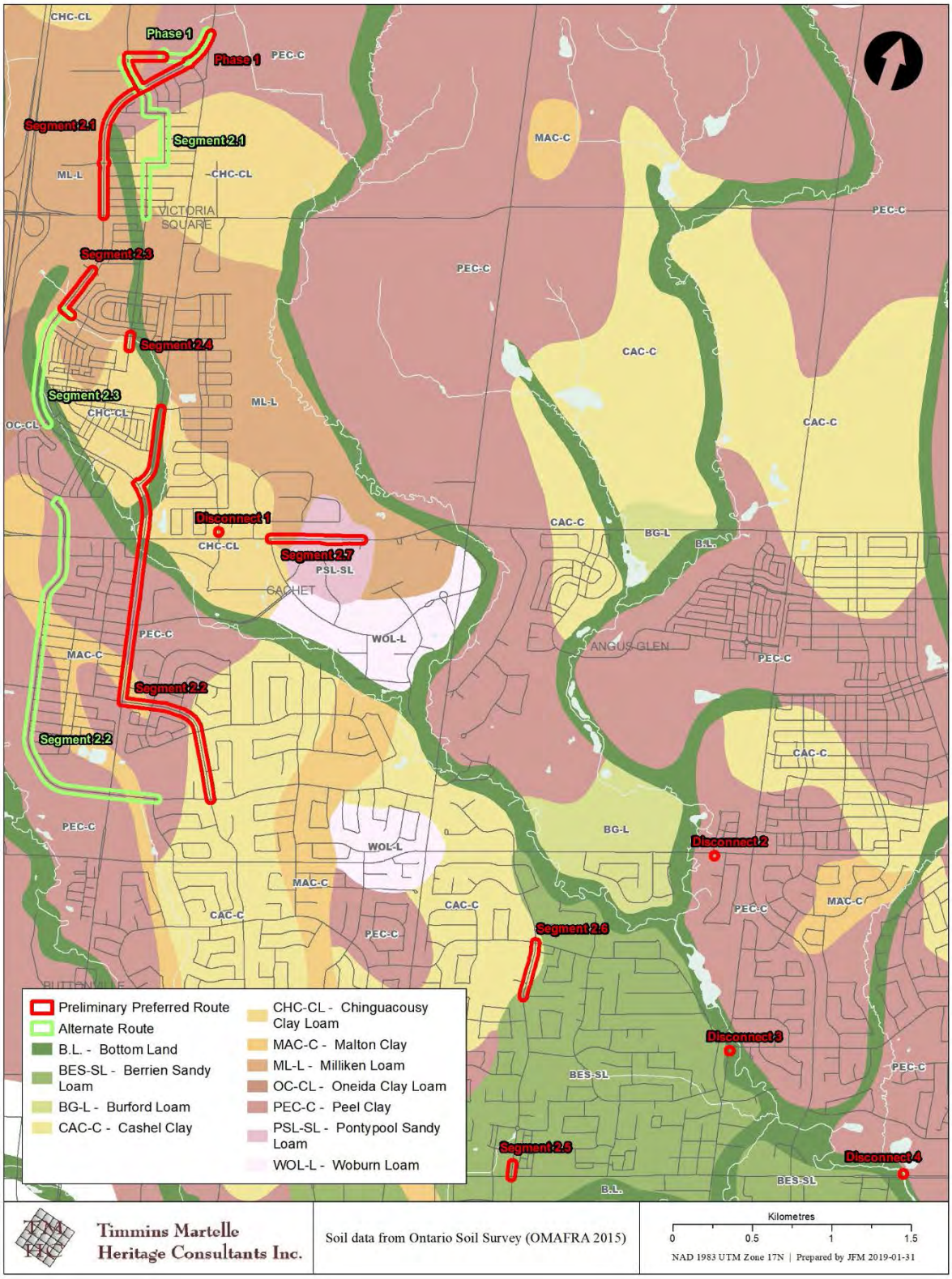
Map 1: Location of the Project Area in the City of Markham, ON



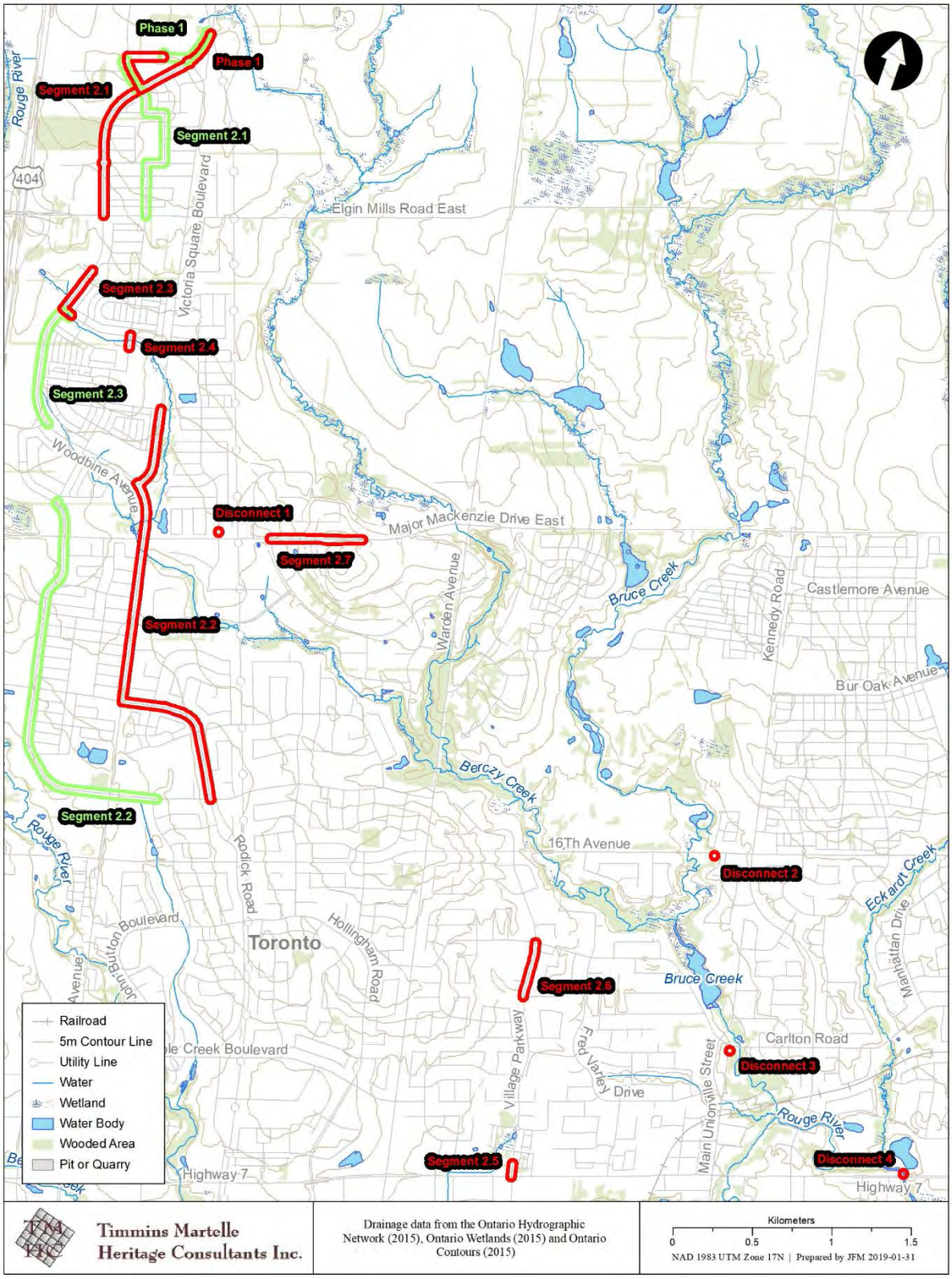
Map 2: Aerial Photograph Showing the Project Area in the City of Markham, ON



Map 3: Physiography within the Vicinity of the Project Area



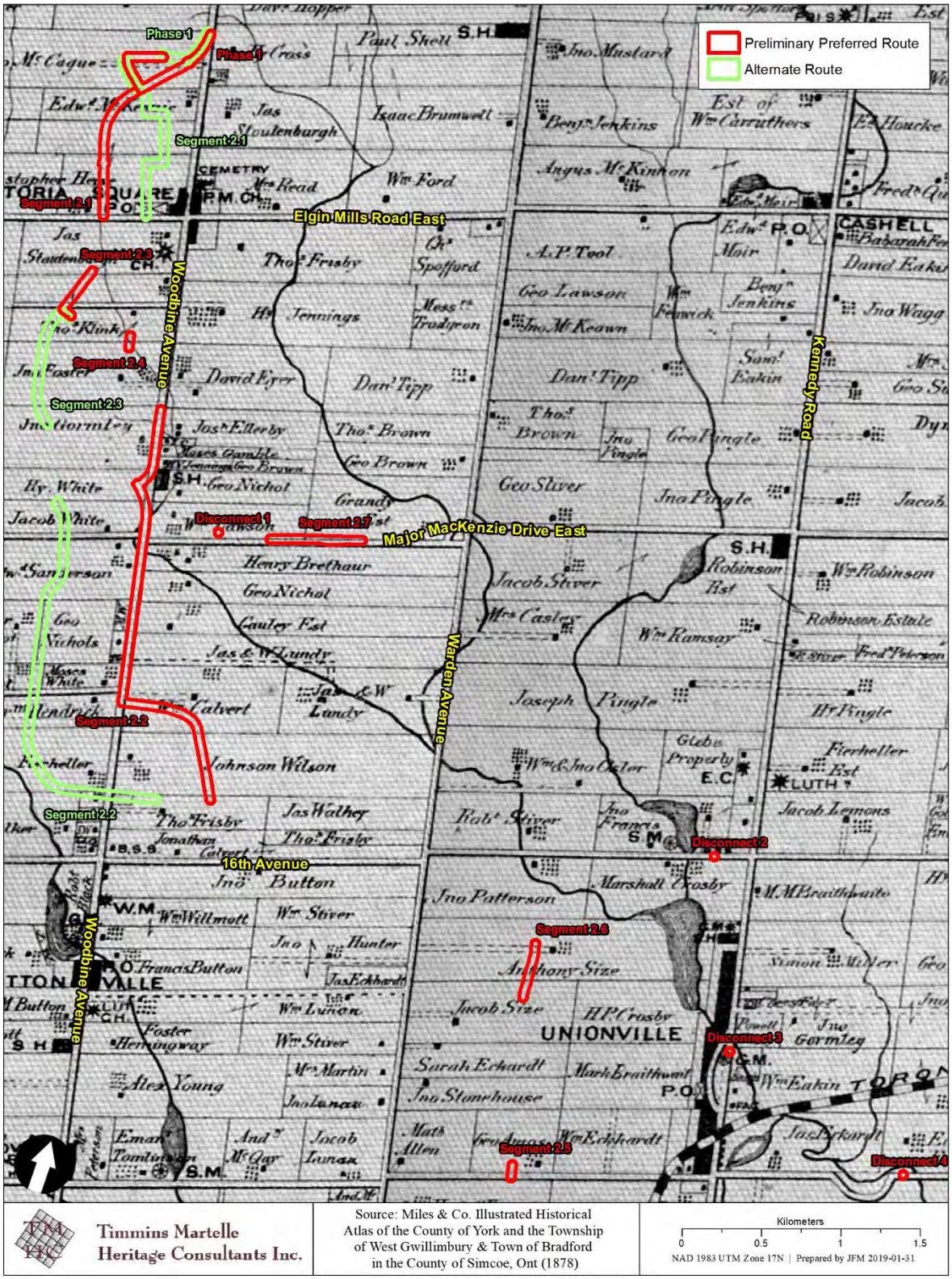
Map 4: Soils within the Vicinity of the Project Area



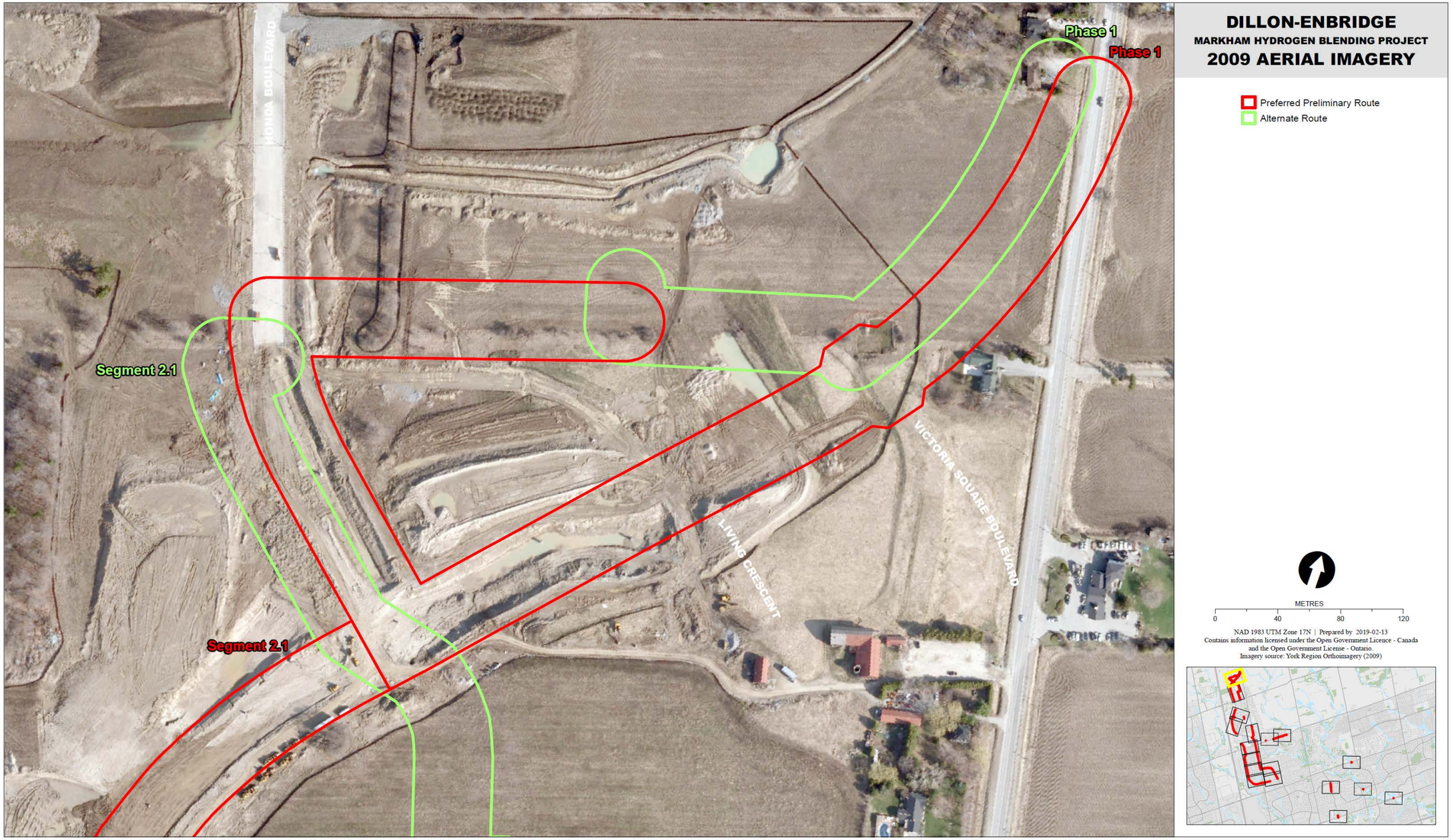
Map 5: Drainage within the Vicinity of the Project Area



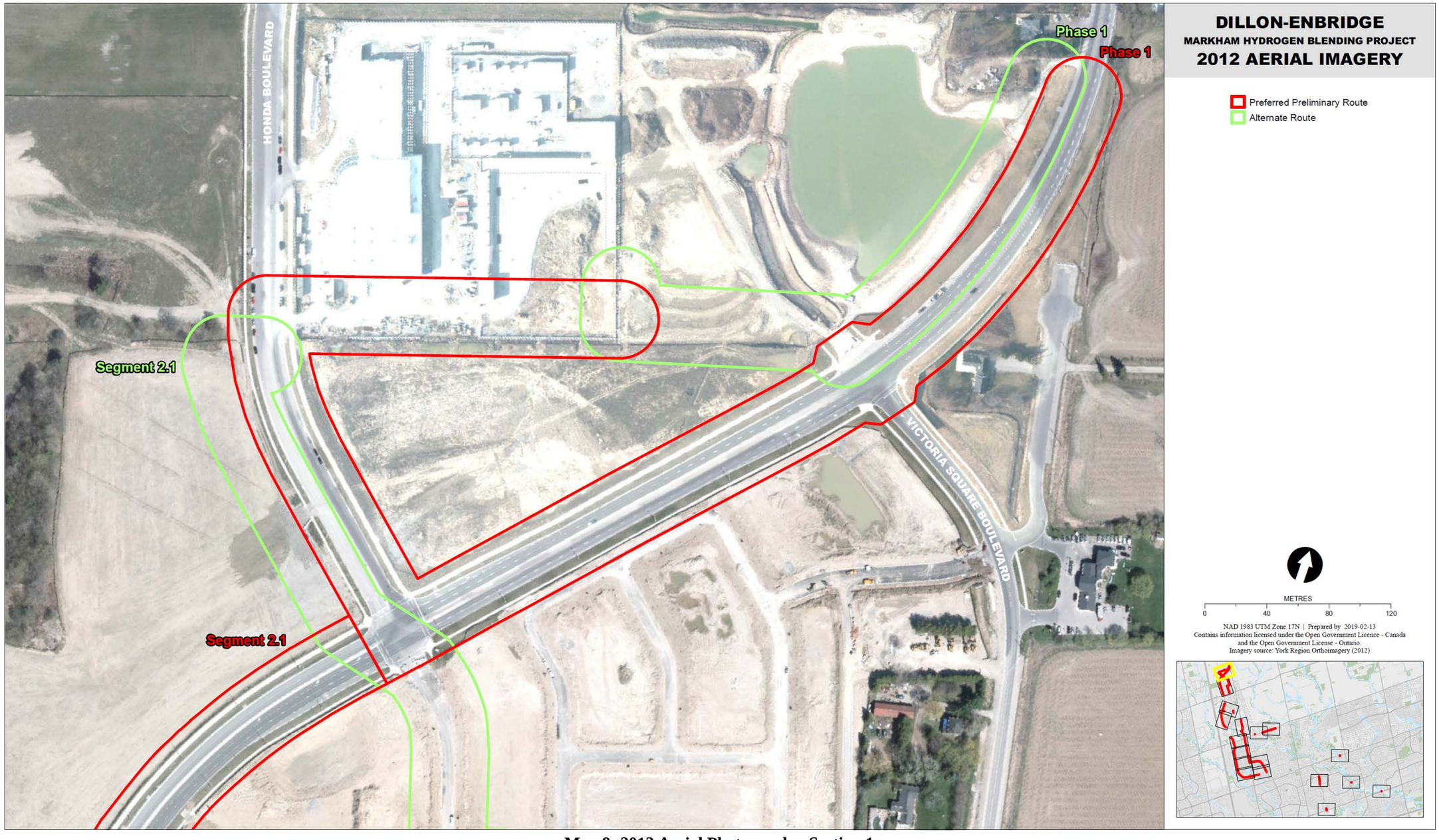
Map 6: Project Area Shown on the 1860 Map of York County, ON



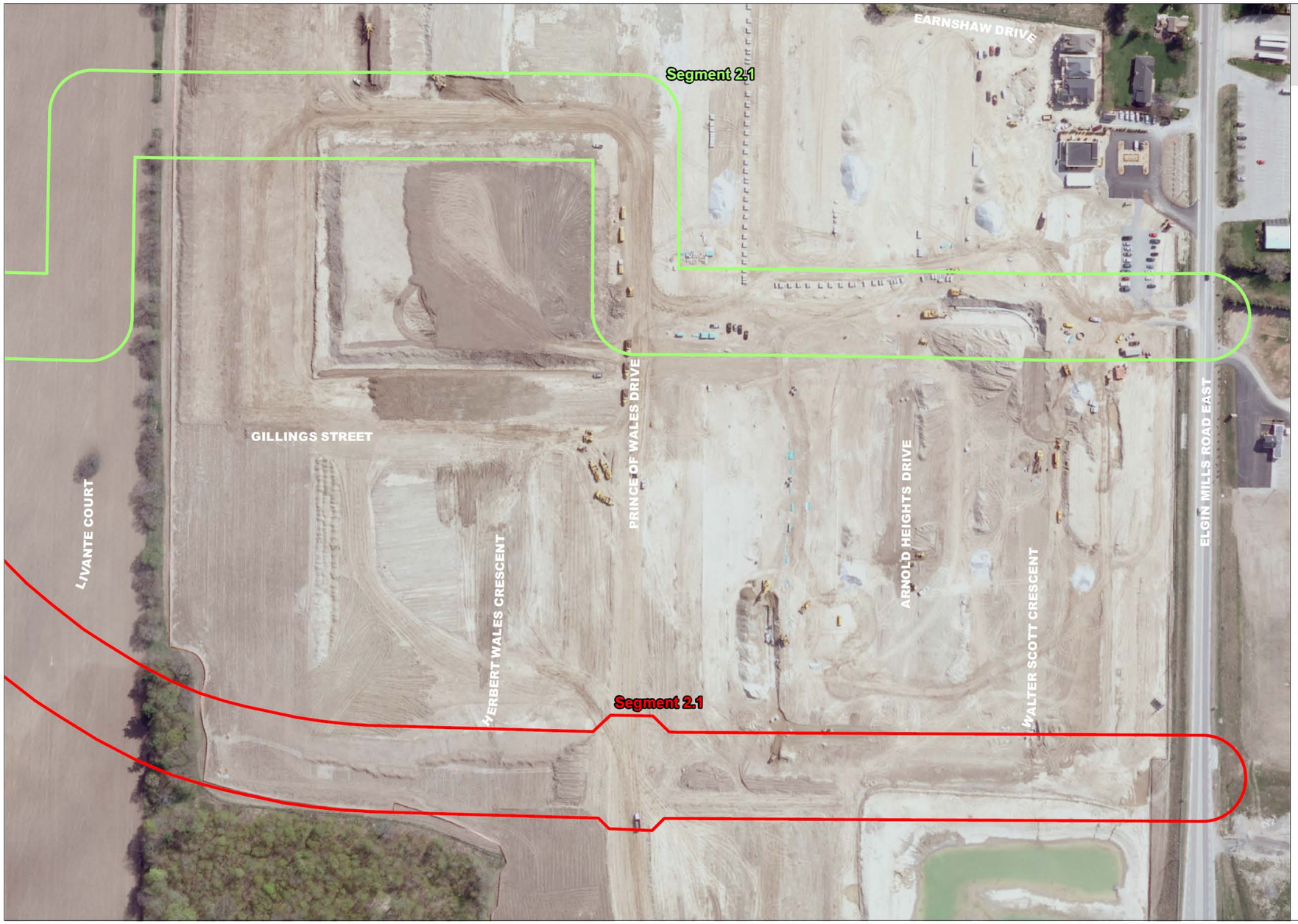
Map 7: Northern Project Area Shown on the 1878 Map of York County, ON



Map 8: 2009 Aerial Photograph – Section 1



Map 9: 2012 Aerial Photograph – Section 1

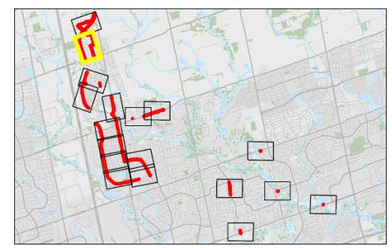


DILLON-ENBRIDGE
MARKHAM HYDROGEN BLENDING PROJECT
2007 AERIAL IMAGERY

Preferred Preliminary Route
Alternate Route

METRES
0 40 80 120

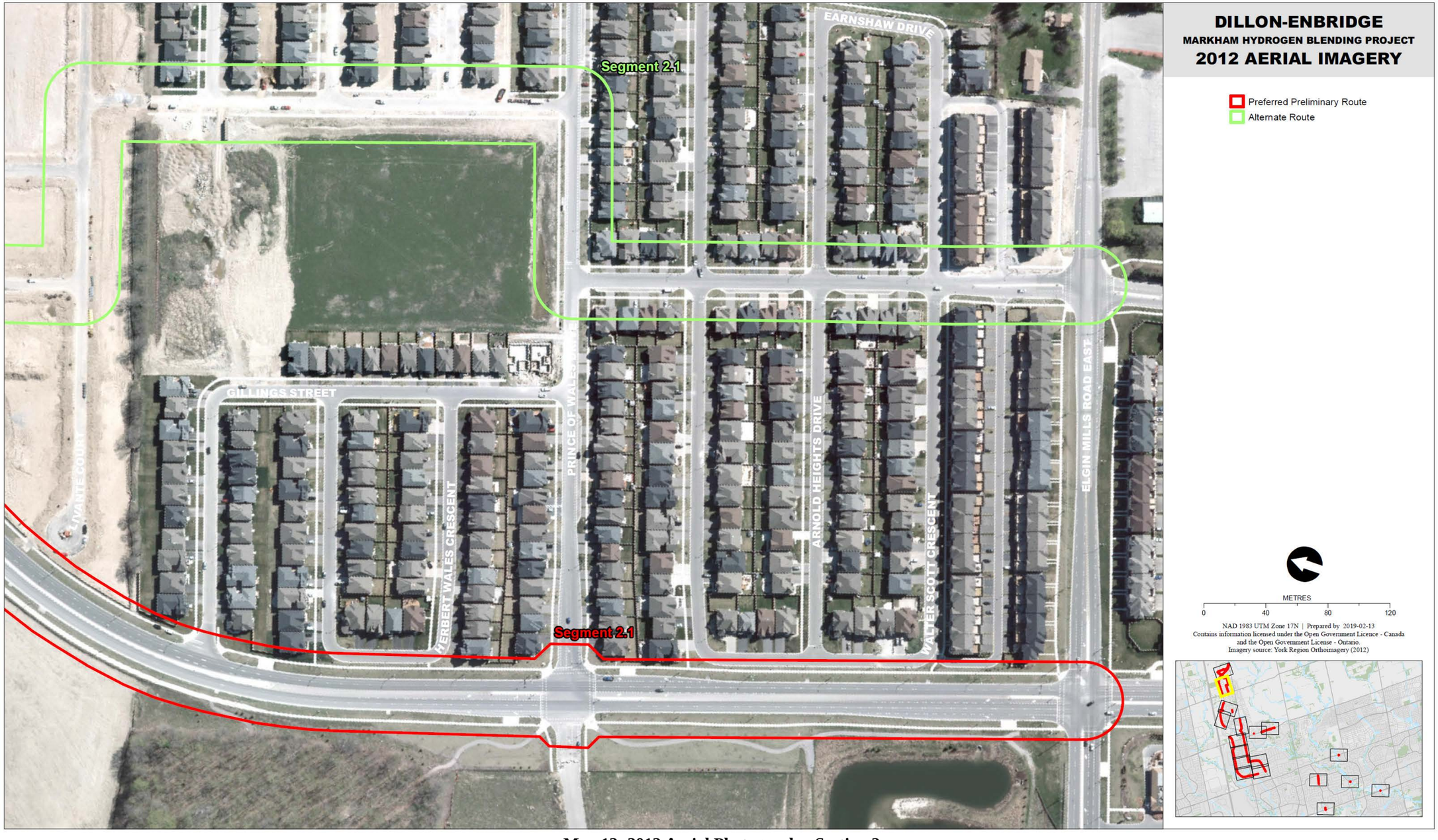
NAD 1983 UTM Zone 17N | Prepared by: 2019-02-13
Contains information licensed under the Open Government Licence - Canada and the Open Government License - Ontario.
Imagery source: York Region Orthoimagery (2007)



Map 10: 2007 Aerial Photograph – Section 2



Map 11: 2009 Aerial Photograph – Section 2



Map 12: 2012 Aerial Photograph – Section 2



Map 13: 2007 Aerial Photograph – Section 3



Map 14: 2009 Aerial Photograph – Section 3



Map 15: 1995 Aerial Photograph – Section 4



Map 16: 2009 Aerial Photograph – Section 4



Map 17: 1995 Aerial Photograph – Section 5



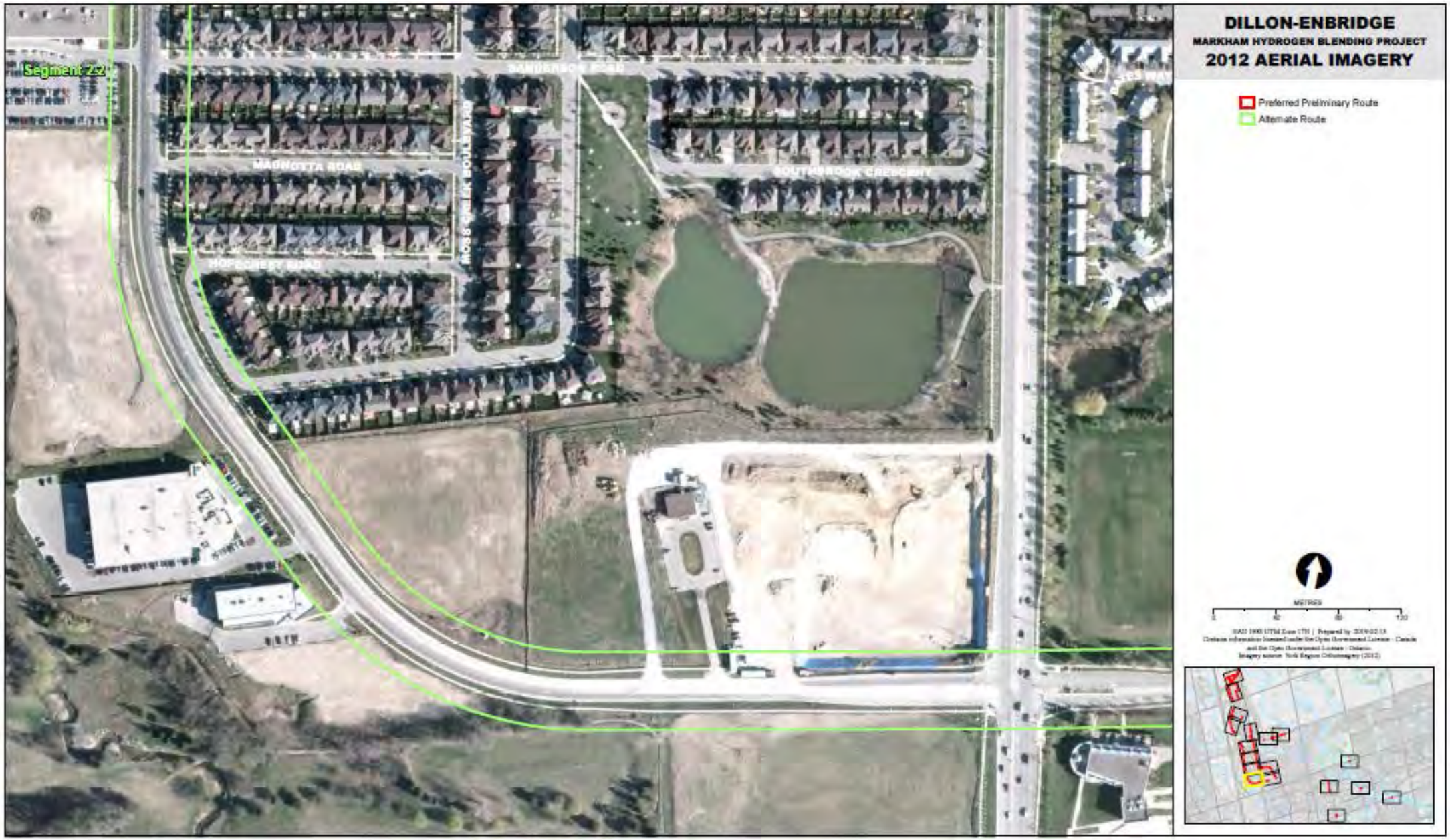
Map 18: 1999 Aerial Photograph – Section 5



Map 19: 1999 Aerial Photograph – Section 8



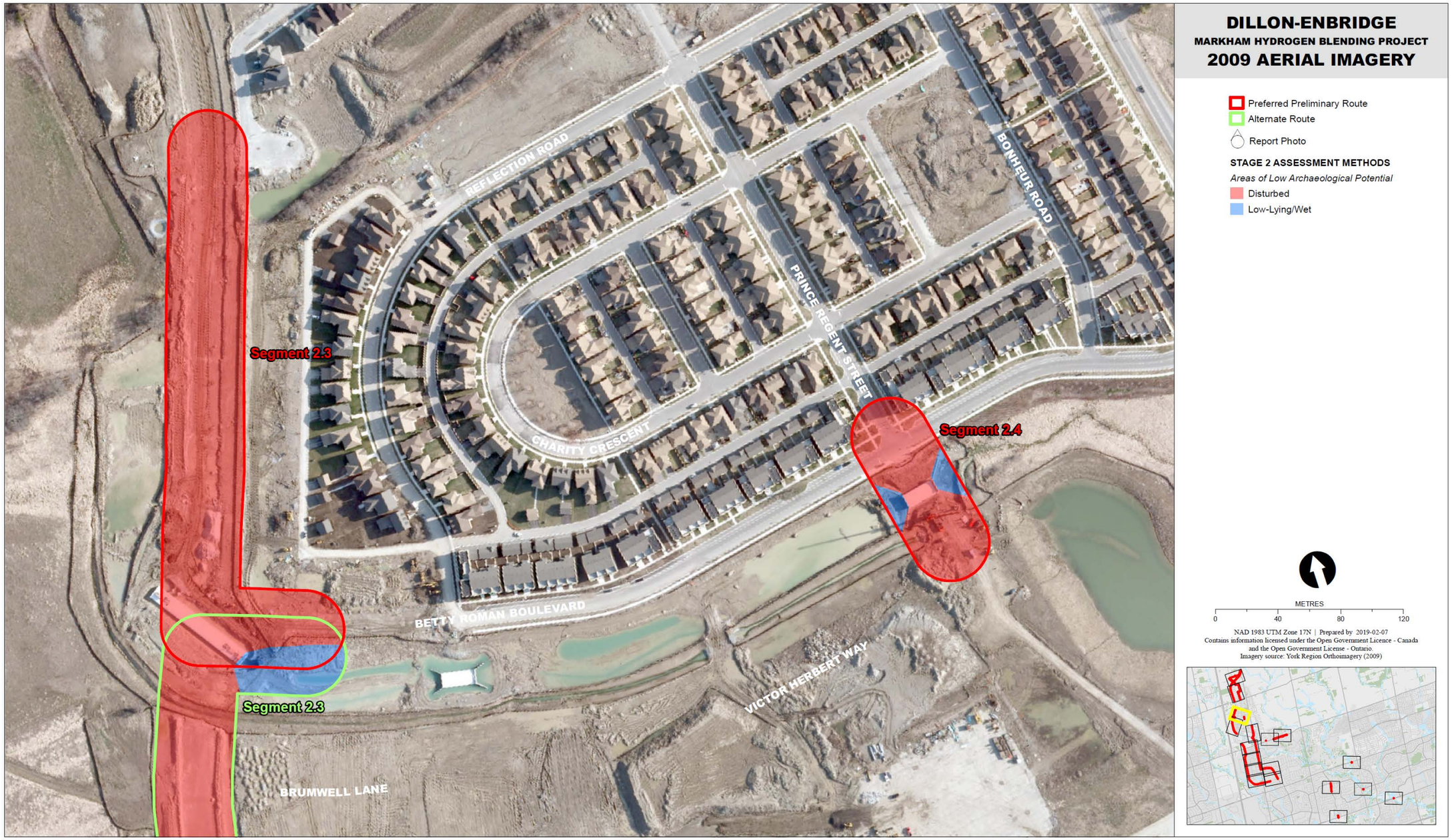
Map 20: 1999 Aerial Photograph – Section 8



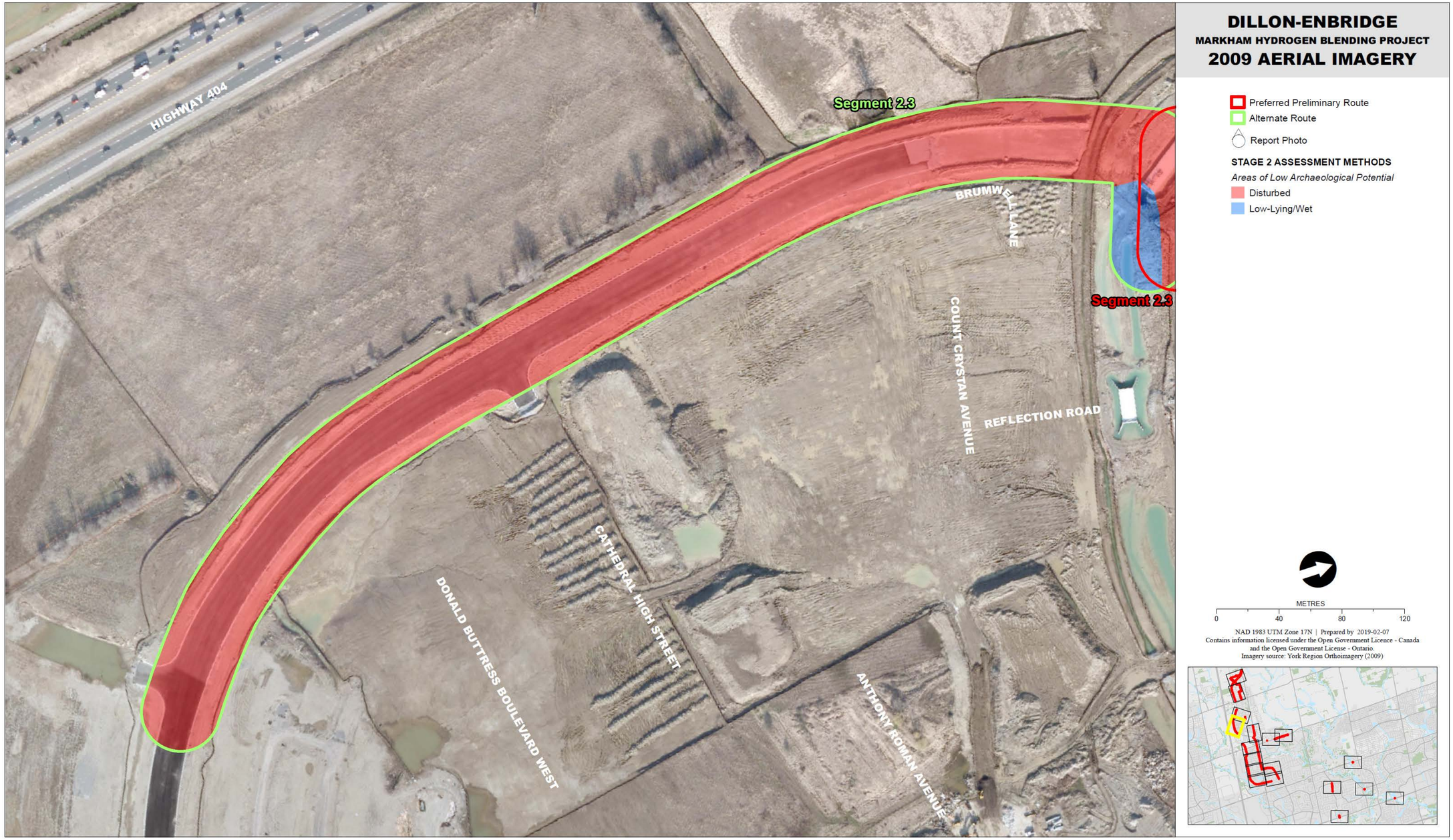
Map 21: 2012 Aerial Photograph – Section 8



Map 22: 1995 Aerial Photograph – Section 9



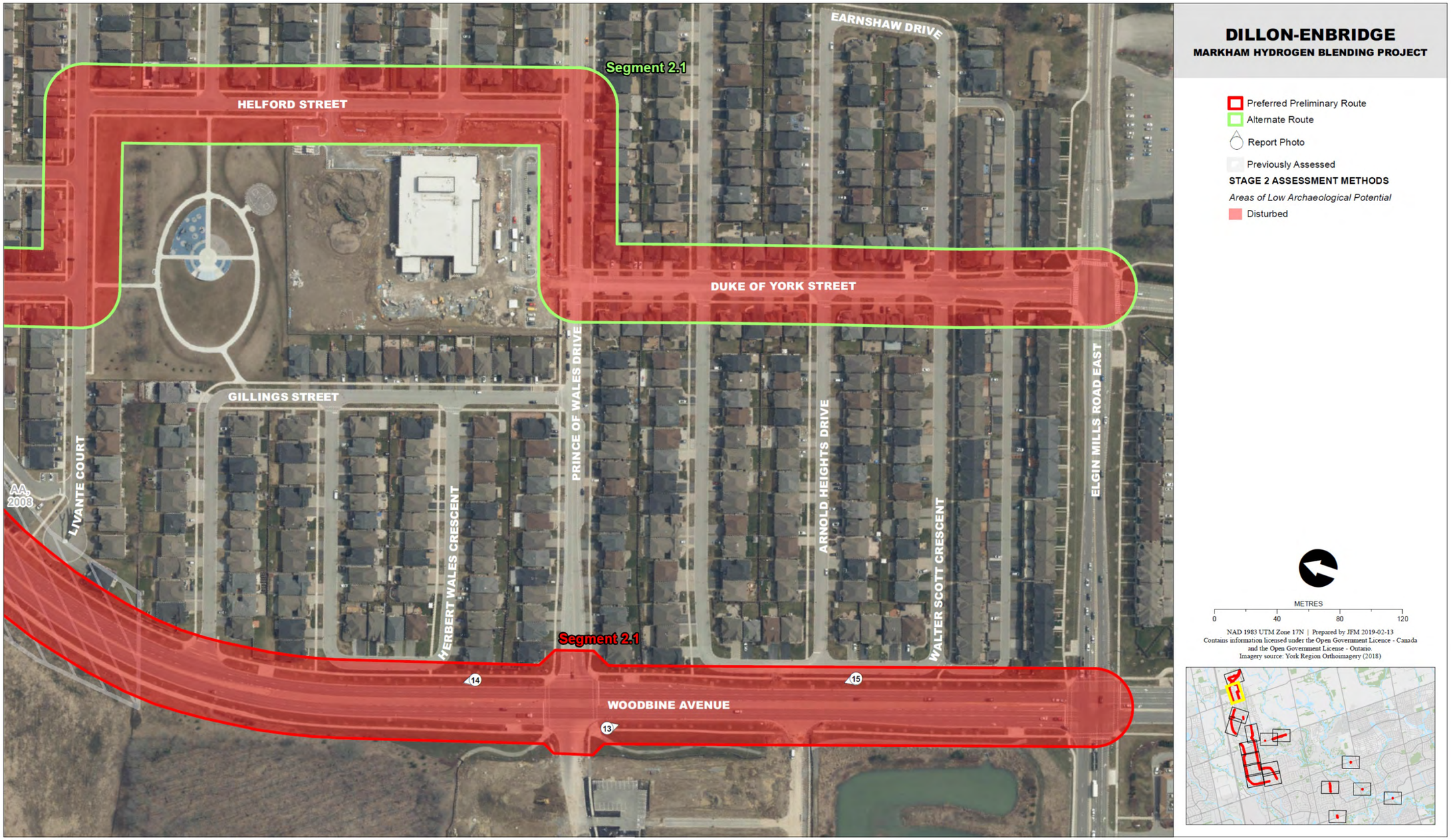
Map 23: 2009 Aerial Photograph – Section 10



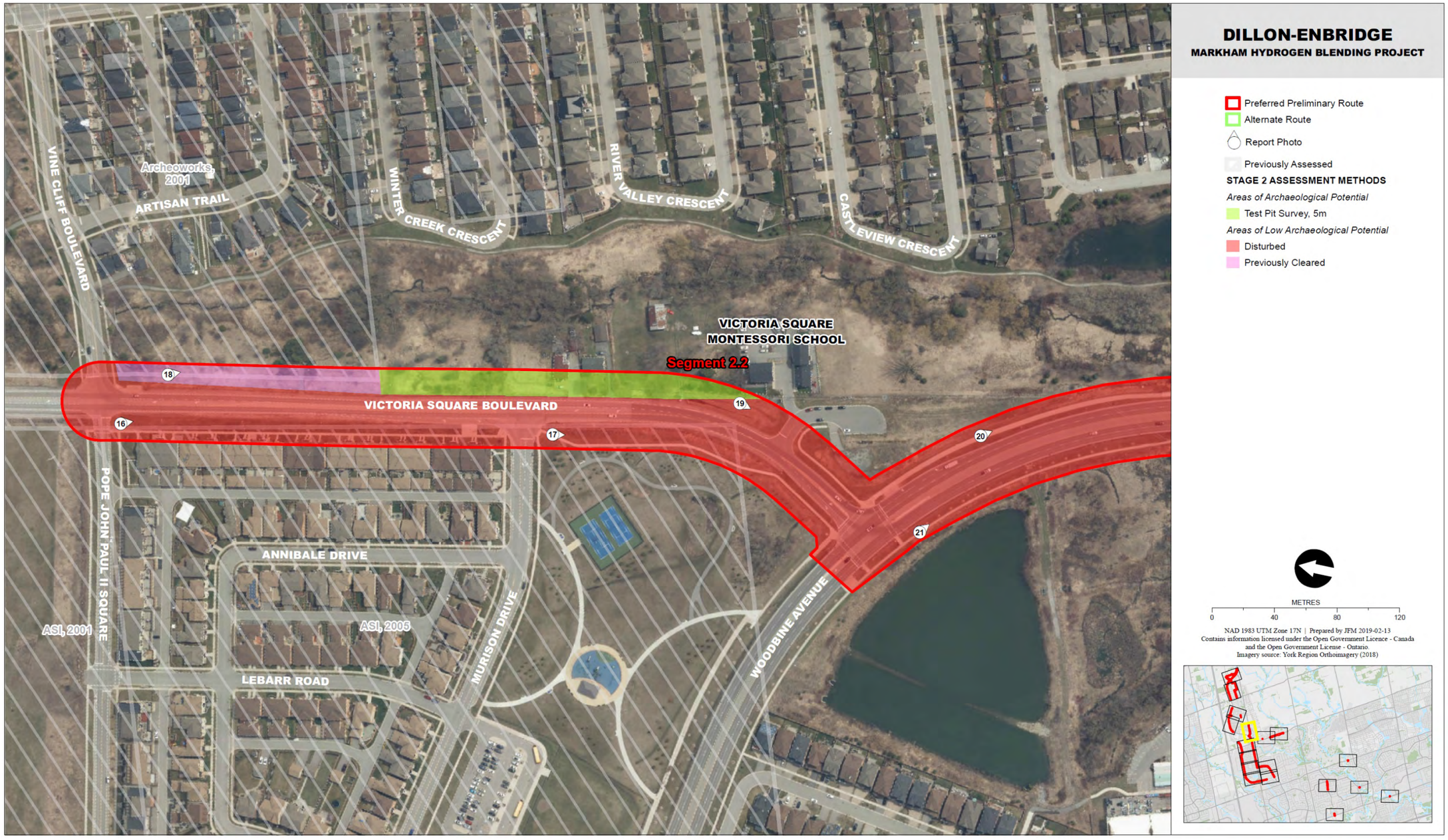
Map 24: 2009 Aerial Photograph – Section 11



Map 25: Stage 1 Areas of Archaeological Potential – Section 1



Map 26: Stage 1 Areas of Archaeological Potential – Section 2



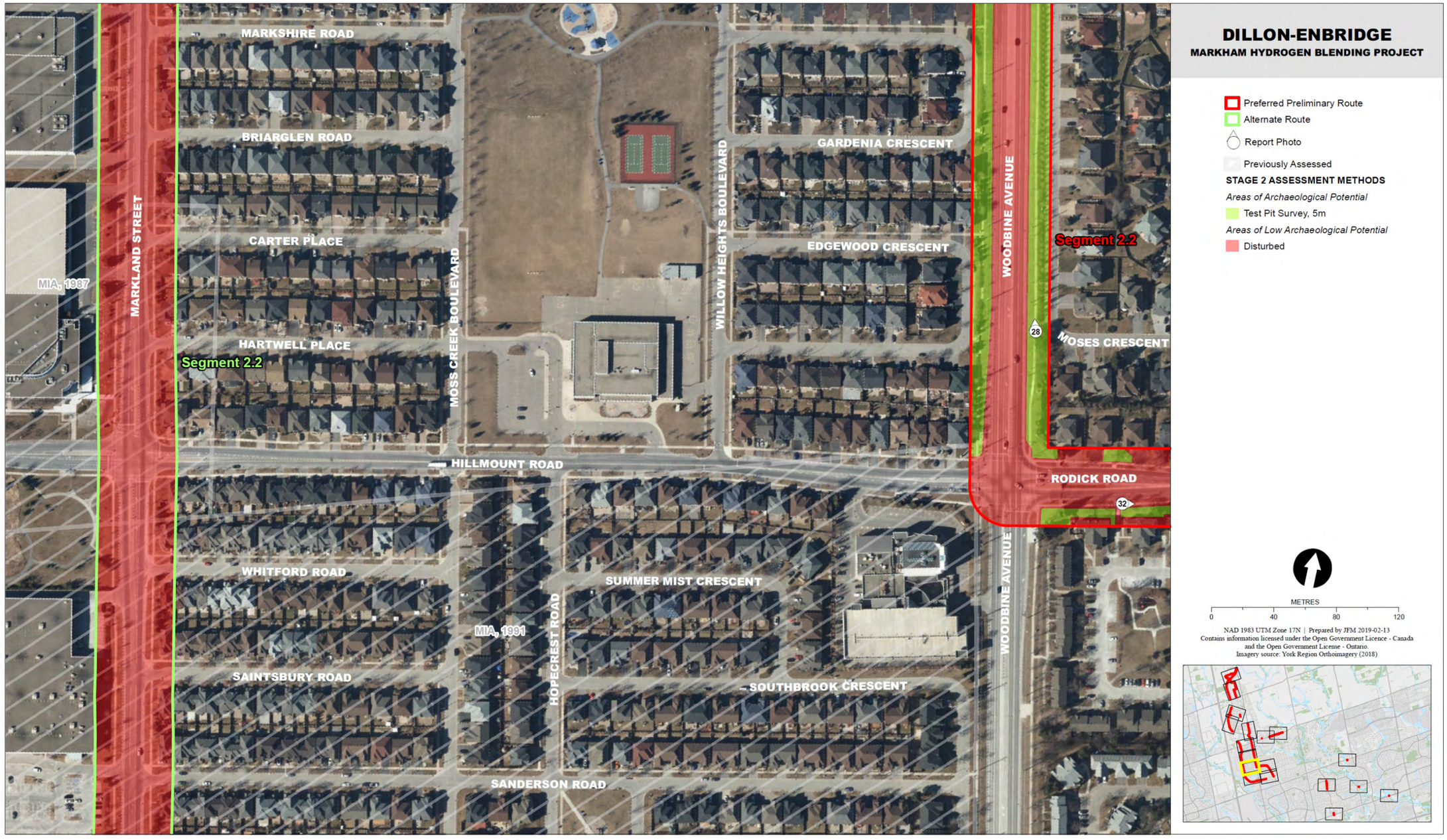
Map 27: Stage 1 Areas of Archaeological Potential – Section 3



Map 28: Stage 1 Areas of Archaeological Potential – Section 4



Map 29: Stage 1 Areas of Archaeological Potential – Section 5



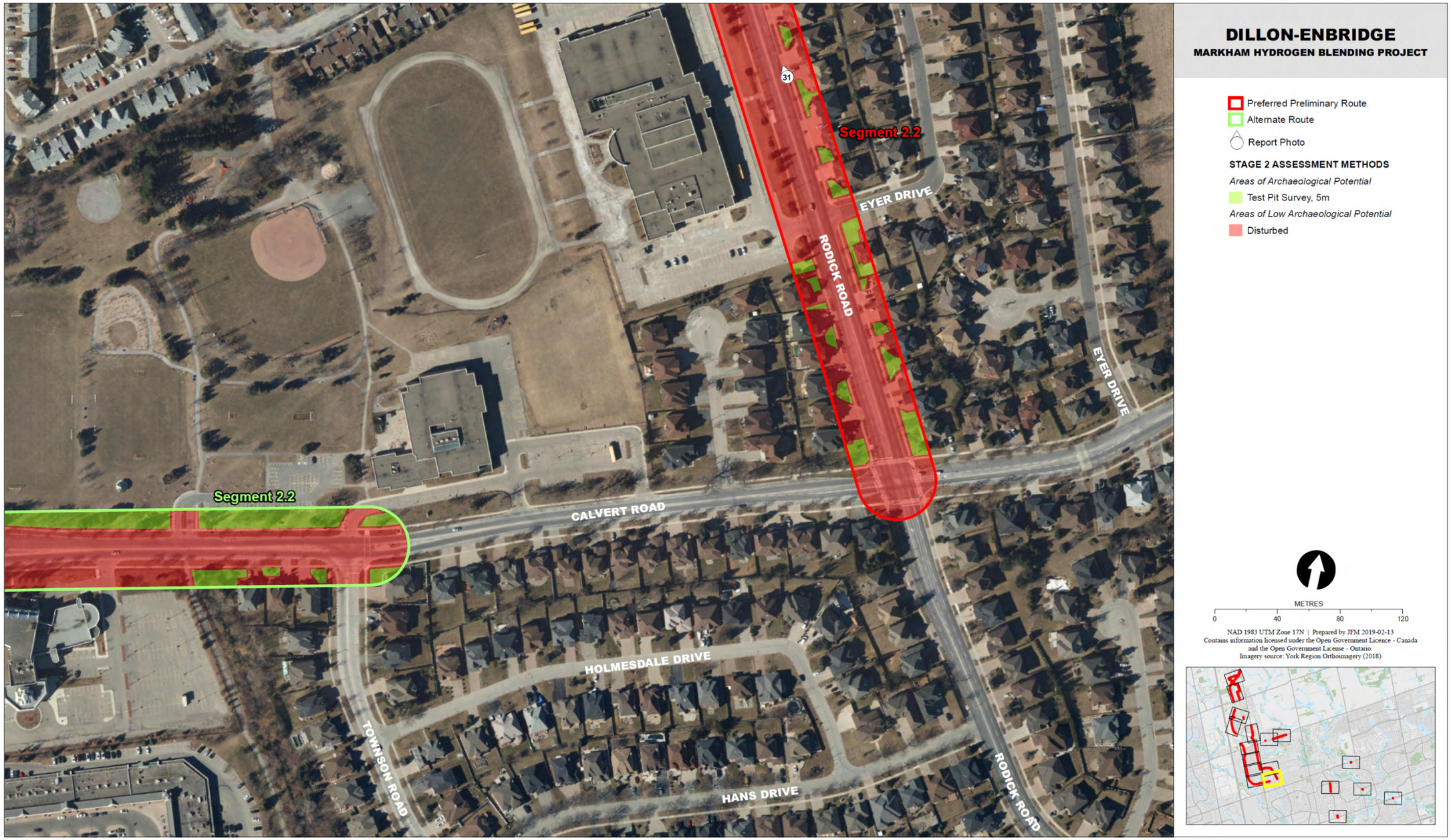
Map 30: Stage 1 Areas of Archaeological Potential – Section 6



Map 31: Stage 1 Areas of Archaeological Potential – Section 7



Map 32: Stage 1 Areas of Archaeological Potential – Section 8



Map 33: Stage 1 Areas of Archaeological Potential – Section 9



Map 34: Stage 1 Areas of Archaeological Potential – Section 10



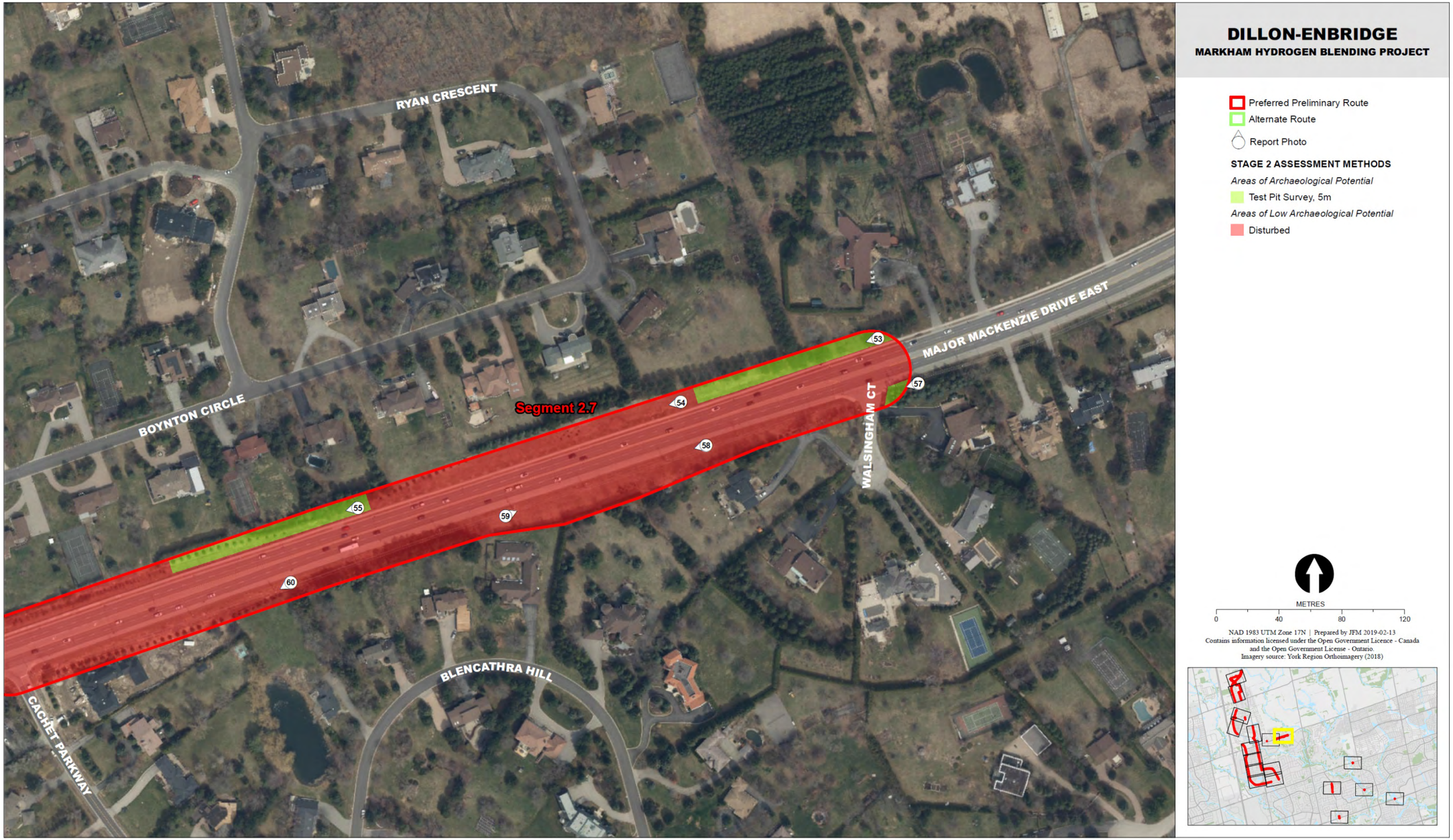
Map 35: Stage 1 Areas of Archaeological Potential – Section 11



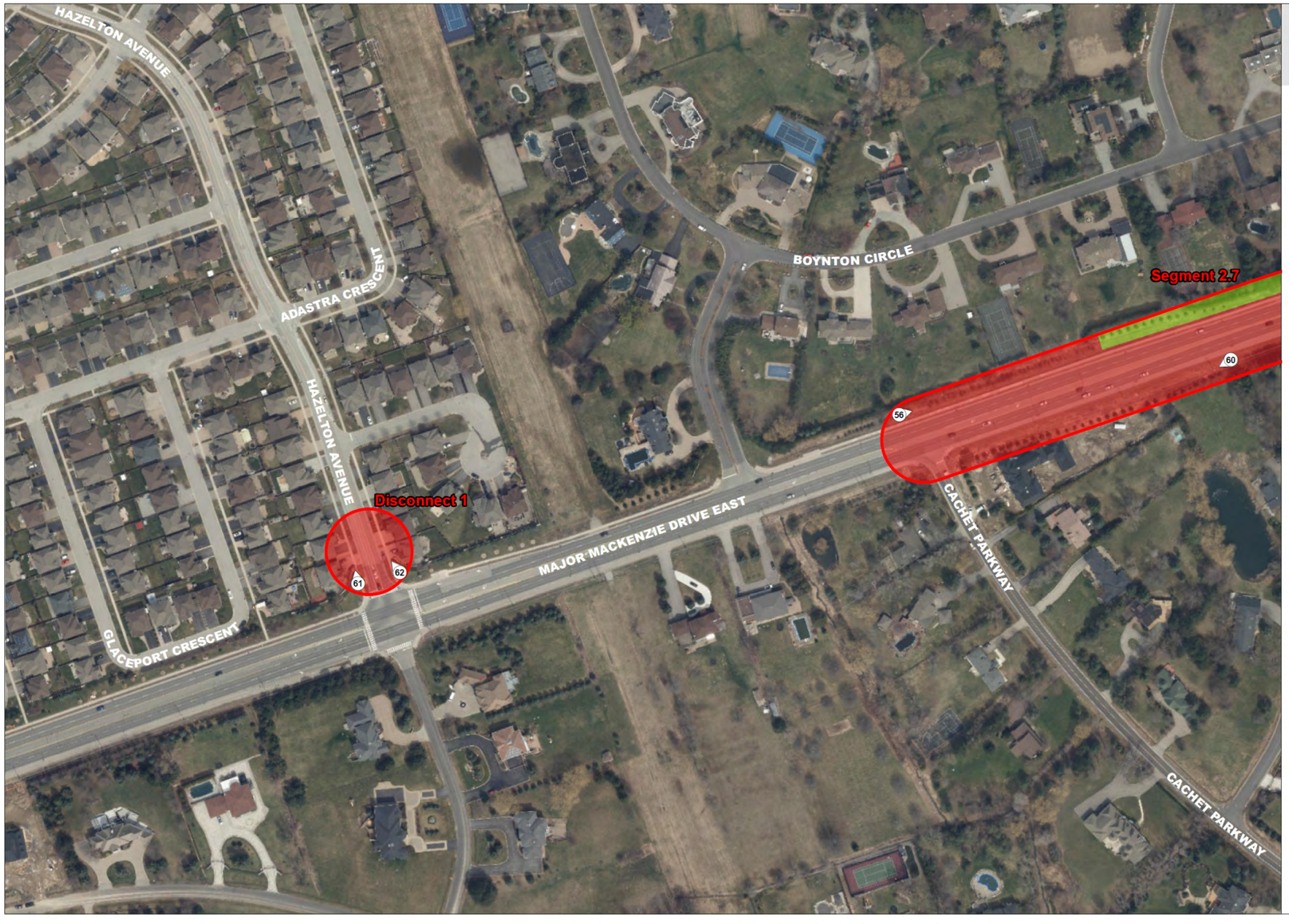
Map 36: Stage 1 Areas of Archaeological Potential – Section 12



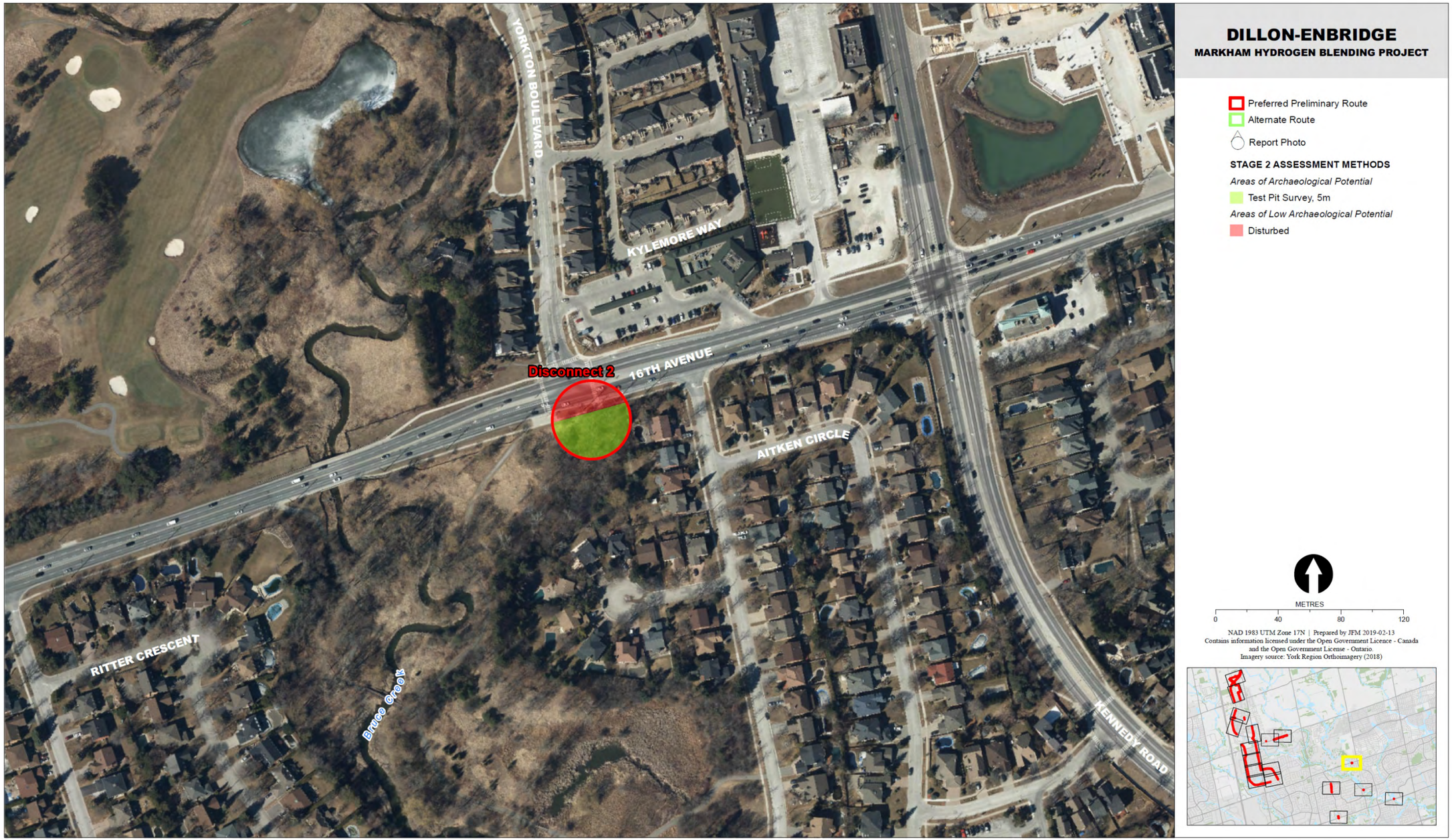
Map 37: Stage 1 Areas of Archaeological Potential – Section 13



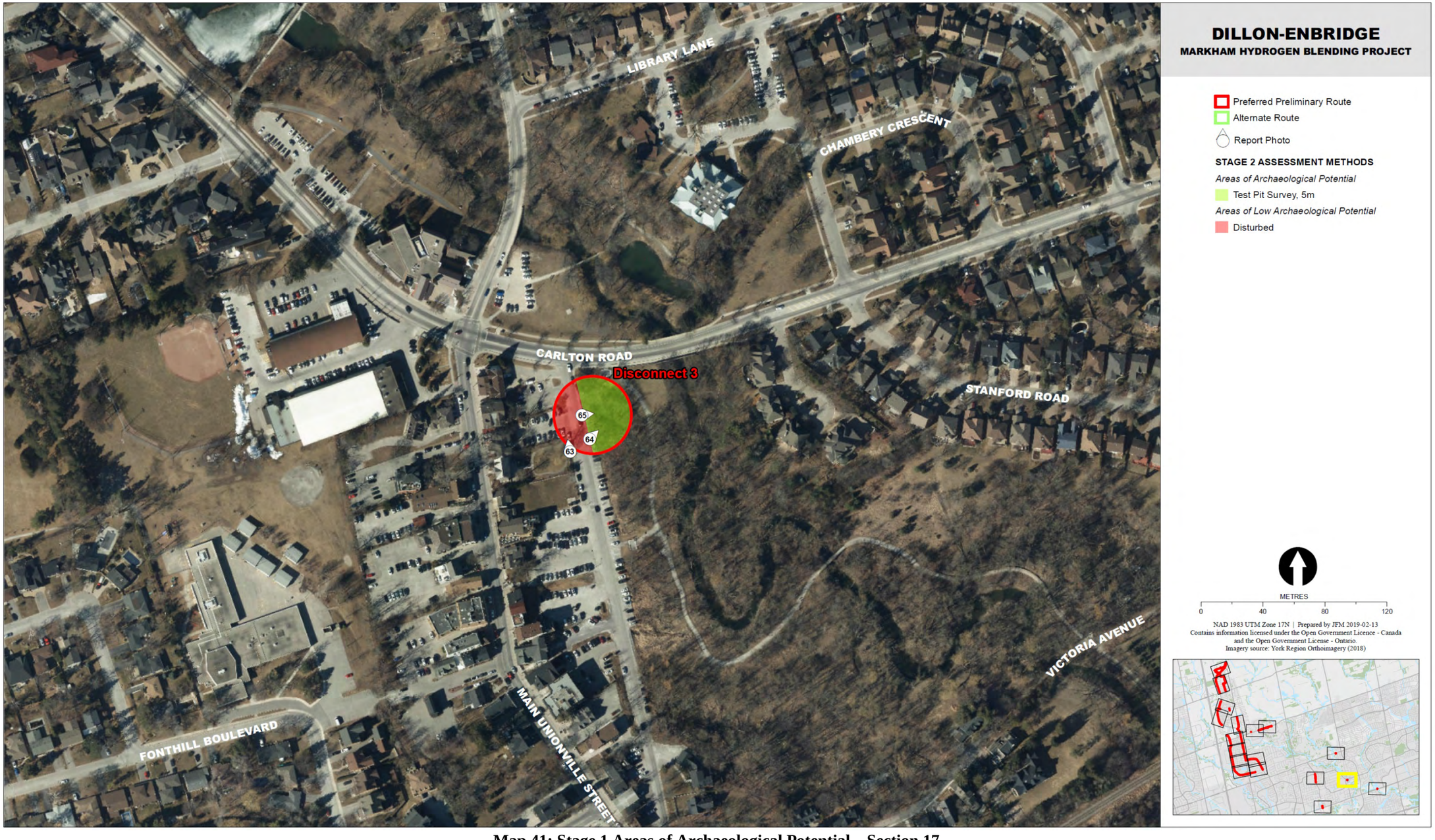
Map 38: Stage 1 Areas of Archaeological Potential – Section 14



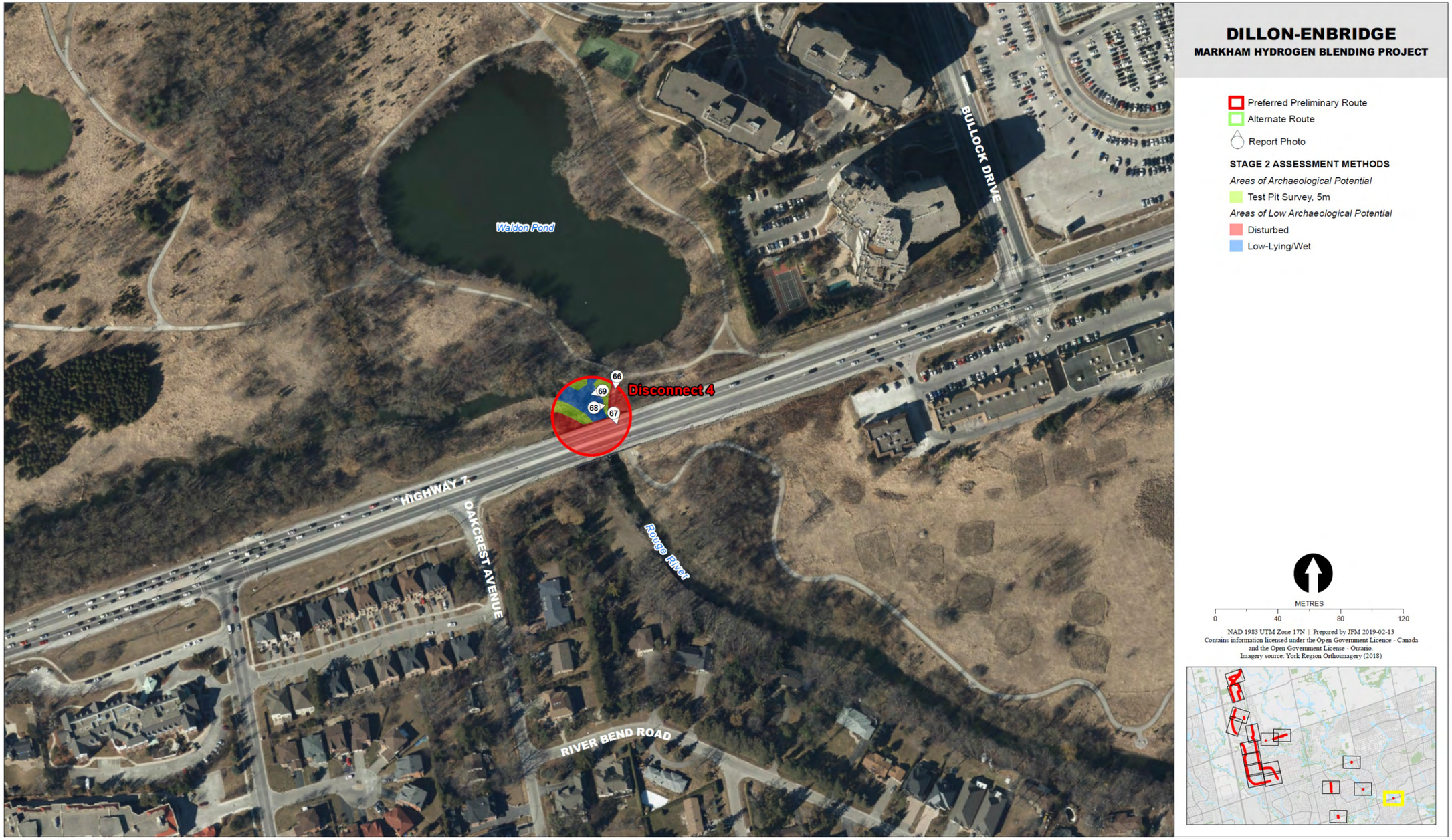
Map 39: Stage 1 Areas of Archaeological Potential – Section 15



Map 40: Stage 1 Areas of Archaeological Potential – Section 16



Map 41: Stage 1 Areas of Archaeological Potential – Section 17



Map 42: Stage 1 Areas of Archaeological Potential – Section 18

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Slide Deck for Meeting this morning

1 message

[redacted].com> Fri, May 3, 2019 at 9:09 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]
Sent: Friday, May 03, 2019 8:53 AM
To: [redacted]
Subject: Slide Deck for Meeting this morning

Good morning [redacted]

Attached is the slide deck for our meeting this morning in addition to the map and the graphic I sent you yesterday. I will call you around 9:00 a.m. at 418-843-3767 x. 2105

Thanks!

[redacted]

[redacted]
Sr. Advisor, Community Engagement, Eastern Region

Public Affairs and Communications

ENBRIDGE PIPELINES INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

Integrity. Safety. Respect.

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Life Takes Energy

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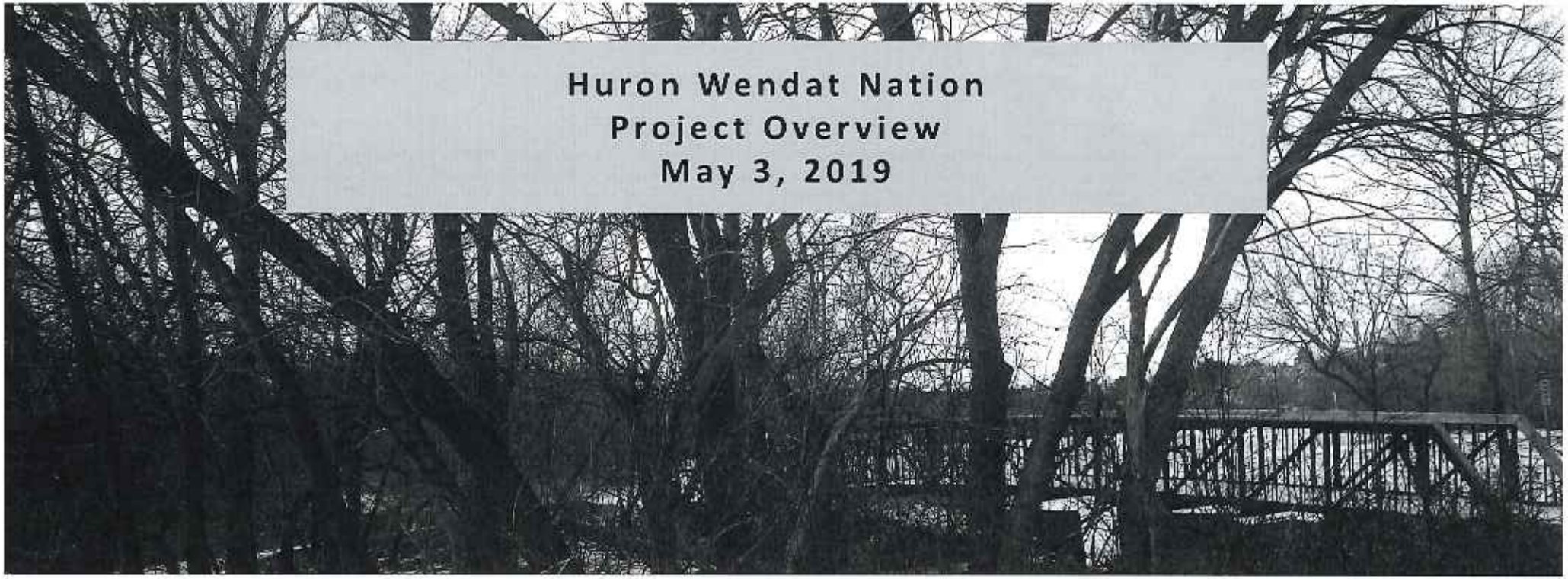
CONSULTING

Low-Carbon Energy Project



Huron Wendat Nation
Project Overview
May 3, 2019

Purpose

Who we are

Enbridge provides safe and reliable delivery of natural gas to more than 3.7 million residential, commercial, and industrial customers across Ontario. Enbridge is committed to minimizing our impacts to the environment in a responsible manner.

Why are we here?

- To provide information about the Low-Carbon Energy Project.
- To involve the community, stakeholders and Indigenous groups and receive and consider your input.
- To present the Preliminary Preferred Route.
- To discuss construction and environmental mitigation.



Please sign in at the front desk and provide your input on the project by completing a questionnaire.

Project Introduction

What is being proposed?

Enbridge is proposing to blend a low concentration of hydrogen into an isolated area of the gas distribution network in an effort to reduce greenhouse emissions.

This would require the installation of 6.8 km of pipeline and associated infrastructure.



How would this work?

- Currently, Ontario produces electricity but sometimes there is more electricity made than used.
- We take the surplus electricity and produce hydrogen gas through Hydrogenics electrolysis technology.
- The hydrogen gas is stored and can be converted back into electricity when needed, or blended with natural gas as a less carbon-intensive energy source.

Hydrogen Blending



Hydrogen blending is when small amounts of hydrogen are injected into the natural gas grid.



The benefit for the environment will be a more "green" gas mixture with fewer carbon emissions.



About 2% of the blended gas will be hydrogen (by volume). The blended gas would remain within pipeline specifications. There would be no changes to the reliability of the service in the blended gas areas.



With such a small amount of hydrogen being introduced, customers should see no impact to their existing service compared to pure natural gas.

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Life Takes Energy

Hydrogen Compared to Natural Gas



Similar

- Both fuels are lighter than air and will rise and disperse when released into the atmosphere.
- Both fuel sources require proper handling for safe use, and are flammable and explosive under certain conditions.



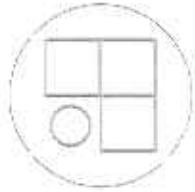
Well-known

- Hydrogen is used today in many manufacturing processes, for example for pharmaceuticals and foods like vegetable oil.



Advantage

- It is non-toxic and when used as a sole fuel it does not contribute to climate change.



Difference

- The hydrogen molecule is smaller than natural gas.
- Hydrogen burns more quickly.

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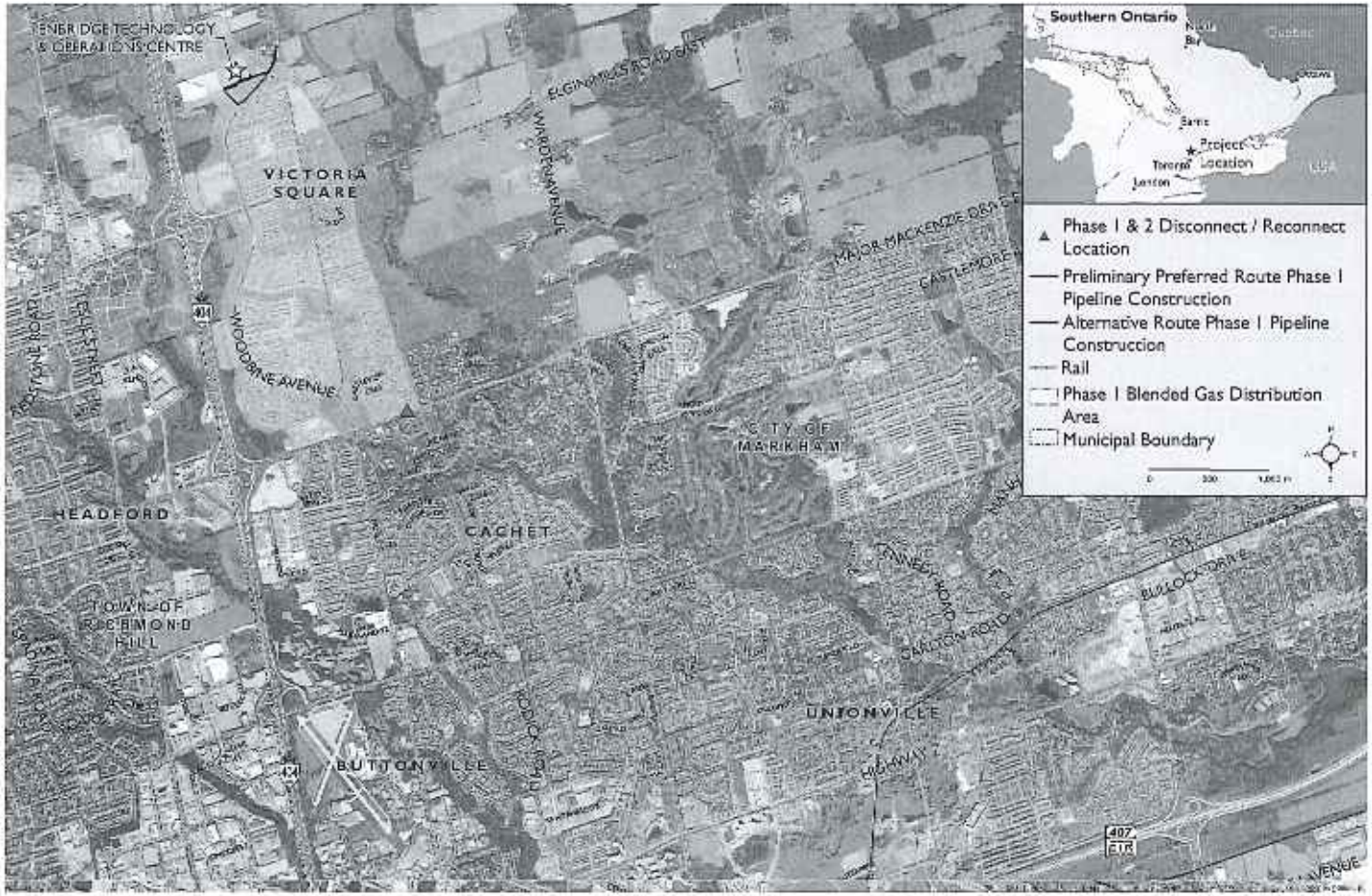
ENBRIDGE Life Takes Energy

Project Location – Phase 1



Blended Gas Distribution Area

Hydrogen blending will be isolated to the area shown on the map. Blended gas will be added into the system from Enbridge's Markham-based Technology and Operations Centre.

Pipeline Installation

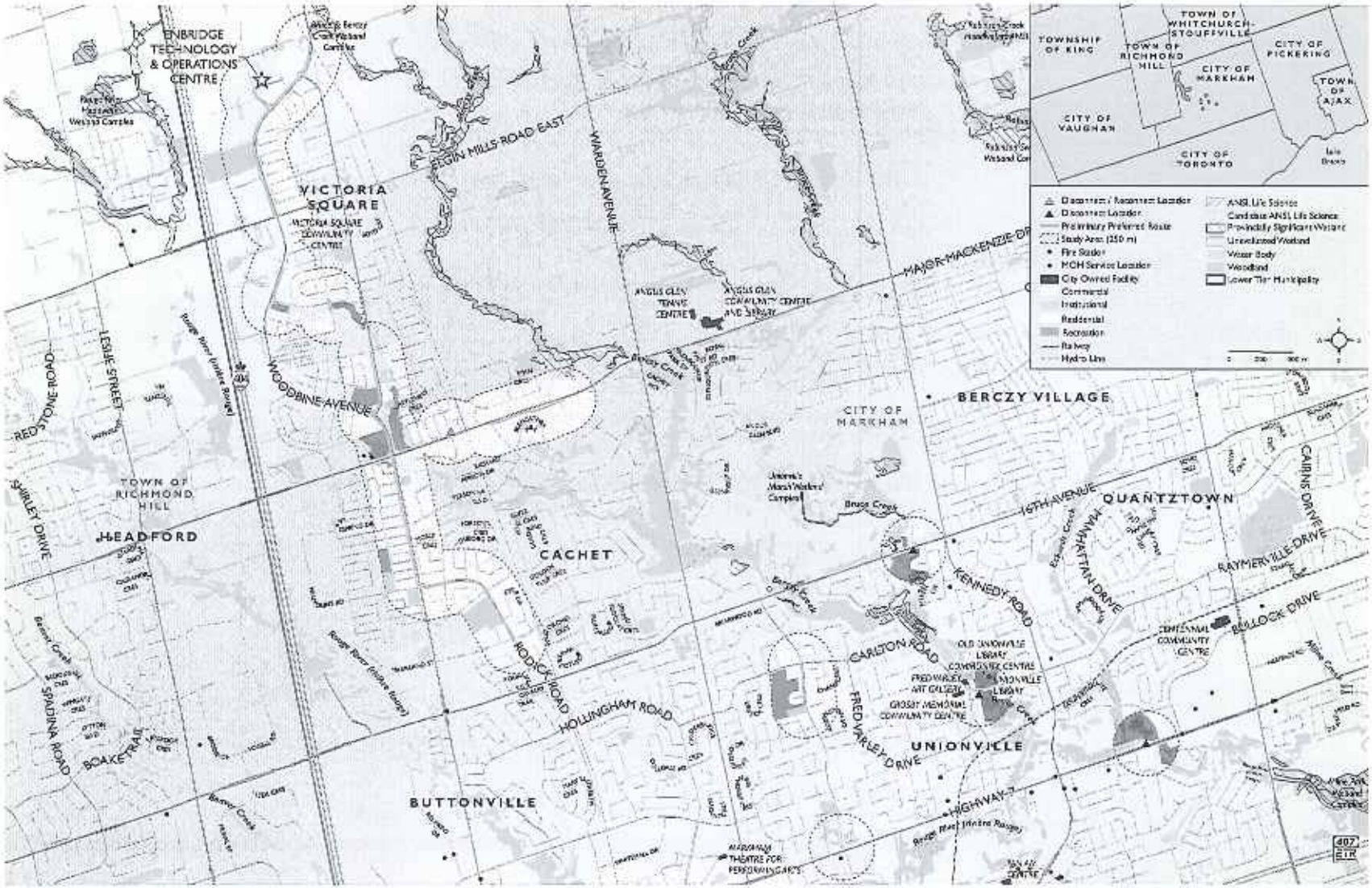
Phase 1: approximately 1.3 km of pipe.

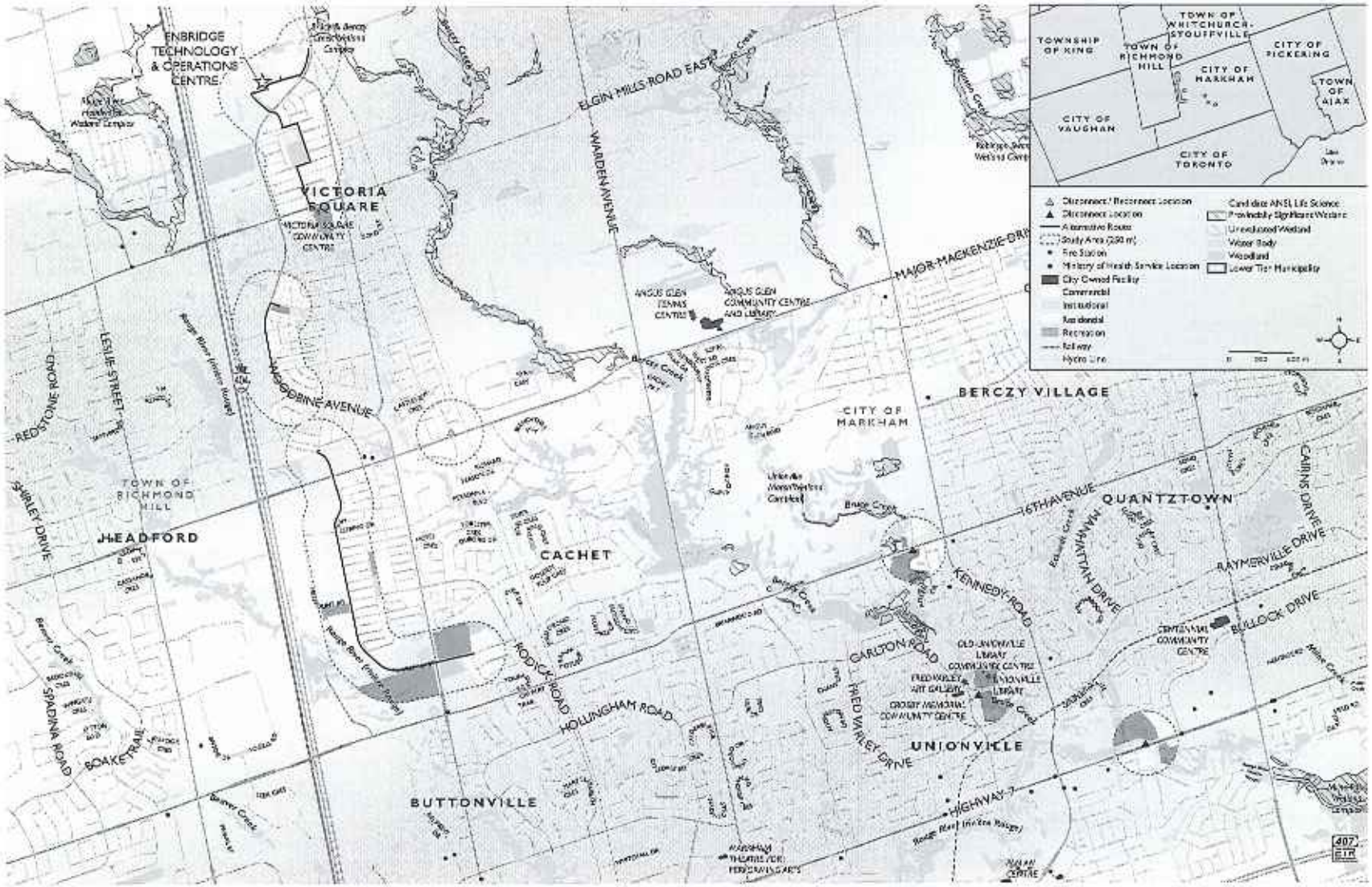
Disconnect Locations

In order to isolate the hydrogen blended system from the rest of the Enbridge network, various disconnects will be required.

Hydrogen Blending Safety

- Safety is Enbridge's top priority and one of its core values.
- We have applied rigorous safety standards to planning, design, development and construction.
- As we do with natural gas, using proper safety procedures and handling is just as important with hydrogen gas.
- This is not a new technology. Several facilities successfully operate in Europe, some for over a decade.
- We require approval from our regulators, the Ontario Energy Board and the Technical Standards and Safety Authority, before we can move ahead with this project.
- The smell of blended gas will maintain the distinct "rotten egg" smell like natural gas.


ENBRIDGE TECHNOLOGY & OPERATIONS CENTRE
VICTORIA SQUARE
VICTORIA SQUARE COMMUNITY CENTRE
ELGIN MILLS ROAD EAST
WARDEN AVENUE
MAJOR MACKENZIE DR
ANGUS GLEN TENNIS CENTRE
ANGUS GLEN COMMUNITY CENTRE AND LIBRARY
WOODBINE AVENUE
LESLIE STREET
REDSTONE ROAD
FAIRLEY DRIVE
TOWN OF RICHMOND HILL
HEADFORD
CACHET
CITY OF MARKHAM
BERCZY VILLAGE
QUANTZTOWN
16TH AVENUE
CAIRNS DRIVE
RAYMERVILLE DRIVE
BULLOCK DRIVE
KENNEDY ROAD
HARTHAN DRIVE
CENTENNIAL COMMUNITY CENTRE
CARLTON ROAD
OLD UNIONVILLE LIBRARY
FRED VARLEY ART GALLERY
GROSSI MEMORIAL COMMUNITY CENTRE
UNIONVILLE
FRED VARLEY DRIVE
HOOD ROAD
HOLLINGHAM ROAD
SPADINA ROAD
BOAKE TRAIL
BUTTONVILLE
HIGHWAY 7
MARKHAM THEATRE FOR PERFORMING ARTS
407 ETR
TOWNSHIP OF KING
TOWN OF RICHMOND HILL
TOWN OF WHITCHURCH-STOUFFVILLE
CITY OF PICKERING
CITY OF MARKHAM
TOWN OF AJAX
CITY OF VAUGHAN
CITY OF TORONTO
Disconnect / Reconnect Location
Disconnect Location
Preliminary Preferred Route
Study Area (250 m)
Fire Station
MOH Service Location
City Owned Facility
Commercial
Institutional
Residential
Recreation
Railway
Hydro Line
ANSI Life Science
Candidate ANSI Life Science
Provincially Significant Wetland
Unevaluated Wetland
Water Body
Woodland
Lower Tier Municipality


ENBRIDGE TECHNOLOGY & OPERATIONS CENTRE
VICTORIA SQUARE
ELGIN MILLS ROAD EAST
WARDEN AVENUE
MAJOR MACKENZIE DRIVE
ANGUS GLEN TENNIS CENTRE
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HEADFORD
CACHET
QUANTZTOWN
16TH AVENUE
KENNEDY ROAD
MANHATTAN DRIVE
RAYMERVILLE DRIVE
BULLOCK DRIVE
CAIRNS DRIVE
GARLTON ROAD
FRED VARLEY DRIVE
UNIONVILLE
HOLLINGHAM ROAD
RODICK ROAD
BUTTONVILLE
HIGHWAY 7
SPADINA ROAD
BOAKE TRAIL
SHIRLEY DRIVE
REDSTONE ROAD
LESLIE STREET
WOODBINE AVENUE
TOWNSHIP OF KING
TOWN OF WHITCHURCH-STOUFFVILLE
TOWN OF RICHMOND HILL
CITY OF PICKERING
CITY OF MARKHAM
TOWN OF AJAX
CITY OF VAUGHAN
CITY OF TORONTO
Disconnect / Reconnect Location
Disconnect Location
Alternative Route
Study Area (250 m)
Fire Station
Ministry of Health Service Location
City Owned Facility
Commercial
Institutional
Residential
Recreation
Railway
Hydro Line
Candidate ANSI Life Science
Provincially Significant Wetland
Unevaluated Wetland
Water Body
Woodland
Lower Tier Municipality

Pipeline Design and Safety

Pipeline Design

Our pipelines are designed to meet and/or exceed the regulations of the Canadian Standards Association (Z662 Oil and Gas Pipeline Systems) and the applicable regulations of the Technical Standards & Safety Association (TSSA).

Pipeline Safety and Integrity

We take many steps to ensure the safe, reliable operation of our network of natural gas pipelines, such as:

- Design, construct, and test our pipelines to meet or exceed requirements set by industry standards and regulatory authorities;
- Continuously monitor the entire network; and
- Perform regular field surveys to detect leaks and confirm corrosion prevention methods are working as intended.

Construction and Enbridge

Our construction work is temporary and transitory – once the pipe is laid, we restore the area to as close to pre-construction condition as possible.

We are committed to being respectful of community activities, regulations, and bylaws.

We have completed many similar pipeline construction projects.

We take great care when working in the community to minimize impacts, address concerns and achieve the highest standards of safety.

Pipeline construction projects strive to leave the smallest footprint possible.

1



2



3



4



Permits and Approvals

Enbridge must obtain approval from the Ontario Energy Board to move forward with construction. In addition, other permits and approvals that may be required are:

Agency	Permit/Approval
Toronto Region Conservation Authority	Permit to work within a Conservation Authority Regulated Area
Ministry of Natural Resources and Forestry and/or the Ministry of Environment, Conservation and Parks	Endangered Species Act (2007) Permit
Fisheries and Oceans Canada	Species at Risk Act (2002) Permit
Ministry of Tourism, Culture and Sport	Comment/Acceptance letter for archaeological and cultural heritage assessments
Municipal Permits	• Noise By-Law Exemption • Road Occupancy Permit • Permit to Injure or Destroy Trees

Environmental Assessment Process and Project Schedule

	Task	Proposed Timing
CONSULTATION THROUGHOUT	Routing study: identify study areas and assess alternative routes	January 2019
	Select Preliminary Preferred Route	January 2019
	Baseline data collection	January 2019
	Notice of Commencement and Public Open House	February 2019
	We are here → **Public Open Houses**	March 2019
	Confirm preferred route	March 2019
	Conduct effects and mitigation assessment on preferred route	March 2019
	Assessment of residual effects and cumulative effects assessment	March 2019
	Documentation: Environmental Report	April 2019
	Ontario Energy Board Submission	Summer 2019
	Phase 1 Construction (Tentative)* *pending OEB approval	April 2020 – September 2020
	Phase 2 Construction(Tentative)* *pending OEB approval	September 2020 – March 2021
	Post-construction monitoring	2020-2021

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

1 message

[redacted].com> Wed, Jul 3, 2019 at 6:00 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]
Sent: Wednesday, July 03, 2019 6:00 PM
To: Maxime Picard
Subject: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

Hi [redacted]

How are you? I hope you are doing well. I just wanted to provide you with an update regarding the proposed Power to Gas Project. We discussed this project awhile back. It's the one where we are planning to inject up to 2% of hydrogen into our natural gas system to help offset the energy we use with green energy.

I wanted to share with you the attached open house invitation, in both English and Mandarin, that was distributed to roughly 33,000 homes and businesses that live in the Project area (City of Markham). We'll also be running the invitation as an ad in the Markham Economist and Sun (July 4), and the Ming Pao (July 6). If you have any questions about the Project, or the Information Session, please don't hesitate to reach out to me.

Talk soon!

[redacted]

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

July 2019 OpenHouse_v04.pdf
555K

You're Invited to an Information Session

Please join us for another information session about the proposed Low-Carbon Energy Project in Markham. Learn about hydrogen blending, why Enbridge Gas supports this technology, why it's good for our customers, and good for the environment.

Enbridge Gas is proposing a project to blend a small amount of hydrogen gas into our existing natural gas network, to reduce greenhouse gas emissions. Enbridge Gas operates a facility which converts electrical energy to hydrogen gas, which would be injected into the existing natural gas network if the project is approved.

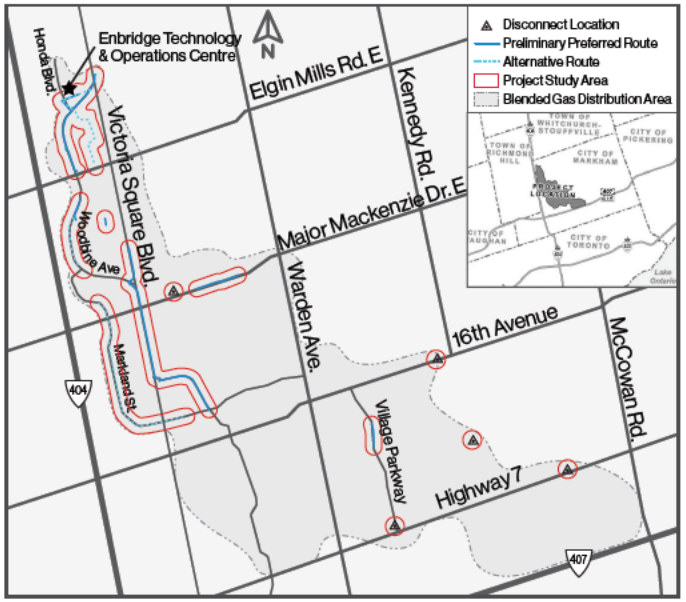
The blended gas would be distributed within the shaded area outlined on the map. As part of the project, Enbridge Gas would be installing approximately 1.3 km of pipe in phase one and approximately 5.5 km of pipe in phase two.

Hydrogen Blending Information Session

Date: Tuesday, July 9, 2019
Time: Drop in from 5-7 p.m.
Location: Enbridge Technology and Operations Centre
101 Honda Blvd, Markham, Ontario

For more information about the proposed project and hydrogen blending, please visit: **http://enbridgegas.com/LowCarbonEnergyProject**.

If you have any questions, please submit them to **LowCarbonEnergyEA@dillon.ca**.



Please visit us online:

enbridgegas.com **@enbridgegas**

If you have a natural gas emergency, please call: **1-866-763-5427**



Join us and enter to win an Ecobee
(Valued at $300)

ENBRIDGE
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邀请您参加宣讲会

关于提案的万锦市低碳能源项目，我们将再次举办宣讲会，敬请参加。 了解氢气混合技术、为什么 Enbridge Gas 支持这种技术、为什么它对我们的顾客有好处、以及为什么它对环境有好处。

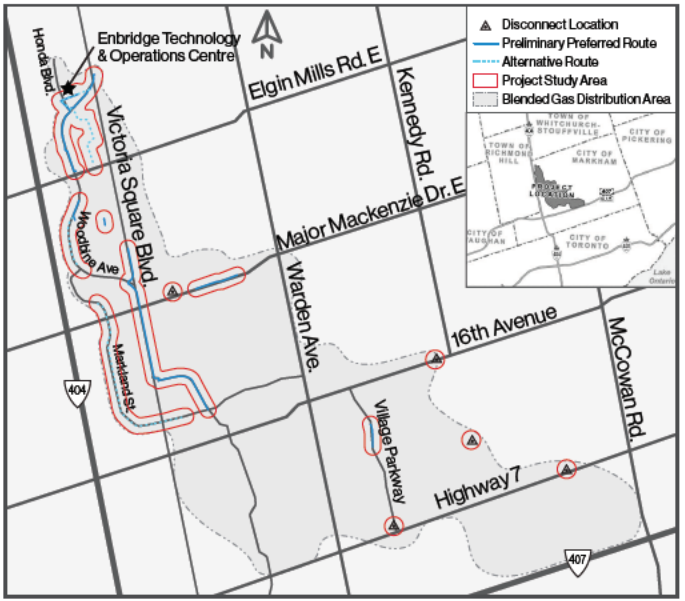
Enbridge Gas 提案了一个项目，将少量氢气混入我们的现有天然气管网，以减少温室气体排放。如果该项目得到批准，Enbridge Gas 有设施将电力转换为氢气，再将氢气注入现有天然气管网。

混合气体将在地图上所示区域内输配。作为该项目的一部分，Enbridge Gas 将在项目一期铺设约1.3公里的管道，项目二期铺设约5.5公里的管道。

氢气混合宣讲会

日期： 2019 年7月9日星期二
时间： 下午5点至7点间欢迎光临
地点： Enbridge Technology and Operations Centre
101 Honda Blvd, Markham, Ontario

请浏览 **http://enbridgegas.com/LowCarbonEnergyProject**，了解提案项目和氢气混合的更多信息。如果您有任何疑问，请将您的疑问提交至 **LowCarbonEnergyEA@dillon.ca**。



请访问我们的社交媒体：

enbridgegas.com **@enbridgegas**

如果您有天然气紧急情况，请致电 **1-866-763-5427**



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DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

1 message

[redacted]enbridge.com> Thu, Jul 4, 2019 at 9:57 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]cnhw.qc.ca]
Sent: Thursday, July 04, 2019 9:40 AM
To: [redacted]
Subject: [External] RE: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

EXTERNAL: PLEASE PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe.

Thanks for following-up quickly S[redacted]

Have some beautiful vacation !

De : [redacted]@enbridge.com]
Envoyé : 4 juillet 2019 09:37
À : Maxime Picard
Objet : RE: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

Hi [redacted]

The sun is shining and I'm going on vacation later this month. Yes, life is good!

We don't have any firm dates as of now for the Stage 2 archaeology but I inquired yesterday with the environment team and they are aiming for late summer to start the stage 2 field work. As always, I will give you advance notice to make arrangements to have one HWN monitor participate in the work.

If there is anything else you need please don't hesitate to reach out.

Best regards,

[redacted]

From: [redacted]@cnhw.qc.ca]
Sent: Thursday, July 04, 2019 8:13 AM
To: [redacted]] RE: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

EXTERNAL: PLEASE PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe.

Good morning [redacted]

I am doing well, thanks.

Really hope it is the same for you.

Thanks for the update about the City of Markham Project.

Could you please refresh my mind on the archaeology of this project ?

Best regards,

[redacted]

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Power to Gas Stage 2 Surveys

1 message

[redacted]@enbridge.com> Fri, Sep 20, 2019 at 10:39 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

-----Original Message-----
From: [redacted]@cnhw.qc.ca]
Sent: Monday, August 26, 2019 11:11 AM
To: [redacted]
[redacted] RE: Power to Gas Stage 2 Surveys

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Hi [redacted]

Hope all is well with you too.
Thanks for the update on Power to Gas Project.

We will definitely participate in the Stage 2 fieldwork with Enbridge.

Please let us know the details and schedule when you can.

Regards,

[redacted]

-----Message d'origine-----
De : [redacted]@enbridge.com]
Envoyé : 15 août 2019 05:57
À : [redacted]
Objet : Power to Gas Stage 2 Surveys

>>> Hi [redacted]
>>>
>>> I hope you are doing well and enjoying the last bit of summer
remaining. As a follow up to the Enbridge Power to Gas Project, I would like to provide you with some advance notice regarding the Stage 2 Archaeological assessment field work. Enbridge is planning to begin the field work sometime in the first half of September pending weather and successfully securing locates.
>>>
>>> I will be in touch a week prior to commencing the field work to
confirm the details but in the meantime, can you please let me know if you are planning to send a HWN monitor ?
>>>
>>> I look forward to hearing back from you at your earliest convenience.
>>>
>>> Regards,
>>
>>> [redacted]
>>> Sr. Advisor, Municipal & Indigenous Affairs Enbridge Gas Inc

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Power to Gas Stage 2 Surveys

1 message

[redacted]@enbridge.com> Mon, Sep 23, 2019 at 9:14 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

-----Original Message-----
From: [redacted]@cnhw.qc.ca]
Sent: Monday, September 23, 2019 8:43 AM
To: [redacted]
Subject: [External] RE: Power to Gas Stage 2 Surveys

EXTERNAL: PLEASE PROCEED WITH CAUTION.
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Good mor ning [redacted]

Thanks for the update.

No worries, we will wait to hear from you.

Have a great day,

[redacted]

-----Message d'origine-----
De : [redacted]@enbridge.com]
Envoyé : 20 septembre 2019 18:10
À : [redacted]
Objet : RE: Power to Gas Stage 2 Surveys

Hi [redacted]

I wanted to provide you with a recent change regarding the project scope specific to the Power to Gas Project. The Stage 2 archaeological assessment required for the Power to Gas is specific to phase 2 of the project that (as of recently) is now being deferred to next year. Based on the results of the Stage 1 AA that was already completed for both phases (one and two) of the project, a Stage 2 AA was not recommended for Phase 1 of the project but was recommended for Phase 2. Once we have project timelines established for phase 2 of the project, which will involve stage 2 AA work, I will be in touch with you again.

[redacted]

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Power to Gas Stage 2 Surveys

1 message

[redacted]@enbridge.com> Thu, Oct 3, 2019 at 1:29 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region
Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road
North York, ON M2J 1P8

enbridge.com
Integrity. Safety. Respect.

-----Original Message-----
From: [redacted]@enbridge.com>
Sent: Thursday, October 3, 2019 1:29 PM
To: [redacted]@cnhw.qc.ca>
Subject: RE: Power to Gas Stage 2 Surveys

Will do, [redacted]

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road
North York, ON M2J 1P8

enbridge.com
Integrity. Safety. Respect.

-----Original Message-----
From: [redacted]@cnhw.qc.ca>
Sent: Thursday, October 3, 2019 1:23 PM
To: [redacted]@enbridge.com>
Subject: [External] RE: Power to Gas Stage 2 Surveys

EXTERNAL: PLEASE PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe.

Good afternoon [redacted]

Thanks for the news.

We will be ready to go on field with you when you are.
Please confirm the dates when you can.

Regards,

[redacted]

-----Message d'origine-----
De : [redacted]@enbridge.com]
Envoyé : 3 octobre 2019 13:18
À : [redacted]
Objet : Power to Gas Stage 2 Surveys

Hi [redacted]

I hope you are well! I wanted to provide you with some advance notice regarding the Power to Gas Project that's been brought to my attention by the project team. The project team has informed me that that Stage 2 archaeological assessment required for the Power to Gas Project is specific to phase 2 of the project that (as of recently) is now being deferred to next year. Based on the results of the Stage 1 AA that was already completed for both phases (one and two) of the project, a Stage 2 AA was not recommended for Phase 1 of the project but was recommended for Phase 2. Once we have project timelines established for phase 2 of the project, which will involve stage 2 AA work, I will be in touch with you again so we can ensure we have a representative from Huron Wendat First Nation participate in the Stage 2 assessment.

I have also attached a copy of the Environmental Report for the Enbridge Low-Carbon Energy Project (also knows as the Power to Gas Project) - not sure why the project name changed??. As always, please don't hesitate to reach out with any questions you may have.

https://www.enbridgegas.com/-/media/Extranet-Pages/Projects-tab-links/Low-Carbon-Energy-Project/EGI_LCEP_Redacted_Secured_13-May-2019.ashx?la=en&hash=DBBBCDF7CF53E778FD5627D1858AA00610ED7DD1

Many thanks,
[redacted]

[redacted] [redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road
North York, ON M2J 1P8

enbridge.com
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DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

RE: LCEP Notice of Project Change and Environmental Report Amendment

[redacted] <[redacted]@cnhw.qc.ca> Fri, Feb 28, 2020 at 9:31 AM
To: [redacted] <[redacted]@enbridge.com>
Cc: LowCarbonEnergyEA@dillon.ca

Good morning [redacted]

Thanks for your email and update on Enbridge's Low-Carbon Energy Project.

Could you please let us know the latest details on the Stage 2 archaeological work timing ?

Also, could you please provide us with the Stage 1 AA report ?

Thanks and best regards,

[redacted]

[redacted]
NATION HURONNE-WENDAT
Bureau du Nionwentsïo
[redacted]
Coordonnateur de projets - Ontario
255, Place Chef Michel-Laveau
Wendake (Qc) G0A 4V0
Téléphone : 418-843-3767 # 2105
[redacted]

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Think to the environment

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De : [redacted] [mailto:[redacted]@enbridge.com]
Envoyé : 27 février 2020 16:11
À : [redacted]
Cc : LowCarbonEnergyEA@dillon.ca
Objet : LCEP Notice of Project Change and Environmental Report Amendment

Good Afternoon [redacted]

Please find the Notice of Project Change and Environmental Report Amendment for Enbridge Gas' proposed *Low-Carbon Energy Project (2019)*, attached.

Change Summary

Enbridge has made changes to the scope of the *Low-Carbon Energy Project* in Markham, Ontario that require additional study and review. Dillon is preparing an Amendment to the Environmental Report (the Amendment) in consideration of Enbridge's proposed changes to the Project. These proposed Project changes include: (1) the selection of the Phase 1 Alternative Route as the Preferred Route; and, (2) the addition of three small facilities on Enbridge-owned property at 101 Honda Boulevard into the Environmental Report scope.

We are seeking your community's feedback or shared knowledge by **Friday, March 27th, 2020.**

Should you have any questions or concerns please feel free to contact me directly. We look forward to engaging with your community to ensure your interests are being considered and represented in this project change process.

Meegwetch/Wela'lin,

[redacted]

[redacted]
Senior Advisor, Community & Indigenous Engagement, Eastern Region

Conseillère principale, engagement communautaire et autochtone, région de l'est

Public Affairs, Communications & Sustainability

Affaires publiques, communications et développement durable

Enbridge Pipelines Inc.
Cell: 613-355-6561

Email: [redacted]@enbridge.com

400 Coventry Rd, Ottawa, ON K1K 2C7

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Enbridge
400 Coventry Rd
Ottawa, ON K1K 2C7
Canada

February 28, 2020

Re: Notice of Project Change and Draft Environmental Report Amendment- Low Carbon Energy Project (LCEP)

Grand Chief Conrad Sioui
la Nation huronne-wendat
255, place Chef-Michel-Laveau
Wendake, QC, G0A 4V0

Dear Grand Chief Conrad Sioui,

I am writing to advise you of a project change and draft Environmental Report Amendment on the proposed 2019 Low Carbon Energy Project (LCEP). Enbridge Gas Inc. (Enbridge) retained Dillon Consulting Limited (Dillon) to undertake an environmental and socio-economic effects assessment and amended report (Environmental Report) for the proposed Low Carbon Energy Project (the Project).

Enbridge filed a Leave-to-Construct (LTC) application with the Ontario Energy Board (OEB) on December 20, 2019. The application included the Environmental Report (completed in May 2019), as well as two Addendums. Addendum #1 was completed in September 2019 and addressed comments from the Toronto and Region Conservation Authority. Addendum #2 was completed in December 2019 and provided updated Project mapping depicting only Phase 1 of the Project, as Phase 2 was removed from the Project scope.

Since the completion of the Environmental Report and the Addendums, Enbridge has made changes to the scope of the Project that require additional study and review. As such, Dillon has prepared an Amendment to the Environmental Report (draft version enclosed), which documents the results of Dillon's review of Enbridge's proposed changes to the Project. These proposed Project changes include: (1) the selection of the Phase 1 Alternative Route as the new Preferred Route; and, (2) the addition of three small facilities on Enbridge owned property into the Environmental Report scope.

La nation huronne-wendat is invited to provide comments in relation to this Project change. Specifically, Enbridge and Dillion are seeking information about any adverse impacts that the proposed project change may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts. Please send any comments to the attention of the undersigned, or by email to LowCarbonEnergyEA@dillon.ca at your earliest convenience. We would appreciate your shared knowledge or comments for consideration regarding this Project change by March 27, 2020.

If you have questions or concerns regarding the proposed Project change, please do not hesitate to contact me at any time. I appreciate your attention to this matter and look forward to our ongoing collaboration on this project.

Sincerely,



Senior Advisor, Community & Indigenous Engagement, Eastern Region
Conseillère principale, engagement communautaire et autochtone, région de l'est
Public Affairs and Communications
400 Coventry Rd, Ottawa, ON K1K 2C7
Cell: 613-355-6561
[redacted]@enbridge.com

Enclosures- Notice of Project Change, Amendment to the Environmental Report

PROPOSED ENBRIDGE LOW-CARBON ENERGY PROJECT

NOTICE OF PROJECT CHANGE

CITY OF MARKHAM, ONTARIO

ENBRIDGE GAS INC.

Last year, Enbridge Gas Inc. (Enbridge) retained Dillon Consulting Limited (Dillon) to undertake a route selection and environmental and socio-economic impact study and report (Environmental Report) for the proposed Low-Carbon Energy Project (the Project). The Environmental Report was completed according to the Ontario Energy Board (OEB) Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016). Following completion of the Environmental Report, Enbridge provided additional information regarding the Project in two Addendums. Addendum #1 was completed in September 2019 and addressed comments from the Toronto and Region Conservation Authority. Addendum #2 was completed in December 2019 and provided updated Project mapping depicting only Phase 1 of the Project, as Phase 2 was removed from the Project scope. Enbridge filed a Leave-to-Construct (LTC) application with the OEB on December 20, 2019.

Since the completion of the Environmental Report and the Addendums, Enbridge has made changes to the scope of the Project that require additional study and review. Dillon is preparing an Amendment to the Environmental Report (the Amendment) in consideration of Enbridge's proposed changes to the Project. These proposed Project changes include: (1) the selection of the Phase 1 Alternative Route as the Preferred Route; and, (2) the addition of three small facilities on Enbridge-owned property at 101 Honda Boulevard into the Environmental Report scope. The objective of the Amendment is to determine if there are any additional potential environmental or socio-economic impacts as a result of the proposed changes that were not captured in the assessment already completed in the Environmental Report.

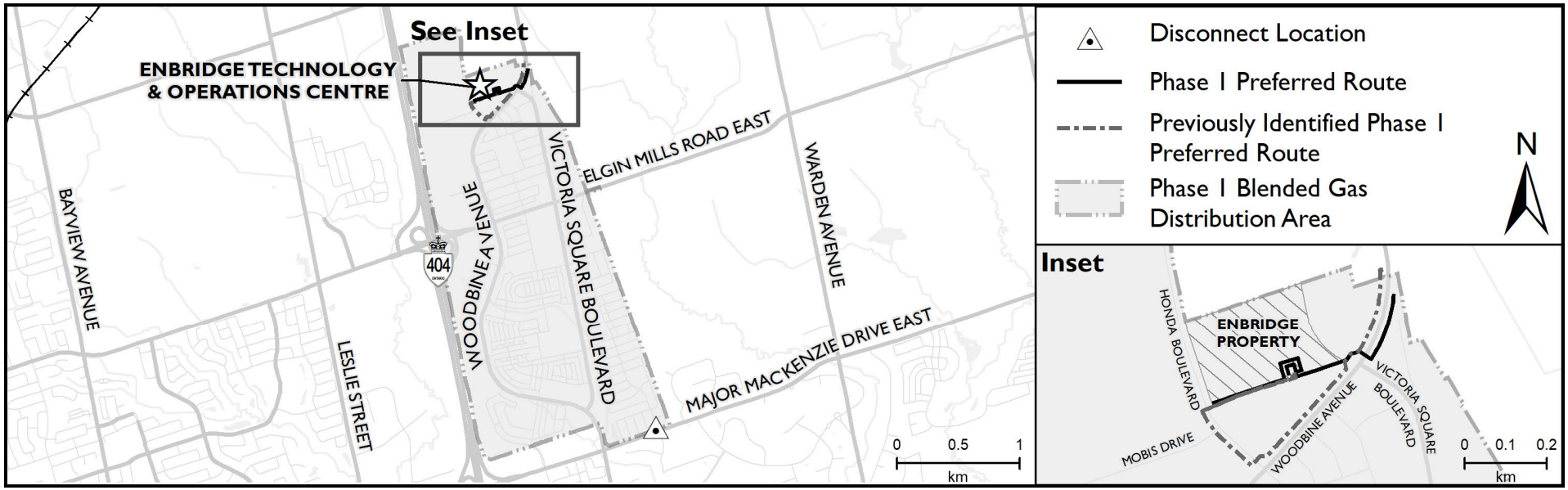
The Amendment to the Environmental Report is planned to be completed by March 31, 2020, after which Enbridge will file the Amendment with the OEB. The OEB's review and approval is required before the Project can proceed. If approved, construction of the Project is currently anticipated to begin by January 2021, at the earliest.

Stakeholder consultation and Indigenous engagement continue to be key components of the Project. We are interested in hearing from you regarding issues/concerns that you may have in relation to the proposed changes to this Project. Please provide feedback to the Project email at LowCarbonEnergyEA@dillon.ca or by contacting one of the individuals listed in this Notice by March 22, 2020.

Tanya Turk
Environmental Advisor
Enbridge Gas Inc.
101 Honda Boulevard
Markham, ON L6C 0M6
(416) 495-3103

Tristan Lefler
Environmental Assessment
Project Manager
Dillon Consulting Limited
51 Breithaupt Street, Suite 200
Kitchener, ON N2H 5G5
(519) 571-9833
LowCarbonEnergyEA@dillon.ca

Project website:
https://www.enbridgegas.com/about-us.
Click on the "Projects" tab and select "Low-Carbon Energy Project"



Enbridge Gas Inc.
Low-Carbon Energy Project
Environmental Report Amendment

Prepared for:

Enbridge Gas Inc.
101 Honda Blvd.
Markham, Ontario
L6C 0M6

Prepared by:

Dillon Consulting Limited
235 Yorkland Blvd., Suite 800
Toronto, Ontario
M2J 4Y8

February 2020



DRAFT

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A Consultation Update – Summary and Logs

DRAFT

LIST OF ACRONYMS AND ABBREVIATIONS

Dillon	Dillon Consulting Limited
ECA	Environmental Compliance Approval
Enbridge	Enbridge Gas Inc.
HP	high pressure
IP	intermediate pressure
km	kilometre(s)
LTC	Leave-to-Construct
m	metre(s)
MECP	Ontario Ministry of the Environment, Conservation and Parks
N/A	not applicable
NPS	nominal pipe size
OEB	Ontario Energy Board
psig	pounds per square inch gauge
the Project	Low-Carbon Energy Project
TOC	Technology and Operations Centre

DRAFT

1.0 INTRODUCTION

Enbridge Gas Inc. (Enbridge) retained Dillon Consulting Limited (Dillon) to undertake a route selection and environmental and socio-economic impact study and report (Environmental Report) for the proposed Low-Carbon Energy Project (the Project).

The Environmental Report (Dillon, 2019a) for the Project was completed in May 2019. Following completion of the Environmental Report, Enbridge provided additional information regarding the Project in two Addendums. Addendum #1 (Dillon, 2019b) was completed in September 2019 and addressed comments from the Toronto and Region Conservation Authority. Addendum #2 (Dillon, 2019c) was completed in December 2019 and provided updated Project mapping depicting only Phase 1 of the Project, as Phase 2 was removed from the Project scope. Enbridge filed a Leave-to-Construct (LTC) application for the Project with the Ontario Energy Board (OEB) on December 20, 2019.

Since the completion of the Environmental Report and the Addendums (Dillon, 2019a; 2019b; 2019c), Enbridge has made changes to the scope of the Project that require additional study and review. This report constitutes an Amendment to the Environmental Report (Amendment #1) and provides the results of Dillon's review of Enbridge's proposed changes to the Project. These proposed Project changes include:

- The selection of the Phase 1 Alternative Route as the Preferred Route; and,
- The addition of three small facilities on Enbridge-owned property into the Environmental Report scope.

The proposed Project changes are illustrated on **Figure 1** and are described in further detail in **Section 3**.

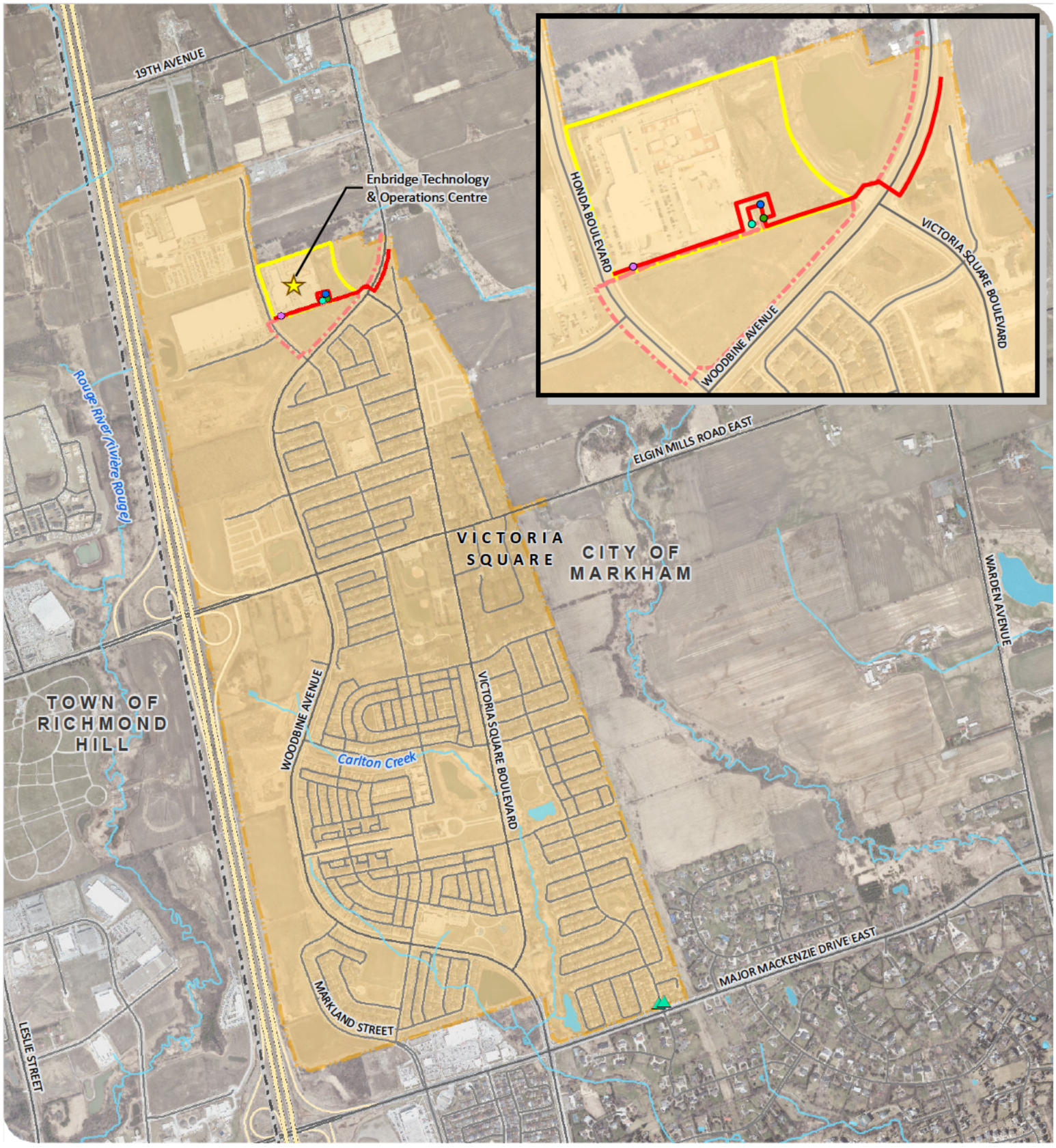
The objective of this Amendment is to determine if there are any additional potential environmental or socio-economic impacts as a result of the proposed changes that were not captured in the assessment already provided in the Environmental Report.

Stakeholder consultation and Indigenous engagement continue to be key components of the study. This draft Amendment is being shared with interested parties to identify any issues and concerns related to the proposed Project changes. Following the provision of this draft Amendment, interested parties are invited to provide comments, questions, or concerns to the Project Team within a 30-day period. This feedback will be documented as a component of the final Amendment that will be filed with the OEB (see **Section 6** for further details).

This Amendment is to be read in conjunction with the Environmental Report and the Addendums (Dillon, 2019a; 2019b; 2019c). Information from the Environmental Report and the Addendums is not repeated in this Amendment, except where required to provide context.

The Environmental Report and the Addendums are available for review by interested stakeholders on the Enbridge Project website at <https://www.enbridgegas.com/about-us>. Click on the "**Projects**" tab and select "**Low-Carbon Energy Project**".

DRAFT



ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

PROPOSED PIPELINE ROUTES

FIGURE 1

- Phase 1 Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Phase 1 Blended Gas Distribution Area
- Enbridge Property
- Watercourse
- Waterbody
- Municipal Boundary

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION
MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:20,000

0 0.125 0.25 0.5 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12

2.0 PROJECT BACKGROUND

The Project was initially proposed as a two-phase installation of approximately 6.7 kilometres (km) of natural gas pipeline in the City of Markham. Addendum #2 to the Environmental Report resulted in the removal of Phase 2 from the Project scope. As such, the Project scope was reduced to Phase 1 only, which would involve the installation of approximately 1.3 km of nominal pipe size (NPS) 6-inch and NPS 8-inch pipe, primarily along Woodbine Avenue and Honda Boulevard, ending at Enbridge's Technology and Operations Centre (see **Figure 1**).

The objective of the Project is to blend a small amount of hydrogen gas (up to 2% by volume) into a small, carefully selected portion of Enbridge's existing natural gas network in order to reduce greenhouse gas emissions. An affiliate of Enbridge Gas Inc. operates a Power-to-Gas facility at the Technology and Operations Centre, which uses surplus electricity to 'split' water molecules into hydrogen and oxygen using electrolyzer technology. The hydrogen gas would be injected into the existing natural gas network and blended gas would be distributed to the Victoria Square neighbourhood, as illustrated on **Figure 1**.

The Environmental Report (Dillon, 2019a) was completed by Dillon in May 2019 and conforms to the OEB *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition* (2016).

The Environmental Report involved undertaking an inventory of physical, natural and socio-economic features within identified Study Areas (see Section 3, Physical, Natural and Socio-Economic Environment Setting in the Environmental Report). Potential alternative routes were identified and then evaluated against one another to select Preferred Routes for each Project Phase. The route selection evaluation process is detailed in Section 5 of the Environmental Report. Public involvement played an important role in this process.

In accordance with the OEB Guidelines, Enbridge carried out a comprehensive stakeholder consultation program to consult and communicate with federal, provincial, and municipal government agencies, Indigenous communities, directly and indirectly affected landowners, residents, and interested members of the public. The stakeholder consultation program methods and results are detailed in Section 4 of the Environmental Report.

Potential environmental and socio-economic impacts and associated mitigation measures are detailed in Section 6 of the Environmental Report. Mitigation measures were recommended to avoid or reduce potential negative impacts to environmental and socio-economic features. Based on the original Project scope and the adoption of mitigation measures recommended in the Environmental Report, Dillon did not predict any long-term impacts from the construction and operation of the Project.

Following the completion of the Environmental Report in May 2019, Enbridge has revised the scope of the Project as detailed in **Section 3**.

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3.0 PROPOSED PROJECT CHANGES

Enbridge is no longer proposing to construct the Phase 1 Preferred Route identified in the Environmental Report. A slight variation of the Phase 1 Alternative Route has now been identified as the Preferred Route (see **Figure 1**).

3.1 RATIONALE

The following provides the rationale for the proposed Project changes. Enbridge has identified these proposed changes as a result of the ongoing detailed engineering design process, the acquisition of new land adjacent to Enbridge's existing Technology and Operations Centre (TOC) property at 101 Honda Boulevard, and stakeholder consultation.

Proceeding with the Phase 1 Preferred Route as described in the Environmental Report would have resulted in added congestion within the TOC Operations Compound, with added safety concerns. The Operations Compound currently has live traffic from operational vehicles, and it houses the Power-to-Gas facilities, the refuelling facilities for compressed natural gas vehicles, and an inventory of materials to support raw material for operations, which are accessed multiple times per day. As part of the long-term plan for the TOC, Enbridge recently acquired new land adjacent to the TOC property, which will now better accommodate the hydrogen-blending facilities required for the Project.

At the Project open houses held in 2019, concerns were raised regarding disruptions to the community due to construction along Woodbine Avenue, including traffic congestion, noise, dust, and accessibility. The new Preferred Route addresses construction concerns, as it results in a reduced duration of construction on Woodbine Avenue, thereby reducing effects such as traffic disruptions dust, and noise. In addition, selecting the new Preferred Route would further add efficiencies to the Project as it would reduce the length of the pipe needed by approximately 40%, resulting in a reduced cost for the Project. Hosting the facilities in the new location also enhances safety at the current site as it reduces the impact of construction and has the added benefit of eliminating the need for construction on Honda Boulevard.

3.2 DESCRIPTION OF THE NEW PREFERRED ROUTE

The new Preferred Route would consist of the installation of approximately 755 metres (m) of new pipeline, including approximately 25 m of NPS 8-inch intermediate pressure (IP) plastic pipe, 380 m of NPS 6-inch extra high pressure (HP) steel pipe, and 350 m of NPS 6-inch HP steel pipe.

The new Preferred Route would begin at a tie-in point along an existing Enbridge pipeline located on the east side of Woodbine Avenue, approximately 300 m northeast of the Enbridge Technology and Operations Centre. It would travel south to the intersection of Woodbine Avenue and Victoria Square Boulevard where it would then turn west and cross under Woodbine Avenue and continue along the southern edge of the Enbridge property at 101 Honda Boulevard. The pipeline would be connected to the proposed hydrogen-blending facilities on the Enbridge property and would continue west to Honda Boulevard where it would tie into another existing Enbridge pipeline (see **Figure 1**).

3.3 DESCRIPTION OF PROPOSED HYDROGEN-BLENDING FACILITIES

The facilities described here are a component of the current LTC application to the OEB that was submitted in December 2020, however, they were not within the scope of the Environmental Report at that time. Their new proposed location has resulted in them being added to the scope of the Environmental Report, and thus they are being assessed in this Amendment.

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The proposed Hydrogen Station and Hydrogen Blending Station, as well as a Remote Terminal Unit (RTU) building, will be located on a concrete pad within a fenced and gravelled compound on Enbridge's existing property at 101 Honda Boulevard. The purpose of this facility is to regulate the pressures of the natural gas and hydrogen prior to mixing and controlling the amount of hydrogen that is injected based on the measured flow of natural gas. The fenced compound will measure approximately 13 m × 25 m and the maximum height of the buildings will be 3.5 m.

The proposed District Station will also be located on Enbridge's existing property at 101 Honda Boulevard and will be nested inside an aluminum box measuring approximately 2 m × 2 m × 2 m. The purpose of the District Station is to reduce the gas pressure from the HP (175 psig) steel pipeline to the IP (55 psig) plastic pipeline for distribution.

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4.0 STUDY PROCESS AND PROJECT SETTING

Section 2 of the Environmental Report describes the study methods used in the Environmental Report, as well as the objectives and methods of stakeholder and Indigenous consultation. The same methods are applied in this Amendment.

Section 3 of the Environmental Report describes the environmental and socio-economic setting of the Project. There is no change to the setting information as a result of the proposed Project changes described in this Amendment, as the location of the Project remains the same (see **Figure 2** and **Figure 3** for mapped natural environment and socio-economic features, respectively). The footprint of the new Preferred Route and proposed hydrogen-blending facilities was covered by desktop and field studies conducted for the Environmental Report. Similarly, the Study Area identified for the Project (120 m buffer on each side of the proposed route for a total width of 240 m) remains the same as identified in the Environmental Report (see **Figure 4**).

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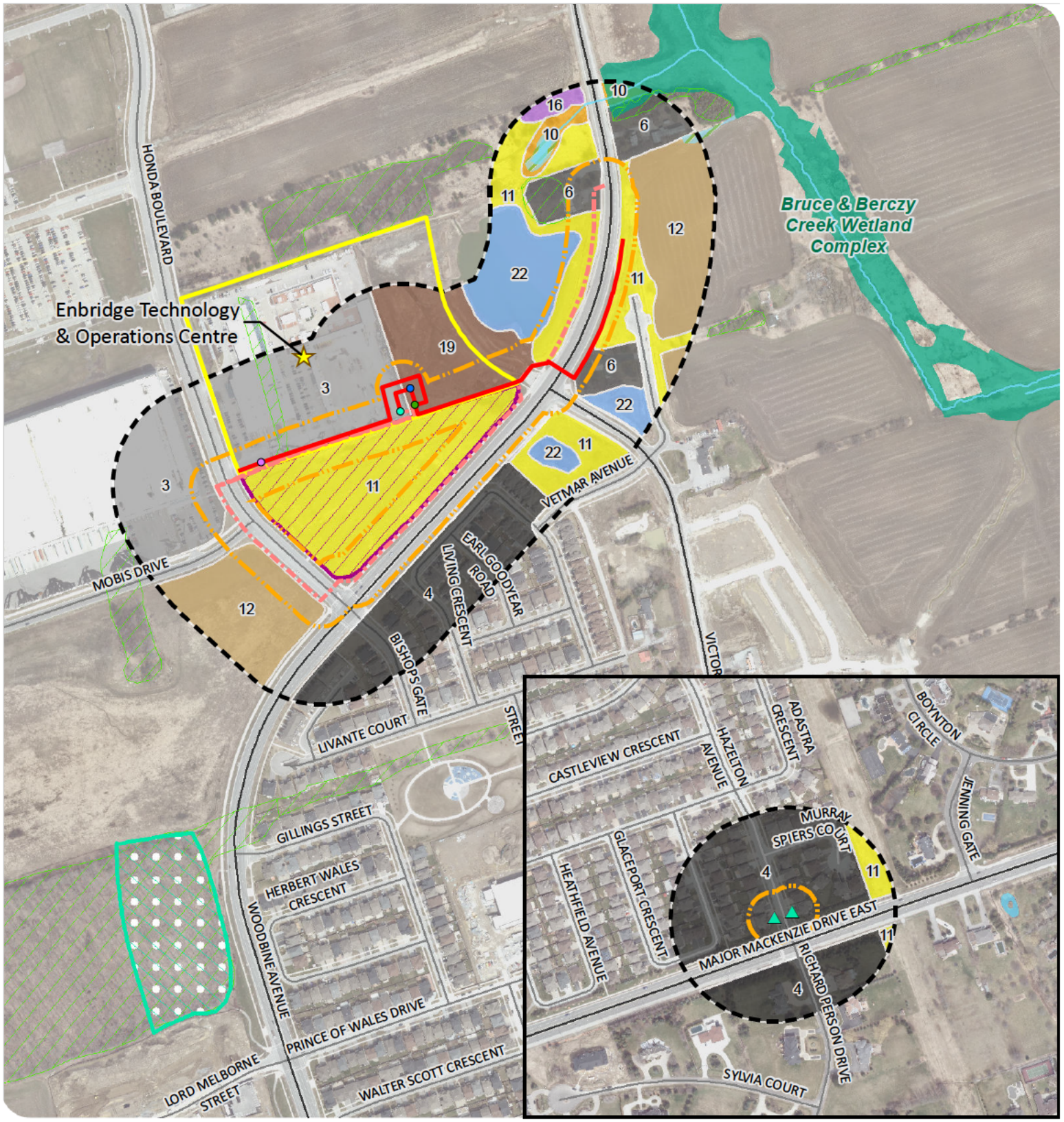


ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

NATURAL ENVIRONMENT FEATURES

FIGURE 2

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Study Area (120 m)
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody
- Unevaluated Wetland
- Provincially Significant Wetland
- Wooded Area (MNRF)
- Candidate Habitat Species of Conservation Concern
- Candidate SAR Bat Habitat and Significant Wildlife for Bat Maternity Colonies
- Potential Grassland Breeding Bird Habitat

Ecological Land Classification

- 3. CVC: Commercial and Institutional
- 4. CVR_1: Low Density Residential
- 6. CVR_4: Rural Property
- 10. MAM: Meadow Marsh
- 11. MEM: Mixed Meadow
- 12. OAGM1: Annual Row Crop
- 16. THD: Deciduous Thicket
- 19. Disturbed Ground
- 22. Stormwater Management Facility

DILLON CONSULTING

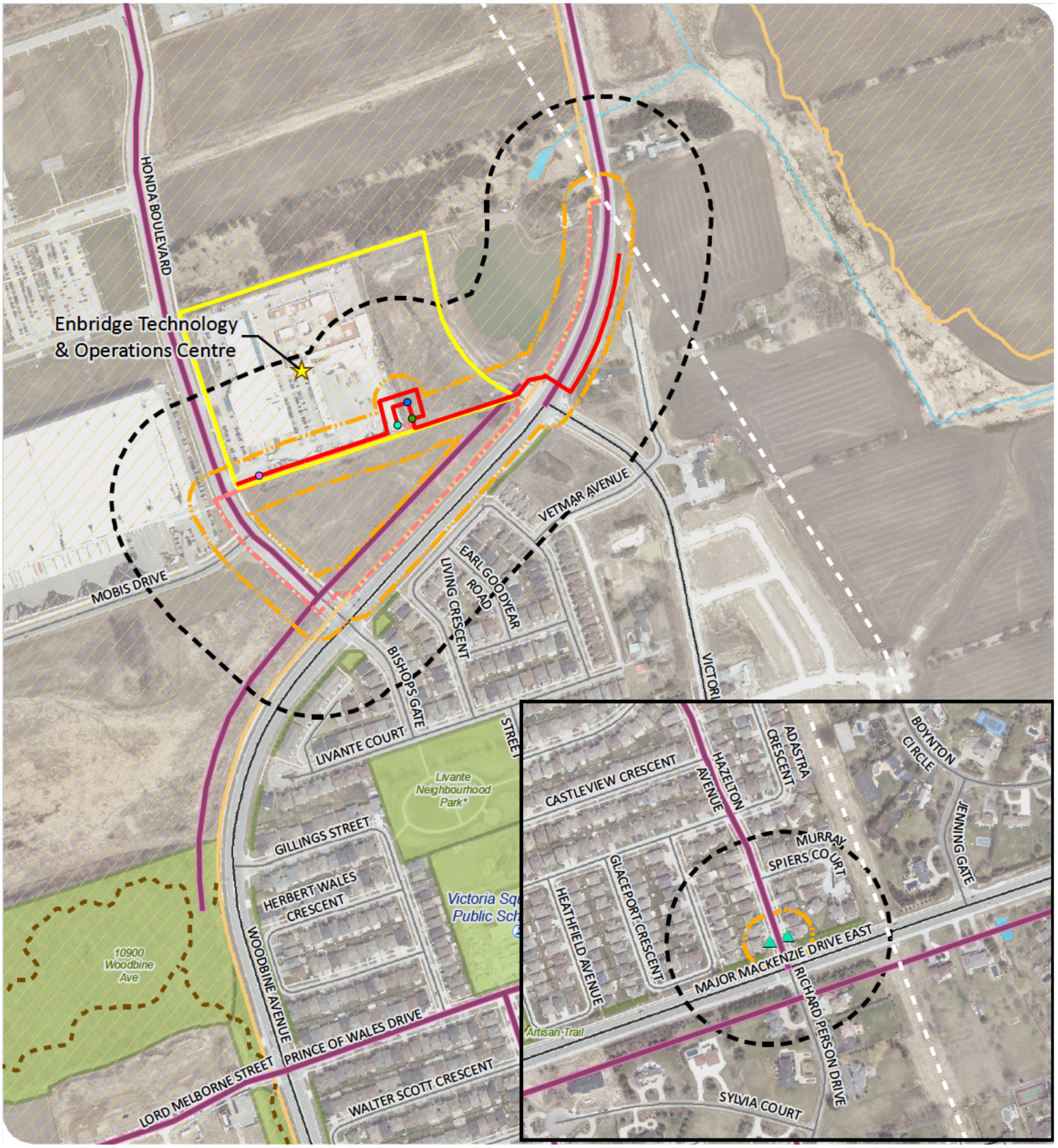
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N
FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:6,000

0 0.04 0.08 0.16 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12



ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

SOCIO-ECONOMIC FEATURES

FIGURE 3

ENBRIDGE

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Study Area (120 m)
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody
- Educational Facility
- Hydro Line
- Trail
- Bicycle Route
- Business Park
- Park

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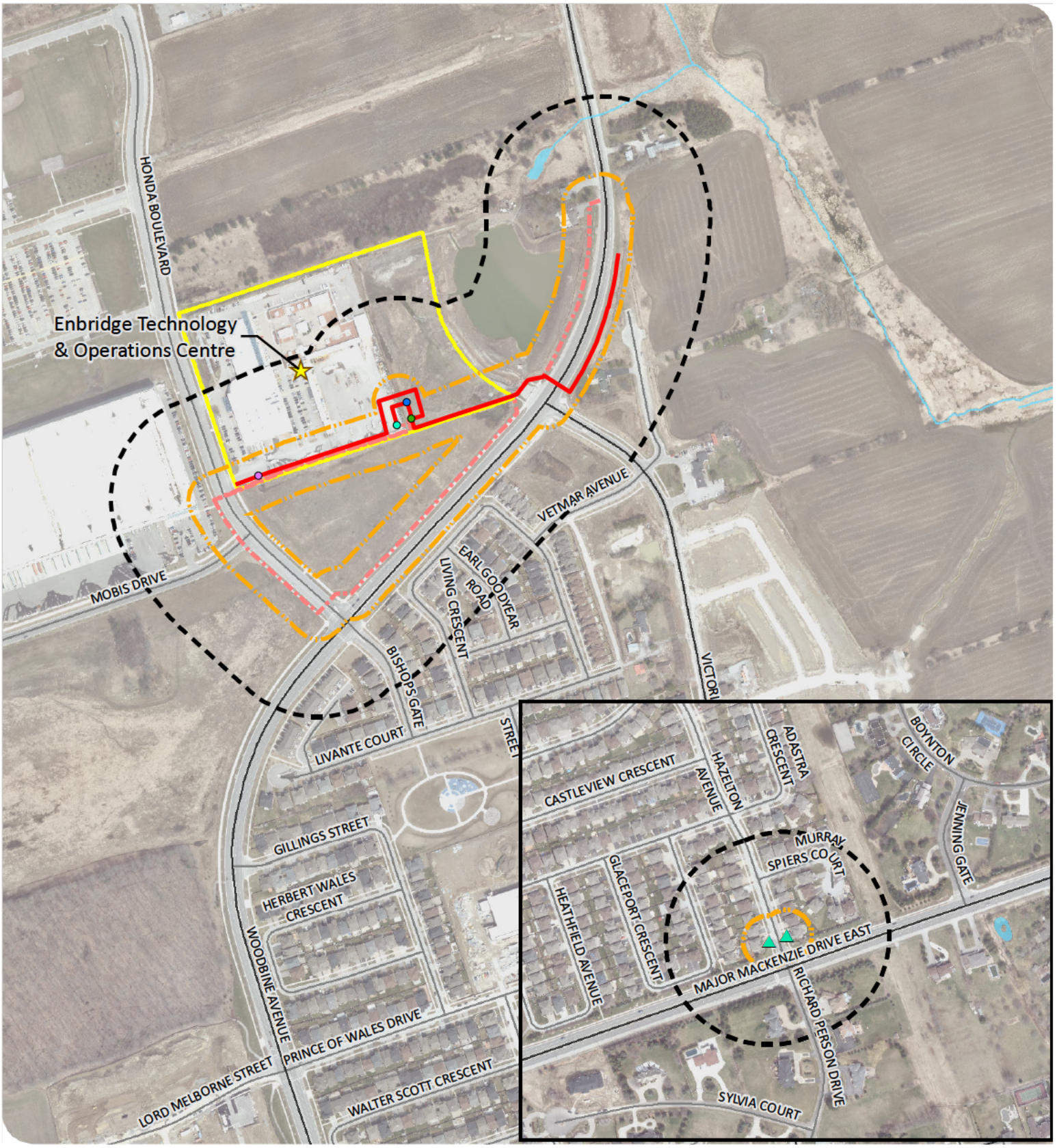
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N
FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:6,000

0 0.04 0.08 0.16 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12



ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

STUDY AREAS
FIGURE 4

ENBRIDGE

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Study Area (120 m)
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody

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FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:6,000

0 0.04 0.08 0.16 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12

5.0 POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

Section 6 of the Environmental Report includes a detailed mitigation strategy based on potential impacts of the Project. This Amendment assesses the potential for previously unassessed/new impacts as a result of the proposed Project changes, and, where necessary, recommends additional mitigation measures. Select mitigation measures are illustrated on **Figure 5**.

This Amendment also considers potential changes in cumulative effects. Proposed developments within 1 km of the Project are listed in Section 7.3 of the Environmental Report, and additional developments identified by the Toronto and Region Conservation Authority are listed in Addendum #1. These proposed developments were reviewed to identify any potential changes to cumulative Project interactions as a result of the proposed Project changes.

5.1 NEW PREFERRED ROUTE

Since the new Preferred Route was previously evaluated as the Phase 1 Alternative Route in the Environmental Report, a new effects assessment is not deemed warranted and, instead, a comparison of constraints between the previously identified Phase 1 Preferred Route and the new Preferred Route is provided in the following subsections.

Considering the criteria used to evaluate the Phase 1 Preferred and Alternative Routes in Section 5 of the Environmental Report, there are few differences between the proposed changes in this Amendment relative to the original Project scope included in the Environmental Report.

BIOPHYSICAL CONSTRAINTS

There are no previously unidentified biophysical constraints associated with the new Preferred Route.

Neither the previously identified Phase 1 Preferred Route, nor the new Preferred Route, cross any waterbodies, watercourses, wetlands/wetland complexes, Special Policy Areas (i.e., Greenbelt), or Areas of Natural or Scientific Interest.

The new Preferred Route is located entirely within municipal road rights-of-way and on previously disturbed land owned by Enbridge.

SOCIO-ECONOMIC CONSTRAINTS

There are no previously unidentified socio-economic constraints associated with the new Preferred Route.

The new Preferred Route will have fewer impacts on the neighbourhood/residences to the south of Woodbine Avenue, as it crosses to the west side of Woodbine Avenue just north of Victoria Square Boulevard, before the commencement of the housing subdivisions. In comparison, the previously identified Phase 1 Preferred Route would have run parallel to Woodbine Avenue from the north tie-in point southwest to Honda Boulevard and would have resulted in a larger footprint adjacent to the residential area.

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TECHNICAL CONSTRAINTS

There are no previously unidentified technical constraints associated with the new Preferred Route.

The new Preferred Route has a shorter overall length (approximately 755 m as opposed to 1.3 km) and has only one road crossing (in comparison to three crossings associated with the previously identified Phase 1 Preferred Route).

SUMMARY

The new Preferred Route does not result in any material change to the biophysical, socio-economic, or technical constraints considered in the Environmental Report. There are minor advantages to the new Preferred Route over the previously identified Phase 1 Preferred Route including lesser impact on nearby residences (south of Woodbine Avenue), shorter overall length, and fewer road crossings.

The assessment of potential Project effects, cumulative effects, and recommended mitigation measures presented in the Environmental Report in regard to the Phase 1 Preferred Route remains unchanged as a result of the new Preferred Route. Consequently, no additional mitigation measures beyond those recommended in the Environmental Report are required.

5.2 PROPOSED HYDROGEN-BLENDING FACILITIES

As noted in **Section 3**, the proposed hydrogen-blending facilities will be located entirely within Enbridge's property at 101 Honda Boulevard on previously disturbed land.

Given the setting of the proposed hydrogen-blending facilities in relation to the previously evaluated Phase 1 Preferred and Alternative Routes, there are no additional constraints (biophysical, socio-economic, or technical) anticipated as a result of the proposed hydrogen-blending facilities, as they are located within the Study Area that was reviewed and assessed in the Environmental Report.

Enbridge will be applying for an Environmental Compliance Approval (ECA) from the Ontario Ministry of the Environment, Conservation and Parks (MECP) that will permit air and noise emissions associated with the proposed hydrogen-blending facilities. As part of the ECA application to MECP, Enbridge will complete all necessary studies to determine the potential impact of the air and noise emissions from the proposed hydrogen-blending facilities.

The following subsections provide an assessment of potential effects and cumulative effects associated with the proposed hydrogen-blending facilities, and recommends additional mitigation measures, where necessary.

POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

Table 1 provides the assessment of potential impacts associated with the proposed hydrogen-blending facilities on the physical, natural, and socio-economic environment, as well as recommended mitigation measures.

The assessment provided in **Table 1** was only conducted for the proposed hydrogen-blending facilities described in this Amendment that were not previously evaluated in the Environmental Report. Effects and mitigation measures considered in the Environmental Report are not repeated below.

The proposed hydrogen-blending facilities do not result in a change to the effects assessment for most of the components; however, new potential interactions have been identified for the Physiography, Topography, and Surficial Geology; Atmospheric Environment; Noise; and Access Modifications and Restrictions components.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
PHYSICAL ENVIRONMENT			
Physiography, Topography, and Surficial Geology	***Construction*** The topography at the proposed facility sites is generally level and no unique physical features are present. The footprint of the proposed hydrogen-blending facilities will be graded, if required, and the facilities will be constructed on concrete pads. The area within the fenced compound will be gravelled. There is potential for a minor, localized change in topography as a result of grading and the installation of permanent components that may alter natural surface drainage patterns. ***Operation*** No effects on physiography, topography, and surficial geology are anticipated during operation of the proposed hydrogen-blending facilities.	• Pre-construction contours and drainage patterns should be re-established around the facilities, to the extent feasible, following construction. • Maintain site drainage during all phases of construction. Ensure construction activities do not cause the ponding of water or unintentional channelization of surface water flow. • Following the completion of construction activities, regrade areas with vehicle ruts or erosion gullies if required.	No significant net effect is anticipated following implementation of the recommended mitigation measures.
Groundwater	***Construction*** The proposed hydrogen-blending facilities will be located above-ground and no interaction with groundwater is anticipated during construction. ***Operation*** No effects on groundwater are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	Not applicable (N/A) – no new potential effects are anticipated.
Bedrock	***Construction*** The proposed hydrogen-blending facilities will be located above-ground and no interaction with bedrock is anticipated during construction. ***Operation*** No effects on bedrock are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Seismicity	***Construction*** No effects of seismic activity are anticipated during construction of the proposed hydrogen-blending facilities. ***Operation*** Impacts to the proposed hydrogen-blending facilities as a result of seismic activity are not anticipated at this time. The facilities will be designed in accordance with low to moderate levels of seismicity and comply with Canadian Geological Survey data and National Building Code minimum standards.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
NATURAL ENVIRONMENT			
Atmospheric Environment	***Construction*** Effects on the atmospheric environment from construction were previously assessed in the Environmental Report and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** There will be venting of natural gas for token relief at the proposed hydrogen-blending facilities during operations. Details on the venting will be provided in Enbridge's ECA permit application to MECP.	• For construction, no additional mitigation measures are recommended beyond the measures provided in the Environmental Report. • During operations, implement requirements/conditions of the ECA permit from MECP.	No significant net effect is anticipated following implementation of the recommended mitigation measures.
Wetlands	***Construction*** There are no wetlands located within 30 m of the proposed hydrogen-blending facilities and no interaction with wetlands is anticipated during construction. ***Operation*** No effects on wetlands are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Surface Water, Fish and Aquatic Habitat	***Construction*** There are no watercourses located within 30 m of the proposed hydrogen-blending facilities and no interaction with surface water, fish, and aquatic habitat is anticipated during construction. ***Operation*** No effects on surface water, fish, and aquatic habitat are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Terrestrial Habitat and Vegetation	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land adjacent to manicured lawns, sidewalks, and major roads (Woodbine Avenue and Honda Boulevard). Vegetation encountered will consist of common roadside vegetation of minor ecological value (vegetation capable of colonizing new roadside edges). Effects on terrestrial habitat and vegetation were previously assessed in the Environmental Report and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects on terrestrial habitat and vegetation are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Wildlife, Significant Wildlife Habitat and Species at Risk	***Construction*** No effects on wildlife, significant wildlife habitat, and species at risk are anticipated during construction of the proposed hydrogen-blending facilities. ***Operation*** No effects on wildlife, significant wildlife habitat, and species at risk are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Agriculture and Soils	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land adjacent to manicured lawns, sidewalks, and major roads (Woodbine Avenue and Honda Boulevard). Topsoil will be removed within the footprint of the facilities to accommodate site preparation and installation of the concrete pad. No interaction with agricultural soils is anticipated during construction. ***Operation*** No effects on agriculture and soils are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
SOCIO-ECONOMIC ENVIRONMENT			
Noise	***Construction*** Construction activities have the potential to disturb residents south of Woodbine Avenue in the Victoria Square neighbourhood. Construction-related noise effects are expected to be minor, temporary, and localized, particularly given the existing acoustic environment which includes regular traffic noise on Woodbine Avenue. ***Operation*** There may be some noise from the facilities during operations, however, this will be permitted through the MECP ECA process.	• For construction, no additional mitigation measures are recommended beyond the measures provided in the Environmental Report. • During operations, implement requirements/conditions of the ECA permit from MECP.	No significant net effect is anticipated following implementation of the recommended mitigation measures.
Access Modifications and Restrictions	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge, however, there is the potential that construction of the District Station may require some workspace that extends into the sidewalk along Honda Boulevard, temporarily disrupting pedestrian traffic. Access restrictions on road traffic are not anticipated. ***Operation*** No effects on access will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are recommended beyond the measures provided in the Environmental Report.	No significant net effect is anticipated following implementation of the recommended mitigation measures.

Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Traffic Disruption	***Construction*** Effects on traffic as a result of construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects on traffic will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Vibration	***Construction*** Effects of vibration during construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects of vibration will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Construction Waste	***Construction*** Effects of construction wastes were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects of construction waste will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Bentonite Slurry	***Construction*** Bentonite slurry is generated during trenchless pipeline construction and, therefore, will not be generated during facility construction. ***Operation*** No effects of bentonite slurry will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Hydrostatic Test Water	***Construction*** Hydrostatic test water is not required for construction of the proposed hydrogen-blending facilities. ***Operation*** No effects of hydrostatic test water will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Aesthetics	***Construction*** Effects on aesthetics as a result of construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** The proposed hydrogen-blending facilities will be permanent and will alter the current aesthetics of the area; however, in the context of the existing setting, including the existing Enbridge and Mobis Parts Canada buildings, and the presence of Woodbine Avenue, a busy thorough-fare immediately adjacent to the property, the change in aesthetics is anticipated to be minor.	• No additional mitigation measures are required.	No significant net effect is anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Existing and Planned Land Use	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge. As such, there will be no effects on existing and planned land use at the proposed facility locations. ***Operation*** No effects on existing and planned land use will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Existing Linear Infrastructure Corridors and Other Infrastructure	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge that is currently vacant. No interaction with existing linear infrastructure corridors and other infrastructure is anticipated. ***Operation*** No effects on existing linear infrastructure corridors and other infrastructure will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Population and Demographics	***Construction*** No effects on population and demographics will occur during construction of the proposed hydrogen-blending facilities. ***Operation*** No effects on population and demographics will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Economic Activities, Employment and Labour Force	***Construction*** Effects on economic activities, employment, and labour force as a result of construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects on economic activities, employment and labour force will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Tourism and Recreation	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge. No interaction with tourism and recreation is anticipated. ***Operation*** No effects on tourism and recreation will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Indigenous Communities	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge. No interaction with Indigenous communities is anticipated. ***Operation*** No effects on Indigenous communities will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Archaeological and Heritage Resources	***Construction*** The Stage 1 Archaeological Assessment conducted for the Project concluded that the Phase 1 Study Area be considered free of archaeological concern and no further assessment was recommended. As such, no interaction with archaeological and heritage resources is anticipated during construction. ***Operation*** No effects on archaeological and heritage resources will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Community Services	***Construction*** No effects on community services will occur during construction of the proposed hydrogen-blending facilities. ***Operation*** No effects on community services will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Contaminated Sites	***Construction*** There is limited potential to encounter contaminated sites during construction. Effects of contaminated sites discovered during construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects of contaminated sites will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Planning Policies	***Construction*** The Project will need to conform to applicable provincial and municipal planning policies. No new interactions have been identified as a result of the proposed hydrogen-blending facilities ***Operation*** No effects on planning policies will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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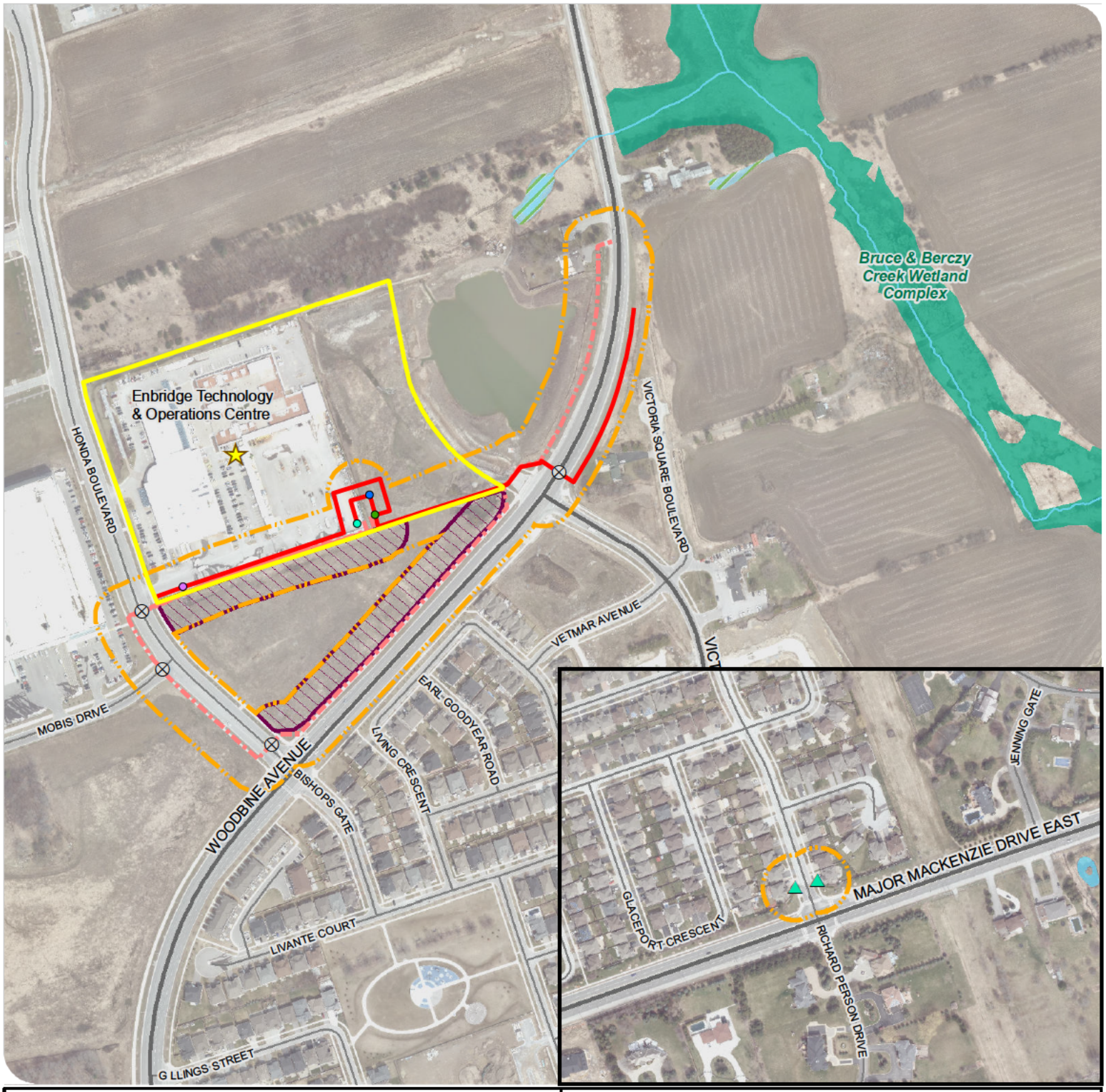

⊗ **Potential Road or Rail Crossing.** For minor road crossings, open-cut or trenchless crossings will be applied. Contact the local region or municipality. Enbridge to develop a Traffic Management Plan to ensure that traffic is maintained while the crossing is conducted. Flag persons will be provided as required. Refer to Section 18.0 of the Enbridge Environmental Construction and Maintenance Manual, 2019.

Candidate Significant Wildlife Habitat. These areas are known to contain Significant Wildlife Habitat. Abide by restricted activity periods and mitigation measures in Table 7.

ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

MITIGATION

FIGURE 5

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody
- Unevaluated Wetland
- Provincially Significant Wetland

*As identified in the TRCA's 2010 Draft Rouge River Watershed Management Plan.

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N
FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:5,000

0 0.0325 0.065 0.13 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12

CUMULATIVE EFFECTS ASSESSMENT

Cumulative effects to the physical and natural environment are anticipated to be negligible given the land for the proposed hydrogen-blending facilities has been previously disturbed and the permanent facility footprints will be minimal in an area of existing high anthropogenic disturbances. Residual air and noise emissions are anticipated to be well within regulatory standards and will be in compliance with the MECP ECA permit.

There is a possibility of cumulative effects on the socio-economic environment related to construction traffic, noise, and dust; however, as described in Section 7 of the Environmental Report, the use of appropriate mitigation techniques and the short timeframe for construction will mitigate any cumulative impacts to a low magnitude. Consequently, no significant cumulative effects are anticipated as a result of the addition of the proposed hydrogen-blending facilities to the scope of the Environmental Report.

SUMMARY

The assessment of potential Project effects, cumulative effects, and recommended mitigation measures presented in the Environmental Report remains largely unchanged as a result of the proposed hydrogen-blending facilities.

The proposed hydrogen-blending facilities will result in a minor, localized alteration of topography, some air and noise emissions during operations, a minor alteration of visual aesthetics, and potential temporary pedestrian access restrictions; however, no significant net effects are anticipated with the implementation of mitigation measures. The mitigation measures recommended in the Environmental Report are considered adequate to address these potential minor effects in conjunction with the implementation of any requirements/conditions of the MECP ECA permit for air and noise emissions.

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6.0 STAKEHOLDER AND INDIGENOUS CONSULTATION UPDATE

This draft Amendment is being circulated to all individuals on the Project contact list developed for the Environmental Report. In addition, a Notice of Project Change is being circulated to all individuals who participated in the consultation process either by attending the Open Houses, sending emails to the Project email inbox, or who otherwise provided their contact details to a Project Team Member with an interest in staying informed of Project updates. The Notice of Project Change will also be circulated to approximately 2,700 residents and businesses located within the Phase 1 Study Area (see **Figure 4**). The Notice of Project Change requests public comment on the proposed changes and provides Project contact information.

A 30-day public comment period will be observed following the release of this draft Amendment. Any comments received as a result of consultation relating to the Amendment will be tracked and responses will be provided, as required. Meetings will be held with applicable agencies, Indigenous communities, and other stakeholders on an as-needed basis to review the proposed changes to the Project. A summary of the consultation results, as well as the consultation logs, will be provided in **Appendix A** of the finalized Amendment to be submitted to the OEB.

The final Amendment will be available for review by interested stakeholders on the Enbridge Project website at <https://www.enbridgegas.com/about-us>, following submission to the OEB (anticipated by March 31, 2020).

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7.0 CONCLUSIONS

This Amendment provides the results of Dillon's review of the proposed changes to the Project scope (as described in **Section 3**) since the completion of the Environmental Report in May 2019, as well as the Addendums in September and December 2019.

The new Preferred Route is similar to the Phase 1 Alternative Route evaluated in the Environmental Report. The setting and assessment of the previously identified Phase 1 Preferred Route can be applied to the new Preferred Route given their proximity to one another. The new Preferred Route results in some advantages over the previously identified Phase 1 Preferred Route, including a shorter overall length, fewer road crossings, and smaller overall construction footprint. The proposed hydrogen-blending facilities will be located entirely on Enbridge-owned property and will be subject to the MECP ECA process.

Based on this review, Dillon has determined that the proposed changes to the Project scope do not result in any material change to the assessment, recommended mitigation measures, or conclusions, as presented in the Environmental Report, and no further assessment is considered necessary.

DRAFT

8.0 REFERENCES

Dillon Consulting Limited (Dillon). 2019a. *Low-Carbon Energy Project Environmental Report*. May 2019. Prepared for Enbridge Gas Inc. Markham, ON. ix + 100 pp. + Appendices. Available at: https://www.enbridgegas.com/about-us.

Dillon Consulting Limited (Dillon). 2019b. *Enbridge Gas Inc. Low-Carbon Energy Project Environment Report Addendum*. September 2019. Prepared for Enbridge Gas Inc. Markham, ON. ii + 5 pp. Available at: https://www.enbridgegas.com/about-us.

Dillon Consulting Limited (Dillon). 2019c. *Enbridge Gas Inc. Low-Carbon Energy Project Environmental Report Addendum #2*. December 2019. Prepared for Enbridge Gas Inc. Markham, ON. i + 8 pp. Available at: https://www.enbridgegas.com/about-us.

Ontario Energy Board (OEB). 2016. *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition*. 70 pp.

DRAFT

APPENDIX A

Consultation Update – Summary and Logs

[Note: To be completed and included in Final Amendment for OEB submission]

DRAFT

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

RE: [WARNING: ATTACHMENT UNSCANNED]RE: LCEP Notice of Project Change and Environmental Report Amendment

[redacted] <[redacted]@cnhw.qc.ca> Mon, Mar 2, 2020 at 8:34 AM
To: [redacted] <[redacted]@enbridge.com>
Cc: LowCarbonEnergyEA@dillon.ca

Thanks [redacted]

Please keep the Huron-Wendat Nation updated in the event that any further archaeological assessment is initiated as part of next project phases.

Regards,

[redacted]



De : [redacted] [mailto:[redacted]@enbridge.com]
Envoyé : 28 février 2020 11:27
À : [redacted]
Cc : LowCarbonEnergyEA@dillon.ca
Objet : [WARNING: ATTACHMENT UNSCANNED]RE: LCEP Notice of Project Change and Environmental Report Amendment

Previous Stage 1 AA – Part 2, attached.

[redacted]

From: [redacted]
Sent: Friday, February 28, 2020 11:25 AM
To: [redacted] <[redacted]@cnhw.qc.ca>
Cc: LowCarbonEnergyEA@dillon.ca
Subject: RE: LCEP Notice of Project Change and Environmental Report Amendment

Good Morning Again [redacted]

Given that this is a change in project linked to route selection and the addition of buildings to Enbridge-owned property, no new archaeological assessments are required. As such, consistent with the Stage 1 AA from 2019 (attached), there was no Stage 2 AA field work required for this project.

Please let me know if you have additional questions or concerns.

Kindest regards,

[redacted]

From: [redacted] <[redacted]@cnhw.qc.ca>
Sent: Friday, February 28, 2020 9:31 AM
To: [redacted] <[redacted]@enbridge.com>
Cc: LowCarbonEnergyEA@dillon.ca
Subject: [External] RE: LCEP Notice of Project Change and Environmental Report Amendment

EXTERNAL: PLEASE PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe.

Good morning [redacted]

Thanks for your email and update on Enbridge's Low-Carbon Energy Project.

Could you please let us know the latest details on the Stage 2 archaeological work timing ?

Also, could you please provide us with the Stage 1 AA report ?

Thanks and best regards,

[redacted]



Avis sur la protection et la confidentialité des informations

L'information contenue dans ce courriel est confidentielle et protégée en vertu des lois et règlements applicables. Son contenu est réservé au(x) destinataire(s) à qui il est adressé. Il est donc interdit de le diffuser ou d'en dévoiler les intentions. Si vous recevez ce message par erreur, veuillez le détruire et nous en faire part dans les plus brefs délais.

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De : [redacted] [mailto:[redacted]@enbridge.com]
Envoye : 27 février 2020 16:11
À : [redacted]
Cc : LowCarbonEnergyEA@dillon.ca
Objet : LCEP Notice of Project Change and Environmental Report Amendment

Good Afternoon [redacted]

Please find the Notice of Project Change and Environmental Report Amendment for Enbridge Gas' proposed *Low-Carbon Energy Project (2019)*, attached.

Change Summary

Enbridge has made changes to the scope of the *Low-Carbon Energy Project* in Markham, Ontario that require additional study and review. Dillon is preparing an Amendment to the Environmental Report (the Amendment) in consideration of Enbridge's proposed changes to the Project. These proposed Project changes include: (1) the selection of the Phase 1 Alternative Route as the Preferred Route; and, (2) the addition of three small facilities on Enbridge-owned property at 101 Honda Boulevard into the Environmental Report scope.

We are seeking your community's feedback or shared knowledge by **Friday, March 27th, 2020.**

Should you have any questions or concerns please feel free to contact me directly. We look forward to engaging with your community to ensure your interests are being considered and represented in this project change process.

Meegwetch/Wela'lin,

[redacted]

[redacted]
Senior Advisor, Community & Indigenous Engagement, Eastern Region

Conseillère principale, engagement communautaire et autochtone, région de l'est

Public Affairs, Communications & Sustainability

Affaires publiques, communications et développement durable

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Cell: 613-355-6561

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400 Coventry Rd, Ottawa, ON K1K 2C7

enbridge.com
Integrity. Safety. Respect.

Stage 1 Archaeological Assessment
Low-Carbon Energy Project
Enbridge Gas Inc.
Various Lots and Concessions
Geographic Township of Markham
Former County of York
City of Markham
Regional Municipality of York, Ontario

Submitted to

Dillon Consulting Limited
235 Yorkland Blvd, Suite 800
Toronto, Ontario, M2J 4Y8

and

The Ontario Ministry of Tourism, Culture and Sport

Prepared by

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Archaeological License: Matthew Beaudoin, Ph.D., P324
Our File: 2018-207
PIF Number: P324-0378-2019

March 2019
Original report submitted to the Ministry of Tourism, Culture and Sport
12 March 2019

Executive Summary

Enbridge Gas In.c (Enbridge) is proposing the Low-Carbon Energy Project to service an urban residential and commercial community in Markham, Ontario. All proposed segments of pipe are to be installed within the existing municipal road rights-of-way (ROWs). Timmins Martelle Heritage Consultants Inc. (TMHC) was contracted to carry out a Stage 1 archaeological assessment for the Project area by Dillon Consulting Limited (Dillon) who are coordinating the project on behalf of Enbridge. The Project area lies within part of Lots 16 to 28, Concession 3, Lots 16 to 23 and 28, Concession 4, Lots 10, 11, 13 and 14, Concession 5, in the Geographic Township of Markham, City of Markham, Regional Municipality of York, Ontario. The natural gas main installation project is divided into a Preliminary Preferred Route and an Alternative Route. The Preliminary Preferred Route is divided into Phases 1 and 2 which is further divided into Segments 2.1.-2.7. The Preliminary Preferred Route also includes Disconnection Points 1-4 and associated work areas. An Alternative Route was also established and considered in this assessment. The Alternative Route is divided into Phase 1 and 2 which is further divided into Segments 2.1-2.3. It was determined in discussions with the proponent that the Project area should be considered to be the entire ROW along the length of the proposed routes and an assumed 50 m wide area centred on them which represents an assumed work area. The Stage 1 assessment was undertaken as part of the internal Enbridge environmental screening process. All work was done in accordance with the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011).

The Stage 1 background study included a review of current land use, historic and modern maps, registered archaeological sites and previous archaeological studies, past settlement history for the area and a consideration of topographic and physiographic features, soils and drainage. The background research indicated that the Project area was in proximity to features signalling archaeological potential, namely: 1) watercourses (Rouge River, Berczy Creek, Bruce Creek, Eckhardt Creek and various small unnamed tributaries and ponds); 2) well-drained soils (Pontypool sandy loam, Berrien sandy loam and Cashel clay); 3) areas of 19th century settlement; 4) mapped 19th century thoroughfares (19th Avenue, Elgin Mills Road East, Woodbine Avenue, Major Mackenzie Drive East, 16th Avenue, Warden Avenue and Highway 7); and 5) previously identified archaeological sites (AlGu-463 (Peach 2), AlGu-457 (Glendower 3), AlGu-380 (Rice), AlGu-379 (McCague), AlGu-306 (Carlton Creek Northwest), AlGu-5 (Carlton Creek Northeast), AlGu-304 (Carlton Creek), AlGu-303 (Golden Tower), AlGu-302 (Dietzmann), AlGu-301 (Carver), AlGu-300 (Klinck) and AlGu-237).

A Stage 1 property inspection was undertaken for the Preliminary Preferred Route. The entire Alternative Route was not subject to a property inspection at this time. A review of historic aerial photographs, modern day imagery and topographic mapping was undertaken for the Preliminary Preferred Route and the Alternative Route to determine if prior land use had removed archaeological potential from the Project area.

Based on the information compiled in the background study and the property inspection, the following recommendations are made:

Preliminary Preferred Route - Phase 1

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Alternative Route - Phase 1

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.1

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Alternative Route - Segment 2.1

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.2

The majority of this Project area is free of archaeological concern; however, there are numerous areas that still have archaeological potential and require Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval. The areas that require Stage 2 survey include:

- Victoria Square Boulevard – eastern ROW across from Murison Drive;
- Woodbine Avenue – western ROW north of Major Mackenzie Drive;
- Woodbine Avenue – eastern and western ROW south of Major Mackenzie Drive;
- Woodbine Avenue – eastern and western ROW north of Rodick Road; and
- Rodick Road – eastern and western ROW, various parcels between Woodbine Avenue and Calvert Road.

Alternative Route - Segment 2.2

The majority of this Project area is free of archaeological concern; however, there are numerous areas that still have archaeological potential and require Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval. The areas that require Stage 2 survey include:

- Calvert Road – northern ROW between of Woodbine Avenue and Townson Road; and,

- Calvert Road – southern ROW west of Townson Road.

Preliminary Preferred Route - Segment 2.3

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Alternative Route - Segment 2.3

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.4

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.5

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.6

The majority of this Project area is free of archaeological concern; however, there are numerous areas that still have archaeological potential and require Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval. The areas that require Stage 2 survey include:

- Village Parkway – eastern and western ROW, various parcels between Carleton Road and Wentworth Court.

Preliminary Preferred Route - Segment 2.7

The majority of this Project area is free of archaeological concern; however, there are numerous areas that still have archaeological potential and require Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval. The areas that require Stage 2 survey include:

- Major Mackenzie Drive – northern ROW, two segments west of Walsingham Court; and
- Major Mackenzie Drive – southern ROW east of Walsingham Court.

Preliminary Preferred Route - Disconnect 1

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Disconnect 2

The northern portion of this Project area is free of archaeological concern; however, the southern portion still has archaeological potential and requires Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval.

Preliminary Preferred Route - Disconnect 3

The western portion of this Project area is free of archaeological concern; however, the eastern portion still has archaeological potential and requires Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval.

Preliminary Preferred Route - Disconnect 4

The majority of this Project area is free of archaeological concern; however, the there are areas in the northern portion that still have archaeological potential and require Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval.

If the Project area is changed to incorporate lands not covered within this assessment, then additional archaeological assessment may be required.

These recommendations are subject to the conditions laid out in Section 7.0 of this report and to the Ministry of Tourism, Culture and Sport's review and acceptance of this report into the provincial registry.

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Project Personnel

TMHC would like to thank the following staff members who contributed to this project:

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Tristan Lefler	*Associate* Dillon Consulting Limited
Natalie Taylor	Dillon Consulting Limited

Stage 1 Archaeological Assessment
Low-Carbon Energy Project
Enbridge Gas Inc.
Various Lots and Concessions
Geographic Township of Markham
Former County of York
City of Markham
Regional Municipality of York, Ontario

1.0 PROJECT CONTEXT

1.1 Development Context

1.1.1 Introduction

Enbridge Gas In.c (Enbridge) is proposing the Low-Carbon Energy Project to service an urban residential and commercial community in Markham, Ontario. All proposed segments of pipe are to be installed within the existing municipal road rights-of-way (ROWs). Timmins Martelle Heritage Consultants Inc. (TMHC) was contracted to carry out a Stage 1 archaeological assessment for the Project area by Dillon Consulting Limited (Dillon) who are coordinating the project on behalf of Enbridge. The Project area lies within part of Lots 16 to 28, Concession 3, Lots 16 to 23 and 28, Concession 4, Lots 10, 11, 13 and 14, Concession 5, in the Geographic Township of Markham, City of Markham, Regional Municipality of York, Ontario. The natural gas main installation project is divided into a Preliminary Preferred Route and an Alternative Route. The Preliminary Preferred Route is divided into Phases 1 and 2 which is further divided into Segments 2.1.-2.7. The Preliminary Preferred Route also includes Disconnection Points 1-4 and associated work areas. An Alternative Route was also established and considered in this assessment. The Alternative Route is divided into Phase 1 and 2 which is further divided into Segments 2.1-2.3. It was determined in discussions with the proponent that the Project area should be considered to be the entire ROW along the length of the proposed routes and an assumed 50 m wide area centred on them which represents an assumed work area. The Stage 1 assessment was undertaken as part of the internal Enbridge environmental screening process. All work was done in accordance with the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011).

All archaeological assessment activities were performed under the professional archaeological license of Matthew Beaudoin, Ph.D. (P324) and in accordance with the 2011 *Standards and Guidelines for Consultant Archaeologists* (MTC 2011). Permission to commence the study was given by Tristan Lefler, of Dillon.

1.1.2 Purpose and Legislative Context

The *Ontario Heritage Act* (1990) makes provisions for the protection and conservation of heritage resources in the province of Ontario. Our archaeological assessment work is part of an environmental review which is intended to identify areas of environmental interest as specified in the *Provincial Policy Statement* (2014). Heritage concerns are recognized as a matter of provincial interest in Section 2.6.2 of the *Provincial Policy Statement* (PPS) which states:

> *development* and *site alteration* shall not be permitted on lands containing *archaeological resources* or *areas of archaeological potential* unless *significant archaeological resources* have been *conserved* (OMMAH 2014:29).
>
> In the PPS the term *conserved* means:
>
> the identification, protection, management and use of *built heritage resources, cultural heritage landscapes* and *archaeological resources* in a manner that ensures their cultural heritage value or interest is retained under the *Ontario Heritage Act*. This may be achieved by the implementation of recommendations set out in a conservation plan, archaeological assessment and/or heritage impact assessment. Mitigative measures and/or alternative development approaches can be included in these plans and assessments (OMMAH 2014:40).

Sections 2 (d) and 3.5 of the *Planning Act* stipulate that municipalities shall have regard for their conservation of features of significant architectural, cultural, historical, archaeological or scientific interest. Therefore, the purpose of a Stage 1 background study is to determine if there is potential for cultural resources to be found on a property for which a change in land use is pending. If a property is found to have potential for cultural resources, a Stage 2 assessment is required, involving a search for archaeological resources.

2.0 STAGE 1 BACKGROUND STUDY

2.1 Research Methods and Sources

A Stage 1 background study was conducted to gather information about known and potential archaeological resources within the Project area. According to the Province of Ontario's 2011 *Standards and Guidelines for Consultant Archaeologists*, a Stage 1 background study must include a review of:

- an up-to-date listing of sites from the Ontario Archaeological Sites Database (OASD) of archaeological sites with 1 km of the property;
- reports of previous archaeological fieldwork within a radius of 50 metres;

- topographic maps at 1:10,000 (recent and historical) or the most detailed scale available;
- historic settlement maps (e.g., historical atlas, surveys);
- archaeological management plans or other archaeological potential mapping (when available); and
- commemorative plaques or monuments on or near the Project area.

For this project, the following activities were carried out to satisfy or exceed the above requirements:

- a database search of registered archaeological sites within 1 km of the Project area was carried out with the Ministry of Tourism, Culture and Sport's Past Portal system (completed August 8, 2018);
- a review of known prior archaeological reports for the Project area and adjacent lands (note the Ministry of Tourism, Culture and Sport currently does not keep a publicly accessible record of archaeological assessments carried out in the Province of Ontario, so a complete inventory of prior assessment work nearby is not available);
- Ontario Base Mapping (1:10,000) was reviewed through ArcGIS and mapping layers provided by geographynetwork.ca; detailed mapping provided by the client was also reviewed; and,
- historic maps and records related to post-1800 land settlement were studied.

This Project area is not covered by any existing archaeological management plans and there are no commemorative plaques or monuments identified within the vicinity.

Additional sources of information were also consulted, including modern aerial photographs, local history accounts, soils and physiography data provided by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), and both 1:50,000 (Natural Resources Canada) and finer scale topographic mapping.

When compiled, background information was used to create a summary of the characteristics of the Project area, to evaluate its archaeological potential. The Province of Ontario (MTC 2011 – Section 1.3.1) has defined the criteria that identify archaeological potential as:

- previously identified archaeological sites
- water sources
    - primary water sources (lakes, rivers, streams, creeks)
    - secondary water courses (intermittent streams and creeks, springs, marshes, swamps)
    - features indicating past water sources (e.g., glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river

or stream channels indicated by clear dip or swale in topography, shorelines of drained lakes or marshes, cobble beaches)
    - accessible or inaccessible shoreline (e.g., high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh)
- elevated topography (e.g., eskers, drumlins, large knolls, plateau)
- pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground
- distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases; there may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings
- resource areas, including:
    - food or medicinal plants (e.g., migratory routes, spawning areas, prairie);
    - scarce raw materials (e.g., quartz, copper, ochre or outcrops of chert);
    - early Euro-Canadian industry (e.g., fur trade, logging, prospecting, mining)
- areas of 19th century settlement. These include places of early military or pioneer settlement (e.g., pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches and early cemeteries. There may be commemorative markers of their history, such as local, provincial, or federal monuments or heritage parks.
- early historical transportation routes (e.g., trails, passes, roads, railways, portage routes)
- 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; and
- property that local histories or informants have identified with possible archaeological sites, historical events, activities or occupations.

In Southern Ontario (south of the Canadian Shield), any lands within 300 metres of any of the features listed above are considered to have potential for the discovery of archaeological resources.

Typically, a Stage 1 assessment will determine potential for precontact First Peoples' and historic era sites independently. This is due to the fact that lifeways varied considerably during these eras so that criteria used to evaluate potential for each type of site also varies.

It should be noted that some factors can also negate the potential for discovery of intact archaeological deposits. Subsection 1.3.2 of the 2011 *Standards and Guidelines for Consultant Archaeologists* indicates that archaeological potential can be removed in instances where land has been subject to extensive and deep land alterations that have severely damaged the integrity of any archaeological resources. Major disturbances indicating removal of archaeological potential include, but are not limited to:

- quarrying;
- major landscaping involving grading below topsoil;
- building footprints; and,
- sewage and infrastructure development.

Some activities (agricultural cultivation, surface landscaping, installation of gravel trails, etc.) may result in minor alterations to the surface topsoil but do not necessarily affect or remove archaeological potential. It is not uncommon for archaeological sites, including structural foundations, subsurface features and burials, to be found intact beneath major surface features like roadways and parking lots. Archaeological potential is, therefore, not removed in cases where there is a chance of deeply buried deposits, as in a developed or urban context or floodplain where modern features or alluvial soils can effectively cap and preserve archaeological resources.

2.2 Project Context: Archaeological Context

2.2.1 Project area: Overview and Physical Setting

Enbridge is proposing the Low-Carbon Energy Project to service an urban residential and commercial community in Markham, Ontario. The natural gas main installation project, described below, is divided into a Preliminary Preferred Route and an Alternative Route. The Preliminary Preferred Route is divided into Phases 1 and 2 which is further divided into Segments 2.1.-2.7. The Preliminary Preferred Route also includes Disconnection Points 1-4 and associated work areas. An Alternative Route was also established and considered in this assessment. The Alternative Route is divided into Phase 1 and 2 which is further divided into Segments 2.1-2.3. It was determined in discussions with the proponent that the Project area should be considered to be the entire ROW along the length of the proposed routes. All proposed segments of pipe are to be installed within the existing municipal right of way with an assumed 50 m wide study area centred on them which represents an assumed work area.

The Project area falls within the Peel Plain region (Chapman and Putnam 1984:174-176). Located between the Oak Ridges Moraine and Lake Ontario, this region's almost flat terrain consists of shale and limestone till overlaid by a clay layer of varying depth (Map 4).

The soil types within the Project area vary (Map 5). The soils along the Project area are Peel clay, Milliken loam, Bottom land, Chinguacousy clay loam, Malton clay, Cashel clay, Pontypool sandy loam and Berrien sandy loam. The characteristics and drainage capabilities of these soil types are present in Table 1 (Hoffman and Richards 1955). Peel clay refers to those soils of the Cashel catena developed on stone free lacustrine materials. The drainage is typically imperfect (Hoffman and Richards 1955:71). Milliken loam refers to those soils of the Woburn catena developed on medium textured shale and limestone till. The materials are dominantly shale with varying amounts of limestone. The drainage is typically imperfect (Hoffman and Richards 1955:32-34). Bottom land soils refer to those

low lying soils along stream courses which are subject to flooding. Bottom Land is an immature soil and shows little horizon differentiation. The profile usually consists of a deep dark coloured surface underlain by greyish material. The drainage varies but is usually poor (Hoffman and Richards 1955:76). Chinguacousy clay loam refers to those soils of the Oneida caterna developed on mostly limestone but with notable shale content. The drainage is typically imperfect (Hoffman and Richards 1955:41). Malton clay refers to those soils of the Cashel catena developed on lime lacustrine clays underlain by heavy textured clay till. The drainage is typically poor (Hoffman and Richards 1955:73). Cashel clay refers to those soils of the Cashel catena developed on lime lacustrial clays underlain by heavy textured clay till. Occurrence on smooth, moderately sloping topography which aids drainage is characteristic of this type. The drainage is typically good (Hoffman and Richards 1955:70, 71). Pontypool sandy loam refers to those soils developed on poorly sorted calcareous materials deposited by glacio-fluvial action. Occurrence on irregular, steeply sloping topography is characteristic of this type. These soils are well drained to excessively drained (Hoffman and Richards 1955:47). Berrien sandy loam refers to the soils of the Bookton catena developed on sand and clay till outwash. The topography is smooth, gently sloping. The drainage is typically imperfect (Hoffman and Richards 1955:63, 64).

Table 1: Soils within the Project area

Soil	Characteristics	Drainage
Peel clay	Developed on stone free lacustrine materials	Imperfect
Milliken loam	Developed on medium textured shale and limestone till	Imperfect
Bottom land	Developed on recently deposited alluvium	Poor
Chinguacousy clay loam	Developed on mostly limestone but with notable shale content	Imperfect
Malton clay	Developed on lime lacustrial clays	Poor
Cashel clay	Developed on lime lacustrial clays	Good
Pontypool sandy loam	Developed on poorly sorted calcareous materials deposited by glacio-fluvial action	Well Drained to Excessively Well Drained
Berrien sandy loam	Developed on sand and clay till outwash	Imperfect

The Credit, Humber, Don, and Rouge Rivers have cut deep valleys through the Peel Plain physiographic region, as have other streams such as the Bronte, Oakville, and Etobicoke Creeks. The Project area is located within the Rouge River watershed (Map 5). The Project area occurs in an area between the Rouge River and the Bruce and Eckhardt Creeks, major tributaries of the Rouge. Parts of every section of the Project area occur within roughly 300 m of a source of potable water save for Section 2.1.

2.2.2 Summary of Registered or Known Archaeological Sites

According to the Ontario Archaeological Sites Database (OASD) maintained by the Ministry of Tourism, Culture and Sport, there are 43 registered archaeological sites within one kilometre of the Project area (Table 2). The majority were identified during cultural resource management (CRM) projects in advance of development since the 1990s. Only

12 of the sites (AlGu-463 (Peach 2), AlGu-457 (Glendower 3), AlGu-380 (Rice), AlGu-379 (McCague), AlGu-306 (Carlton Creek Northwest), AlGu-5 (Carlton Creek Northeast), AlGu-304 (Carlton Creek), AlGu-303 (Golden Tower), AlGu-302 (Dietzmann), AlGu-301 (Carver), AlGu-300 (Klinck) and AlGu-237) were identified within 300 m of the Project area (SD Map 22). These sites are discussed in detail in the following section.

Table 2: Registered Archaeological Sites within 1 km of the Project area

Borden Number	Site Name	Time Period	Affinity	Site Type	Current Development Review Status
AlGt-211	CNR Uxbridge 2	Post-Contact	Euro-Canadian	midden	
AlGt-262		Pre-Contact	Aboriginal	findspot	
AlGt-264		Pre-Contact	Aboriginal	findspot	
AlGt-265		Pre-Contact	Aboriginal	findspot	
AlGt-266		Pre-Contact	Aboriginal	findspot	
AlGt-267		Post-Contact	Euro-Canadian	Other privy, homestead	Further CHVI
AlGt-621		Post-Contact		homestead, midden	
AlGt-652		Pre-Contact	Aboriginal	Unknown	Further CHVI
AlGt-653		Post-Contact	Euro-Canadian	Unknown	No Further CHVI
AlGt-654		Post-Contact	Euro-Canadian	Unknown	No Further CHVI
AlGu-10	BUTTONVILLE	Pre-Contact	Aboriginal	Othercamp/campsite	
AlGu-11	BARKER	Other		Othercamp/campsite	
AlGu-12	Bruce Creek	Pre-Contact	Aboriginal	Othercamp/campsite	
AlGu-14	ALMIRA	Pre-Contact	Aboriginal	Othercamp/campsite	
AlGu-218	Neu	Post-Contact	Euro-Canadian	midden	Further CHVI
AlGu-220		Archaic, Late	Aboriginal	findspot	
AlGu-222		Pre-Contact	Aboriginal	findspot	
AlGu-237		Pre-Contact	Aboriginal	findspot	
AlGu-24	Nicholson	Woodland	Aboriginal	village	
AlGu-300	The Klinck Site	Post-Contact	Euro-Canadian	homestead	No Further CHVI
AlGu-301	Carver	Post-Contact	Euro-Canadian	dump	
AlGu-302	Dietzmann	Post-Contact	Euro-Canadian	homestead	No Further CHVI
AlGu-303	Golden Tower	Archaic, Late	Aboriginal	Othercamp/campsite	
AlGu-304	The Carlton Creek Site	Pre-Contact	Aboriginal	scatter	
AlGu-305	Carlton Creek Northeast	Archaic, Middle	Aboriginal	findspot	
AlGu-306	Carlton Creek Northwest	Pre-Contact	Aboriginal	findspot	
AlGu-322	Cathedral Town	Archaic, Middle	Aboriginal	findspot	
AlGu-354	Kizhep	Pre-Contact	Aboriginal	Othercamp/campsite	
AlGu-370	Baker	Post-Contact	Euro-Canadian	homestead	No Further CHVI
AlGu-371		Post-Contact		Unknown	Further CHVI
AlGu-373	AlGu-372	Pre-Contact		scatter	No Further CHVI
AlGu-374	AlGu-374	Pre-Contact		scatter	No Further CHVI
AlGu-375	AlGu-375	Pre-Contact		scatter	No Further CHVI
AlGu-376	AlGu-376	Pre-Contact		scatter	No Further CHVI
AlGu-377	AlGu-377	Pre-Contact		scatter	No Further CHVI
AlGu-386	Bawden-Wood I	Pre-Contact	Aboriginal		
AlGu-390	Barber 2				
AlGu-391	Barber's Pit				
AlGu-4	HEISE	Pre-Contact	Aboriginal	Othercamp/campsite	
AlGu-401	Glendower	Post-Contact			
AlGu-42					
AlGu-456	Glendower 2	Post-Contact			
AlGu-457	Glendower 3	Post-Contact			
AlGu-462	Peach 1				
AlGu-463	Peach 2	Post-Contact	Euro-Canadian		
AlGu-464	Peach 3				
AlGu-465	James Nigh	Post-Contact	Euro-Canadian	Otherhomestead, midden	
AlGu-466	Spring Family	Post-Contact	Euro-Canadian	homestead	

Borden Number	Site Name	Time Period	Affinity	Site Type	Current Development Review Status
AlGu-467	Teal Family	Post-Contact	Euro-Canadian	homestead	
AlGu-470	AlGu-470-P1	Paleo-Indian, Pre-Contact	Aboriginal	findspot	
AlGu-471	AlGu-471-P5	Archaic, Middle, Paleo-Indian	Aboriginal	scatter	
AlGu-472	Baker Dump	Post-Contact	Euro-Canadian	scatter	
AlGu-497	DeGear Site	Post-Contact	Euro-Canadian	homestead	No Further CHVI
AlGu-499	Rawn Site	Post-Contact	Euro-Canadian	homestead	Further CHVI
AlGu-500	Berczy H1 Site	Post-Contact	Euro-Canadian	homestead	Further CHVI
AlGu-502	Berczy H4 Site	Post-Contact	Euro-Canadian	homestead	Further CHVI
AlGu-505		Pre-Contact	Aboriginal	findspot	No Further CHVI
AlGu-510	Victoria Square 1	Post-Contact	Euro-Canadian	homestead	Further CHVI
AlGu-513					
AlGu-6	BARKER	Post-Contact, Woodland, Early	Aboriginal, Euro-Canadian	Othercamp/campsite	
AlGu-73	Ursa	Other		Otherfindspot	
AlGu-84	Bootes	Pre-Contact	Aboriginal	Unknown	
AlGu-90	Stong	Post-Contact	Euro-Canadian	homestead	
AlGu-91	McConnell	Post-Contact	Euro-Canadian	homestead	

2.2.3 Summary of Past Archaeological Investigations Within 50 Metres

During our background review it was established that nine archaeological projects had taken place within 50 metres of the Project area. As the Province does not currently maintain an accessible database of archaeological assessment areas *per se*, it is not known whether this is a complete inventory of archaeological assessment activities undertaken within 50 metres of the Project area.

An archaeological assessment was conducted in 1986 and 1987 by the MIA for a property comprised of parts of Lots 18, 19 and 20, Concession 3 east of Highway 404 (SD Map 21). This assessment overlaps with portions of Segment 2.2 Preferred Preliminary Route and Segment 2.2 Alternate Route of the current project area; however, the area to the southwest of the intersection of Major Mackenzie Drive and Woodbine Avenue was not mapped as assessed in MIA's previous work. As such, it is not clear if this area was actually assessed. Assessment of the property included a pedestrian survey at 5 m transect intervals of the ploughed fields west of the Rouge River within Lots 18 and 19 and the ploughed field east of the Rouge within Lot 19. A test pit survey at 5 m transect intervals was conducted in the unploughed areas east of Highway 404 within Lots 18, 19 and 20 and the area immediately southwest of the intersection of Major Mackenzie Drive and Woodbine Avenue within Lot 20. This survey resulted in the recovery of a single fragment of a large biface made on Onondaga chert from Lot 19. This find was registered and Bordenized as AlGu-42. A small collection of mid to late 19th century artifacts was recovered from Lot 19 in association with a house foundation dated to 1866. These finds were not deemed to have significant heritage value and no further work was recommended. The details of this work were presented in an interim report entitled *Interim Report on an Archaeological Assessment of Parts of Lots 18, 19 and 20, Concession 3, Town of Markham* (MIA 1987; Licence Number 86-24) and a final report entitled *Report on the Completion of an Archaeological Assessment of Parts of Lots 18, 19 and 20, Concession 3, Town of Markham* (MIA 1987; Licence Number 87-40).

An archaeological assessment was conducted in 1989 by the Museum of Indian Archaeology (MIA; now Museum of Ontario Archaeology) for a property occupying the southeastern portion of Lot 17, Concession 3 in advance of the development the Buttonville Business Park (19T-87108) (SD Map 17). This assessment overlaps with portions of Segment 2.2 Alternate Route of the current project area. The assessment consisted of a pedestrian survey in transects at 5 m intervals with the ploughed fields in the eastern third of the property. The golf course in the western half of the property and the areas surrounding the Rouge River were not surveyed. No archaeological resources were recovered. The details of this work were presented in a report entitled *Archaeological Assessment of Draft Plan of Subdivision 19T-87108 forming part of the proposed Buttonville Business Park, Town of Markham* (MIA 1990; Licence Number 89-160B)

An archaeological assessment was conducted in 1989 by the MIA for three properties to be impacted by the Buttonville Business Park development (19T-87109, 19T-87110 and 19T-87111) (SD Maps 18, 19 and 20). The properties occupied part of Lots 16, 17, 18 and 19, Concession 3. This assessment overlaps with portions of Segment 2.2. Preferred Preliminary Route and Segment 2.2 Alternate Route of the current project area. Assessment of the lands of Draft Plan 19T-87109 was confined to a pedestrian survey at 5m transect intervals of two ploughed fields along the eastern edge of the property. Assessment of the lands of Draft Plan 19T-87110 consisted of a pedestrian survey at 5 m transect intervals of the ploughed fields in the central portion of the property and test pit survey at 5m transect intervals of a triangular shaped woodlot on a plateau on the west side of the Rouge River. Assessment of the lands of Draft Plan 19T-87111 consisted of a pedestrian survey at 5m transect intervals of the entire parcel which had been ploughed. No archaeological resources were recovered. The details of this work were presented in a report entitled *Archaeological Assessment of Draft Plan of Subdivisions 19T-87109, 19T-87110 and 19T-87111 forming parts of the proposed Buttonville Business Park, Town of Markham* (MIA 1991; Licence Number 89-160B)

A Stage 1 and 2 assessment was conducted in 2001 by Archeoworks Inc. for a 27.7 hectare property located within Lots 22 and 23, Concession 4 as part of the East Cathedral Town Community development. The Stage 2 survey resulted in the recovery of one isolated precontact findspot (AlGu-237) and a small collection of 19th-century artifacts (SD Map 10). AlGu-237 findspot consists of an isolated biface, possibly an end scraper which is likely made on Onondaga chert. AlGu-237 was not recommended for Stage 3 assessment. Due to the low yield and non-diagnostic nature of the 19th-century cluster, this area was not registered as an archaeological site or recommended for Stage 3 assessment. The detailed results of this work are presented in a report entitled *Stage 1-2 Archaeological Assessment of 27.7 Hectare Property Part of Lots 22 & 23, Concession 4, 19TM-01002 Woodbine Avenue/Major Mackenzie Drive, East Cathedral Community, Town of Markham, Regional Municipality of York, Ontario* (Archeoworks Inc. 2001; licensee Kim Slocki CIF#2001-015-004)

A Stage 1 and 2 archaeological assessment was conducted in 2001 and 2003 by ASI on part of Lots 23, 24 and 25, Concession 3 for the Cathedraltown Subdivision (SD Map

11). This assessment overlaps with parts of Segment 2.2 Preferred Preliminary Route, Segment 2.3 Preferred Preliminary Route, Segment 2.3 Alternate Route, and Segment 2.4 Preferred Preliminary Route. The Stage 2 survey resulted in the discovery of six archaeological sites and one findspot: AlGu-300 (Klinck), AlGu-301 (Carver), AlGu-302 (Dietzmann), AlGu-304 (Carlton Creek), AlGu-305 (Carlton Creek Northeast), AlGu-306 (Carlton Creek Northwest) and findspot P7. All six of these archaeological sites and the one findspot are within 300 m of the current Project area and have been cleared of archaeological concern.

AlGu-304 is divided into two loci separated by 25 m. The northern locus comprised two pieces of lithic debitage and one biface midsection within a 15 m diameter area. The southern comprised two pieces of lithic debitage and one scraper. AlGu-305 comprised a single isolated side-notched projectile point found 330 m north of AlGu-304. AlGu-306 comprised a single isolated biface fragment found 200 m to the west of AlGu-305. Findspot P7 consists of an isolated piece of Onondaga chert shatter. This findspot was not registered as an archaeological site. AlGu-300 is comprised of a diffuse scatter of over 100 19th-century artifacts over a 60 m x 80 m area. A sample of 20 artifacts was collected which indicate an early to mid-19th century date for the site. AlGu-301is comprised of a small scatter of 10 19th-century artifacts over a 10 m diameter area. A sample of six artifacts was collected which indicate a late 19th-century date for the site. AlGu-302 is comprised of a diffuse scatter of 18th and 19th-century artifacts over a 40 m x 50 m area. A sample of 11 artifacts was collected that indicates a late 18th to early 19th century date for the site. AlGu-304, AlGu-302, and AlGu-300 were recommended for Stage 3 assessment. AlGu-305, AlGu-306, AlGu-301, and findspot P7 were not recommended for Stage 3 assessment. The detailed results of this work are presented in a report entitled *Stage 1-2 Archaeological Assessment of Cathedraltown Subdivision Revised Draft Plan 19TM-01001, Part of Lots 23, 24 and 25, Concession 3, Geographic Township of Markham, Town of Markham, Regional Municipality of York, Ontario* (ASI 2003; licensee Martin Cooper CIF#2001-020-007)

In 2003, ASI began a Stage 3 assessment of AlGu-302. The Stage 3 assessment began with a CSP of the reploughed surface of the site area; this resulted in the recovery of 232 artifacts. The CSP was followed by the excavation of 13 one by one metre test units across the site area to determine the site's extent. Stage 3 excavations resulted in the recovery of 279 artifacts. Artifacts recovered during Stage 3 included architectural and domestic wares (SD Map 12). Stage 4 work at AlGu-302 in 2003 consisted of topsoil stripping within the densest part of the site area as determine by the CSP results. A total of 10 features were observable in the stripped area (SD Map 14). These were excavated and recorded resulting in the recovery of an additional 54 artifacts. Analysis of artifacts and archival materials confirmed that AlGu-302 represented a brief occupation of the widow Frau Dietzmann and her son John in a log cabin on the property from roughly 1796-1816. Archaeological evidence suggested that the cabin as occupied later into the 1830s or used as a dump in the 19th century.

In 2003, ASI began a Stage 3 assessment of AlGu-300. The Stage 3 assessment began with a CSP of the reploughed surface of the site area; this resulted in the recovery of 466 artifacts. The CSP was followed by the excavation of eight one by one metre test units across the site area to determine the site's extent. Test unit excavation resulted in the recovery of 325 artifacts including ceramics, bone and window glass fragments characteristic of 19th century domestic sites (SD Map 13). Stage 4 work at AlGu-300 in 2003 consisted of topsoil stripping and the documentation of 27 cultural features (SD Map 15). A total of 2,373 artifacts were recovered during Stages 3 and 4 excavation; 466 from the surface, 335 from the plough zone and backdirt and 1,572 from features. Analysis of the artifacts and archival materials confirmed that AlGu-300 represented a re-occupation of Lot 24, Con 3 circa 1837 to the 1870s by the Klinck family who inhabited a log cabin.

The detailed results of the Stage 3 and 4 work at AlGu-302 and AlGu-300 are presented in a report entitled *Stages 3 & 4 Archaeological Excavation of the Klinck (AlGu-300) and the Dietzmann (AlGu-302) Sites, Draft Plan of Subdivision 19T M-01001, Part of Lots 23, 24 and 25, Concession 3, Geographic Township of Markham, Now the Town of Markham, Ontario* (ASI 2006; licensee Eva MacDonald CIF#P125-045)

It should be noted that a Stage 3 archaeological assessment of AlGu-304 was undertaken by ASI in 2004. As of the time of the production of this report we were unable to obtain a copy of said report. It is not clear whether or not Stage 4 assessment was recommended for AlGu-304. The detailed results of the Stage 3 work at AlGu-304 is presented in a report entitled *Stage 3 Archaeological Investigation of The Carlton Creek Site (AlGu-304), Draft Plan of Subdivision 19TM-01001, Part of Lots 23, 24 & 25, Concession 3, Geographic Township of Markham, Now the Town of Markham, Regional Municipality of York, Ontario* (ASI 2004; licensee Bruce Welsh P047-013)

A Stage 1 and 2 archaeological assessment was conducted in 2004 by ASI for the proposed Cathedral Town Development (SD Map 7). This assessment overlaps with Segment 2.2 Preferred Preliminary Route of the current project area. This assessment reported on and further documented a previously identified archaeological site and discovered one additional findspot: AlGu-303 (Golden Tower) and the AlGu-322 (Cathedral Town) findspot (SD Map 8). AlGu-303 occurs within 300 m of the current Project area. AlGu-303 had previously been identified and sampled in 2001 by ASI during a Stage 2 assessment of neighbouring lands which were also to form a part of the Cathedral Town Development. A total of 48 artifacts including 47 pieces of lithic debitage and one bone were collected in 2001. In 2003, ASI returned to the site and collected an additional five pieces of lithic debitage. It was later determined that the site lay outside of the assessment area. The 2001 and 2003 documentation of AlGu-303 was reported later alongside with the 2004 Stage 2 work. A total of seven pieces of lithic debitage and a late Archaic period Genesee point were recovered from the site during Stage 2 pedestrian survey in 2004. The artifacts recovered from AlGu-303 came from a 40 m x 40 m area and the site was recommended for Stage 3 assessment. The detailed results of the 2004 as well as the earlier 2001 and 2003 work are presented in a report entitled *Stage 1 and 2 Archaeological Assessment of Cathedral Town Development, Part of Lots 22, 23 and 24,*

Concession 3, Geographic Township of Markham, County of York, Town of Markham, Regional Municipality of York (ASI 2005; licensee Debbie Steiss; P049-112, P049-123, P049-124).

A Stage 3 assessment of AlGu-303 was conducted in 2005 by AASI. The Stage 3 assessment included the excavation of 22 one by one metre test units across the site and resulted in the recovery of 21 artifacts (SD Map 9). No cultural features or additional diagnostic artifacts were recovered. AlGu-303 was not recommended for Stage 4 mitigation. The detailed results of this work are presented in a report entitled *Stage 3 Assessment of the Golden Tower Site (AlGu-303), Lot 24, Concession 3 (Geographic Township of Markham, County of York), Town of Markham, Regional Municipality of York* (ASI 2005; licensee Bruce Welsh P047-126).

A Stage 1 and 2 archaeological assessment was conducted in 2007 by Archaeological Assessments Ltd. for 11160 Woodbine Avenue (SD Map 1). The assessment consisted of archival and map-based research as well as Stage 2 pedestrian and test pit survey. This survey overlaps with Phase 1 Preferred Preliminary Route, Phase 1 Alternate Route, Segment 2.1 Preliminary Preferred Route, and Segment 2.1 Alternate Route of the current project. This assessment identified two archaeological sites: AlGu-379 (McCague), a mid-19th century domestic site, and AlGu-380 (Rice), an early Archaic period findspot. AlGu-379 consisted of 38 artifacts recovered from a 40 m x 40 m area in an agricultural field and was recommended for Stage 3 assessment. AlGu-380 consisted of an isolated early Archaic period bifurcate base point made from Onondaga chert. No additional artifacts were located in the surrounding area within a 25 m radius of the find. AlGu-380 was not recommended for Stage 3 assessment. The details of this work were presented in a report entitled *The Stage 1-2 Archaeological Assessment of 11160 Woodbine Avenue, Part of Lot 28, Conc 3, and Part of Honda Boulevard and the Woodbine Bypass, Part of Lots 27 & 28, Conc 3, Town of Markham, Regional Municipality of York* (Archaeological Assessment Ltd. 2008; licensee Rick Sutton P013-377-2007).

In 2008, Archaeological Assessments Ltd. began a Stage 3 assessment of AlGu-379. This site is located within Phase 1 Preferred Preliminary Route and Phase 1 Alternate Route of the current project. The Stage 3 assessment began with a controlled surface pickup (CSP) of the reploughed surface of the site area resulting in the recovery of 118 artifacts. The site as is existed on the ploughed surface measured 24 m x 46 m. The CSP was followed by the excavation of 20 one by one metre test units across the site area. Stage 3 excavations resulted in the recovery of 760 artifacts (SD Map 2). Stage 4 work at AlGu-379 was completed in 2008 consisted of topsoil stripping and feature documentation. A total of six features and 12 post moulds were observable in the stripped area (SD Map 3). The features were excavated and recorded resulting in the recovery of an additional 271 artifacts. Analysis of artifacts and archival materials confirmed that AlGu-379 represents the location of a small homestead occupied by John McCague and his family in the 1840s and 1860s. The detailed results of the Stage 3 and 4 work at AlGu-379 (McCague) are presented in a report entitled *The Stage 3-4 Excavations of the McCague Site (AlGu-379), 11160 Woodbine Avenue, Part Of Lot 28, Concession 3, And Part Of Honda Boulevard*

And The Woodbine Bypass, Part Of Lot 27 & 28, Concession 3, Town Of Markham, Regional Municipality Of York (Archaeological Assessment Ltd. 2010; licensee Rick Sutton P013-410-2007).

Stage 1 to 3 archaeological assessments were conducted in 2008 and 2009 by This Land Archaeology Inc. for Glendower Properties Inc.'s land in Markham, part of Lots 28 and 29, Concession 4 in Regional Municipality of York (SD Map 4). The Stage 1 assessment determined that the property demonstrated potential for the discovery of archaeological resources. As such, a Stage 2 archaeological assessment was recommended. The Stage 2 archaeological assessment consisted of a pedestrian survey of the agricultural fields. Three small fields adjacent to Woodbine Avenue and two fields at the rear of the properties were not assessed at that time. This assessment identified three archaeological sites: AlGu-401 (Glendower), AlGu-456 (Glendower 2), and AlGu-457 (Glendower 3) as well as a single isolated Brewerton side-notched projectile point. AlGu-401 consisted of an artifact scatter derived from an early to mid-19th century farmstead. AlGu-456 was a large scatter derived from an early to mid-19th century farmstead. AlGu-457 was a small scatter derived from a mid to late 19th century homestead. All three of these sites were recommended for Stage 3 assessment.

Stage 3 assessment consisted of archival and map-based research as well as a CSP at each site. The CSP at AlGu-401 resulted in the recovery of 392 artifacts from a 1.12 acre area including a single Brewerton projectile point found 570 m southwest of the site. The CSP at AlGu-456 resulted in the recovery of 1,886 artifacts from a 0.7 acre area including two primary Onondaga chert flakes. The CSP at AlGu-457 resulted in the recovery of 113 artifacts from a 0.2 acre area (SD Map 5). AlGu-401 and AlGu-456 required Stage 3 test excavation to complete the Stage 3 assessment. The AlGu-457 was not recommended for Stage 3 test excavation as it dates to the mid-to-late 19th century. The details of the Stage 1-3 work conducted are presented in a report entitled *REVISED report on the 2008 and 2009 Stage 1 to 3 Archaeological Assessment of Glendower Properties Inc.'s Property, part of Lots 28 and 29, Concession 4, Town of Markham, Regional Municipality of York, Ontario, AlGu-401; AlGu-456, AlGu-457* (This Land Archaeology Inc. 2013; licensee William Finlayson P059-135-2009, P059-135-2009-STG3, P059-080-2008, P059-080-2008-STG3). Additional fieldwork at AlGu-401 and AlGu-456 is ongoing at the time of the production of this report (This Land Archaeology Inc., personal communication, January 23, 2019).

A Stage 1 and 2 archaeological assessment was conducted in 2010 and 2011 by Archaeological Services Inc. (ASI) for a 5 hectare property at 10975 Woodbine Avenue within Lot 27, Concession 4. The Stage 2 survey resulted in the discovery of three archaeological sites: AlGu-462 (Peach 1), AlGu-463 (Peach 2) and AlGu-464 (Peach 3) (SD Map 6). AlGu-463 occurs within 300 m of the current Project area. AlGu-463 consists of 118 artifacts from 11 test pits measuring 12 m x 13 m. The site dates to the mid-to-late 19th century and was recommended for Stage 3 assessment. The detailed results of this work are presented in a report entitled *Stage 1 and 2 Archaeological Assessment of Part of Lot 27, Concession 4 Geographic Township of Markham, County of York, Town of*

Markham, Regional Municipality of York (ASI 2012; licensee Debbie Steiss and Andrew Riddle; P049-601-2010/P347-052-2011).

A Stage 3 archaeological assessment of AlGu-463 was conducted in 2011 by ASI. The Stage 3 assessment included the excavation of nine one-metre square test units placed across a 10 m x 10 m area that encompassed the Stage 2 test pits (SD Map 7). Stage 3 excavations resulted in the recovery of a mixed assemblage of 2,330 19th- and 20th- century artifacts. Excavations revealed that soil alterations had taken place in the area that had significantly impacted the archaeological integrity of the site. AlGu-463 was not recommended for Stage 4 mitigation. The detailed results of this work are presented in a report entitled *Stage 3 Archaeological Assessment of The Peach 2 Site (AlGu-463) 10975 Woodbine Ave, Part of Lot 27, Concession 4, Geographic Township of Markham, County of York, Town of Markham, Regional Municipality of York, Revised Report* (ASI 2014; licensee Eva MacDonald; P125-072-2011).

A Stage 1 archaeological assessment was conducted in 2016 by Golder Associates Ltd. for the York Downs Golf Club at 4134 16th Avenue, City of Markham (SD Map 16). The assessment consisted of archival and map-based research as well as Stage 1 property assessment. The Stage 1 assessment determined that the majority of the property exhibited potential for the recovery of intact archaeological deposits and Stage 2 survey was recommended for the identified areas of archaeological potential. The details of this work were presented in a report entitled *Stage 1 Archaeological Assessment York Downs Golf Club, Parts of Lot 16, 17 and 18, Concession 5, Geographic Township of Markham, County of York, Now 4134 16th Avenue, City of Markham, Ontario* (Golder Associates Ltd. 2016; licensee Jamie Lemon P1056-0049-2015).

2.2.4 Dates of Archaeological Fieldwork

The property inspection was conducted on January 17, 2019, in unseasonal overcast and cool weather conditions. The weather conditions allowed for good visibility for the inspection of the surface features. The field directors for the property inspection were Liam Browne (P1048) and Matthew Severn (R1093).

2.3 Project Context: Historical Context

2.3.1 First Peoples Settlement in Markham

There is archaeological evidence of First Peoples settlement in Markham since the time of glacial retreat some 12,000 years ago through to the modern era. Nonetheless, our knowledge of past native land use in the area is incomplete due primarily to a lack of archeological investigation of many areas prior to urban development. Nonetheless, using province-wide and region-specific data, a general model of First Peoples settlement in the area can be proposed. The following paragraphs provide a basic textual summary of the known general cultural trends and archaeological periods and a tabular summary appears in Table 3.

Table 3: Cultural Chronology for First Peoples Settlement in the Markham

Period			Time Range (circa)	Diagnostic Features	Complexes
Paleoindian	Early		9000-8400 B C	Fluted projectile points	Gainy, Barnes, Crowfield
	Late		8400-8000 B C	Non-fluted and lanceolate points	Holcombe, Hi-Lo, Lanceolate
Archaic	Early		8000-6000 B C	Serrated, notched, bifurcate base points	Nettling
	Middle		6000-2500 B C	Stemmed, side & corner notched points	Brewerton, Otter Creek, Stanley/Neville
	Late		2000-1800 B C	Narrow points	Lamoka
			1800-1500 B C	Broad points	Genesee, Adder Orchard, Perkiomen
			1500-1100 B C	Small points	Crawford Knoll
	Terminal		1100-950 B C	First true cemeteries	Hind
Woodland	Early		950-400 B C	Expanding stemmed points, Vinette pottery	Meadowood
	Middle		400 B C - A D 500	Dentate, pseudo-scallop pottery	Saugeen
	Transitional		A D 500-900	First corn, cord-wrapped stick pottery	Princess Point
	Late	Early Iroquoian	A D 900-1300	First villages, corn horticulture, longhouses	Glen Meyer, Pickering
		Middle Iroquoian	A D 1300-1400	Large villages and houses	Uren, Middleport
		Late Iroquoian	A D 1400-1650	Tribal emergence, territoriality	Neutral Iroquois, Wendat
Contact		Aboriginal	A D 1650-1875	Treaties, mixture of Native & European items	Six Nations/Mississaugas, Seneca
		Euro-Canadian	A D 1796 - present	English goods, homesteads	European settlement, pioneer life

Paleoindian Period

The first human populations to inhabit the area came to the region between 10,000 and 12,000 years ago, coincident with the end of the last period of glaciation. Climate and environmental conditions were significantly different than they are today; local environs would not have been welcoming to anything but short-term settlement. Termed Paleoindians by archaeologists, Ontario's first peoples would have crossed the landscape in small groups (i.e., bands or family units) searching for food, particularly migratory game species. In this area, caribou may have provided the staple of Paleoindian diet, supplemented by wild plants, small game and fish. Given the low density of populations on the landscape at this time and their mobile nature, Paleoindian sites are small and ephemeral. They are usually identified by the presence of distinctive fluted projectile points, usually manufactured on high quality raw materials, including Onondaga chert from the Niagara Escarpment and Fossil Hill chert from Blue Mountains.
Paleoindian sites have commonly been found in association with relic glacial lakeshores throughout Ontario.

Archaic Period

Settlement and subsistence patterns changed significantly during the Archaic period as both the landscape and ecosystem adjusted to the retreat of the glaciers. Building on earlier patterns, early Archaic populations continued the mobile lifestyle of their predecessors. Through time and with the development of more resource rich local environments, these groups gradually reduced the size of the territories they exploited on a regular basis. A seasonal pattern of warm season riverine or lakeshore settlements and interior cold weather occupations has been documented in the archaeological record. The large cold-weather mammals that formed the basis of the Paleoindian subsistence pattern

became extinct or moved northward with the onset of warmer climate conditions. Thus, Archaic populations had a more varied diet, exploiting a range of plant, bird, mammal and fish species. Over time, reliance on specific food resources like fish, deer and nuts became more pronounced and the presence of more hospitable environments and resource abundance led to the expansion of band and family sizes. This is evident in the archaeological record in the form of larger sites and aggregation camps, where several families or bands would come together in times of plenty. The change to more preferable environmental circumstances led to a rise in population density. As a result, Archaic sites are more plentiful than those from the earlier period. Artifacts typical of these occupations include a variety of stemmed and notched projectile points, chipped stone scrapers, ground stone tools (e.g., celts, adzes) and ornaments (e.g., bannerstones, gorgets), bifaces or tool blanks, animal bone (where and when preserved) and waste flakes, a by-product of the tool making process.

Early, Middle and Transitional Woodland Periods

Significant changes in cultural and environmental patterns are witnessed in the Early, Middle and Transitional Woodland periods (ca. 950 B.C. to A.D. 1000). Occupations became increasingly more permanent in this period, culminating in major semi-permanent villages by 1,000 years ago. Archaeologically, one of the most significant changes by Woodland times is the appearance of artifacts manufactured from modeled clay and the emergence of more sedentary villages. The Woodland Period is often defined by the occurrence of pottery, storage facilities and residential areas similar to those that define the early agricultural or Neolithic period in Europe. The earliest pottery was crudely made by the coiling method and early house structures were simple oval enclosures. Both the Early and Middle Woodland sub-periods are characterized by an elaborate burial complex that in some areas in Ontario involved the construction of large burial mounds. Trade in exotic items, including rare stone and shell objects, became common at this time, reflecting interconnections between Ontario populations and those in the Ohio and Mississippi river valleys to the south.

Late Woodland – Iroquoian Period

Beginning circa A.D. 1000 the archaeological record documents the emergence of more substantial, semi-permanent settlements and the adoption of corn horticulture. These developments are most often associated with Iroquoian-speaking populations, the ancestors of the Wendat (Huron), Tionontati (Petun) and Attawandaron (Neutral) nations who were known to have resided in the province at the time of the arrival of the first European explorers and missionaries. Iroquoian villages incorporated a number of longhouses, multi-family dwellings that contained several families related through the female line. Precontact Iroquoian sites may be identified by a predominance of well-made pottery decorated with various simple and geometric motifs, triangular projectile points, clay pipes and ground stone artifacts. Sites post-dating European contact are recognized through the appearance of various items of European manufacture. The latter include materials acquired by trade (e.g., glass beads, copper/brass kettles, iron axes, knives and other metal implements) in

addition to the personal items of European visitors and Jesuit missionaries (e.g., finger rings, stoneware, rosaries, and glassware).

Recent Historic Period

When European explorers and missionaries arrived in Ontario in the 17th century, the Wendat no longer inhabited the York area and instead, occupied a vast area between Lake Simcoe and Georgian Bay. By 1650, many Wendat had fled due to the onset of epidemic disease and increasing raids by Five Nations Iroquois groups who had established an increasing presence along Lake Ontario. At least two major Seneca villages were established on the Rouge River later that century. At the same time, Algonquian-speaking populations were utilizing the watershed for hunting and trapping. By the 17th century, the Seneca no longer inhabited the Lake Ontario shores and the Algonquin-speaking Mississaugas began moving southward into the area. It was the Mississaugas who had settled the area by the time the British arrived in the late 18th century.

2.3.2 19th Century and Municipal Settlement

The Project area lies within parts of Lots 16 to 28, Concession 3, Lots 16 to 23 and 28, Concession 4, Lots 10, 11, 13 and 14, Concession 5, in the Geographic Township of Markham, City of Markham, Regional Municipality of York, Ontario. A brief discussion of 19th century and municipal settlement in the City of Markham is provided below, as a means of providing general context for understanding former land use.

The early county of York was a contested area of significance for the Iroquois and Huron of Ontario. This significance was attributed to the area because of the Holland River's importance as a transportation route and the surrounding marshes importance as a source of game (Rolling 1966:11). The earliest Europeans in the region were the French, who used the area as an important trading area with the local First Nations and valued the Holland River as a transportation route between Lake Simcoe and Georgian Bay. The British gained control of the region in 1759 and rapidly began preparing the region for settlement. Governor Simcoe commissioned Augustus Jones to survey the County in 1794, focusing around Yonge Street, a former native trail. The earliest settlement was focused around Yonge Street and it became an important transportation route during the War of 1812 (Rolling 1966:12).

Governor Simcoe pushed for the settlement of Markham Township by "stable, loyal pioneers" (Champion 1979:11) and rapidly attracted the Berczy Settlers. These were settlers from various German states who initially moved to the Genesee Tract in New York State. Markham Township was surveyed in 1793-94 (Champion 1979:7), and the Berczy Settlers received their grant in 1794 (Champion 1979:13). There were severe crop failures in 1795-96 and many settlers died or chose to return to New York State; however, many families remained in Markham Township (Champion 1979:16). Several other immigrant groups settled within Markham Township during the early 19th century, such as the French Emigrés, Pennsylvania Dutch, Irish and Scottish, and Americans. Because of the poor

condition of many of the early roads, settlement focused around rivers like the River Rouge and tributaries of the Don River (Robinson 1885:115).

The 1860 York County maps and the 1878 York County maps depict the owners or occupants of the various lots and concession of the Project area (Maps 7 and 8). Tables 4 and 5 list the owners/occupants and any notable features of each lot or part lot occurring with the Project area by segment.

Table 4: 1860 York County Map Lot and Concession Information Preliminary Preferred Route

Preliminary Preferred Route	City of Markham					
	Lot	Conc.	Name	Structure?	Portion	Notes
Phase 1 0	27	III	Widow Heise	No	NE ¼	
	28	III	John McCague	No	E ½	
	28	IV	Henry Lever	Yes	W ¼	House outside of PA
Segment 2 1	27	III	Widow Heise	No	NE ¼	
	27	III	Christopher Heise	No	SE ¼	
	26	III	Christopher Heise	Yes		House and shops outside of PA
Segment 2 2	18	III	Peter Wilmot	No	SW ⅛	Open roadway runs between part lots towards Concession II
	18	III	Mrs White	No	NE ⅛	
	19	III	William White	No	E Edge	
	20	III	Robert Grandy	No	E ½	
	21	III	Christian Henrick	Yes		House and saw mill outside of PA
	22	III	Christian Henrick	Yes	E ½	House outside of PA
	23	III	William Frisby	No	E ½	
	16	IV	Thomas Frisby	No	NW ¼	
	17	IV	William Jacques	No		
	18	IV	John Fierheller	No	W ½	
	19	IV	Thomas Gawly	No		
	20	IV	Hilery Clarkson Esq	Yes	N ½	Outside of PA
	20	IV	George Nichols	Yes	S½	House within PA
	21	IV	William Wonch	Yes	W ½	School house within PA
	22	IV	George Savage	No	NW ⅛ of W½	
	22	IV	Joseph Galloway	No	SC ⅛ of W½	
	22	IV	Peter Ramohr	No	NC ⅛ of W½	
	22	IV	John Payne	Yes	NW ⅛ of W½	House outside of PA
	23	IV	Hugh Robinson	Yes	SW ¼	House outside of PA
Segment 2 3	24	III	Abraham Horner	Yes	NE ¼	House outside of PA
	24	III	Widow Klink	No	SE ¼	
	25	III	Jason Stautenburgh	Yes	E ½	Store and Wesleyan Methodist church outside of PA
Segment 2 4	23	III	William Frisby	No	E ½	
	24	III	Widow Klink	No	SE ¼	
Segment 2 5	10	V	Jeremiah Sheridan	Yes	W ½	House outside of PA
	11	V	Peter Hummingdon	No	W ½	
Segment 2 6	13	V	Jacob Size	No	W ½	
	14	V	Anthony Size	Yes		Shops outside of PA
Segment 2 7	20	IV	Hilery Clarkson Esq	Yes	N ½	House outside of PA
	21	IV	William Wonch	Yes	W½	School house in Segment 2 2 of PA
	21	IV	Robert Grundy	No	E ½	
Disconnect 1	21	IV	William Wonch	Yes	W ½	School house in Segment 2 2 of PA
Disconnect 2	15	V	Charles McLean	No	E ½	
Disconnect 3	2	V	Townplot	Yes	E End	Townplot
Disconnect 4	11	VI	George Eckhardt	No	E ½	

Table 5: 1878 York County Map Lot and Concession Information Preliminary Preferred Route

Preliminary Preferred Route	City of Markham					
	Lot	Conc.	Name	Structure?	Portion	Notes
Phase 1 0	27	III	Edward McKenzie	No	NE ¼	House outside of PA
	28	III	John McCague	Yes		House outside of PA
	28	IV	Henry Cross	Yes	W ¼	Two houses outside of PA
Segment 2 1	27	III	Edward Mackenzie	Yes	NE ¼	House outside of PA
	27	III	Christopher Heise	No	SE ¼	
	26	III	Christopher Heise	Yes		Two houses with orchards, post office and shops outside of PA
Segment 2 2	18	III	Moses White	Yes	SE ½	House outside of PA but orchard within PA Open roadway runs between part lots towards Concession II
	18	III	Abraham Henrick	Yes	NE ⅛	House outside of PA Open roadway runs between part lots towards Concession II
	19	III	Illegible	Yes	SE Edge	House within PA
	19	III	William White	Yes	NE Edge	House within PA
	20	III	Edward Sanderson	Yes	E ½	Two houses Eastern house adjacent to PA
	21	III	Henry White	No	NE ¼	
	21	III	Jacob White	Yes	SE ¼	House outside of PA
	22	III	John Gormley	Yes	E ½	Structure in interior of lot House and orchard adjacent to PA
	23	III	John Foster	Yes	E ½	House outside of PA
	16	IV	Thomas Frisby	Yes	NW ¼	House outside of PA
	17	IV	Johnson Wilson	Yes		House outside of PA
	18	IV	William Calvert	Yes	W ½	House outside of PA Private roadway within PA
	19	IV	Jason and William Lundy	No	S ½	
	19	IV	Gauly Estate	Yes	N ½	House and orchard outside of PA
	20	IV	George Nichols	Yes	S ½	House outside of PA
	20	IV	Henry Brethaur	Yes	N ½	Two houses outside of PA
	21	IV	William Lawson	Yes	SW ¼	House and orchard outside of PA
	22	IV	George Nichol	No	NW ¼	House outside of PA School house within PA
	22	IV	Henry Jenning	Yes	SW ⅛ of W½	House adjacent to PA
	22	IV	Moses Gamble	Yes	⅛ of W½	House adjacent to PA
	22	IV	Unattributed Severance	Yes	Parcel at W Edge	House outside of PA
	22	IV	Joshua Ellerby	Yes	NW ¼	Two houses outside of PA
	23	IV	David Eyer	Yes	W ½	Two houses outside of PA
Segment 2 3	24	III	Thomas Klink	Yes	E ½	House and orchard, interior structure outside of PA
	25	III	Jason Stautenburgh	Yes	E ½	House and Wesleyan Methodist church outside of PA
Segment 2 4	23	III	John Foster	Yes	E ½	House outside of PA
	24	III	Thomas Klink	Yes	E ½	House and orchard, interior structure outside of PA
Segment 2 5	10	V	Hewlett Kennedy	Yes	W ½	House and orchard outside of PA
	11	V	George Amos	Yes	E ½ of W ½	House and orchard outside of PA
Segment 2 6	13	V	Jacob Size	Yes	W ½	House outside of PA
	14	V	Anthony Size	Yes		Shops outside of PA
Segment 2 7	20	IV	Henry Brethaur	Yes	N ½	Two houses outside of PA
	21	IV	William Lawson	Yes	W½	House outside of PA
	21	IV	Grundy Estate	No	E ½	
Disconnect 1	21	IV	William Lawson	Yes	SW ¼	House and orchard outside of PA
Disconnect 2	15	V	Marshall Crosby	Yes	E ½	House and orchard outside of PA
Disconnect 3	2	V	Townplot	Yes	E End	Grist mill within PA
Disconnect 4	11	VI	Eckhardt Estate	Yes	E ½	House and orchard outside of PA

Table 6: 1860 York County Map Lot and Concession Information Alternative Route

Alternative Route	City of Markham					
	Lot	Conc.	Name	Structure?	Portion	Notes
Phase 1 0	28	III	John McCague	No	E ½	
	28	IV	Henry Lever	Yes	W ¼	House and outside of PA
Segment 2 1	26	III	Christopher Heise	Yes	E ½	House and shops outside of PA
	27	III	Christopher Heise	No	SE ¼	
	27	III	Widow Heise	No	NE ¼	
	28	III	John McCague	Yes	E ½	
Segment 2 2	16	IV	Thomas Frisby	No	NW ¼	
	17	IV	William Jacques	No	Whole	
	16	III	James Walker	No	E ½	
	17	III	John Fierheller	No	E ½	
	18	III	Peter Wilmot	Yes	NW ¼ of E ½, S ½ of E ½ and SW ¾ of W ½	House outside of PA Open roadway within PA
	19	III	Jacob White	No	SE ¼ of E ½	
	19	III	Hiram White	Yes	NE ¼ of E ½	House outside of PA
	20	III	Robert Grandy	No	E ½	
	21	III	Christian Hendrick	Yes	Whole	Sawmill and house outside of PA
Segment 2 3	22	III	Christian Hendrick	Yes	S ½	House outside of PA
	23	III	William Frisby	No	E ½	
	24	III	Widow Klinck	No	SE ¼	Private roadway within PA
	24	III	Abraham Horner	No	NE ¼	Private roadway within PA

Table 7: 1878 York County Map Lot and Concession Information Alternative Route

Alternative Route	City of Markham					
	Lot	Conc.	Name	Structure?	Portion	Notes
Phase 1 0	28	III	John McCague	Yes	Whole	House outside of PA Private roadway within PA
	28	IV	Henry Cross	Yes	W ¼	Two houses outside of PA
Segment 2 1	26	III	Christopher Heise	Yes	E ½	Two houses with orchards and shops outside of PA Post office within PA
	27	III	Christopher Heise	No	SE ¼	
	27	III	Edward Mackenzie	Yes	NE ¼	House outside of PA
	28	III	John McCague	Yes		House outside of PA
Segment 2 2	16	IV	Thomas Frisby	Yes	NW ¼ of W ½	House outside of PA Private roadway within PA
	17	IV	Johnson Wilson	Yes		House, orchard and private roadway outside of PA
	16	III	Unnamed	Yes	NE Corner of Lot	House and orchard within PA
	16	III	Joseph Walker	Yes	Portion of E ½	House and orchard outside of PA
	17	III	Milton Fierheller	Yes	E ½	House outside of PA Orchard adjacent to PA
	18	III	Abraham Hendrick	Yes	S ½ of E ½	House outside of PA Open roadway through PA
	18	III	Peter Wilmot	No	NW ¼ of E ½	Orchard adjacent to PA
	19	III	George Nichols	Yes	S ½	House outside of PA
	20	III	Edward Sanderson	Yes	E ½	Two houses outside of PA
	21	III	Henry White	No	NE ¼	
	21	III	Jacob White	Yes	SE ¼	House outside of PA
Segment 2 3	22	III	John Gormley	Yes	E ½	Structure in interior of lot, house and orchard fronting Woodbine, all outside of PA
	23	III	John Foster	Yes	E ½	House and orchard outside of PA
	24	III	Thomas Klink	Yes	E ½	House and orchard, interior structure outside of PA

2.3.3 19th Century Transportation Routes

19th Avenue, Elgin Mills Road East, Woodbine Avenue, Major Mackenzie Drive East, 16th Avenue, Warden Avenue and Highway 7 are depicted as open on the 1860 and 1878 maps.

2.3.4 Historical Aerial Imagery Review

The available aerial historic mapping indicates that large portions of the Project area have been previous disturbed by roadway and residential construction (Maps 8-24). Historical aerial photographs demonstrate significant disturbance within a number of segments of the Project area including: Preliminary Preferred Route Phase 1, Segment 2.1, 2.2, 2.3 and 2.4 and Alternative Route Phase 1, Segment 2.1, 2.2 and 2.3.

Starting in 2009 the areas adjacent to Woodbine Avenue, Honda Boulevard, Bishop's Gate and Victoria Square Boulevard began to be intensively developed for residential and commercial use. Historical aerial photography from 2009 and 2012 depicts topsoil stripping and significant landscaping which has heavily disturbed the vast majority of the Project area in this area (Maps 8 and 9). At this time the Woodbine Avenue bypass and Honda Boulevard were built resulting in significant landscaping in these ROWs.

Starting in 2007 the area between the Woodbine Avenue bypass and Elgin Mills Road began to be intensively developed for residential and use. Historical aerial photography from 2007, 2009 and 2012 depicts topsoil stripping and significant landscaping which has heavily disturbed the entirety of the Project area in this area (Maps 10, 11 and 12). At this time the Woodbine Avenue bypass, Bishop's Gate, Livante Court, Helford Street, Prince of Wales Drive and Duke of York Street were built resulting in significant landscaping in these ROWs.

The area of the intersection of Woodbine Avenue and Victoria Square Boulevard witnessed significant landscaping as a result the alterations to the roadways for the Woodbine Avenue bypass. Historical aerial photography from 2007 and 2009 depicts topsoil stripping and significant landscaping which has heavily disturbed the Project area to the west of Victoria Square Boulevard between Woodbine Avenue and Murison Drive (Maps 13 and 14).

Starting in 1995 the areas on either side of Markland Avenue between Russell Dawson Road and Woodbine Avenue witnessed topsoil stripping and significant landscaping which has heavily disturbed the vast majority of the Project area in this area. At this time the Markland Avenue was built resulting in significant landscaping in the ROW (Maps 15-22).

In 2009 the areas on either side of Woodbine Avenue, Betty Roman Boulevard and Prince Regent Street witnessed topsoil stripping and significant landscaping which has heavily disturbed the entirety of the Project area in these areas. At this time the sections of Woodbine Avenue, Betty Roman Boulevard and sections of Prince Regent Street were built resulting in significant landscaping in these ROWs (Maps 23 and 24).

3.0 STAGE 1 PROPERTY INSPECTION

As the Project area contained several features signalling archaeological potential, as well as several features of extensive disturbance, a Stage 1 property inspection was conducted to evaluate the current conditions of the sections of the Project area associated with the Preliminary Preferred Route to determine if any areas of archaeological potential remained intact within this portion of Project area. The Alternative Route was not subject to a Stage 1 field review at this time. This review was restricted to a 50 m wide area centred on the existing ROW.

The property inspection was conducted on January 17, 2019, in overcast and cool weather conditions. The weather conditions allowed for good visibility for the inspection of the surface features. The field review involved the recording and photo-documentation of the field conditions.

Preliminary Preferred Route - Phase 1.0 (Map 25; Images 1-11)

The field review of Phase 1 started at 101 Honda Boulevard and continued south on Honda Boulevard to the intersection with Woodbine Avenue before continuing north on Woodbine Avenue.

101 Honda Boulevard is occupied by an Enbridge facility. The portion of 101 Honda Boulevard within the Project area includes a parking lot bordered by a treeline on its southern end and a narrow section of fallow agricultural field (Images 1 and 2). There is no indication of buried utilities in this section of field.

Honda Boulevard is a four-lane roadway with manicured lawn shoulders and sidewalks along both sides of the ROW. The eastern part of the Honda Boulevard ROW includes a narrow strip of manicured lawn between the roadway and the sidewalk which contains light standards with buried electrical cables (Image 3). Beginning at 101 Honda Boulevard, the land on the eastern side of the ROW east of the sidewalk is occupied by a fallow agricultural field (Image 4). The eastern side of the ROW is slightly elevated relative to the fallow agricultural field to the east. The western part of the Honda Boulevard ROW includes a manicured lawn shoulder which contains buried water and gas lines as well as light standards with buried electrical cables (Image 5). North of Mobis Drive, the ROW contains an extensively manicured lawn area to the west of the sidewalk. South of Mobis Drive, the land on the western side of the ROW west of the sidewalk is occupied by an agricultural field. The western side of the ROW is level with the agricultural field to the west (Image 6).

Woodbine Avenue is a four-lane paved roadway with manicured lawn shoulders and sidewalks along both sides of the ROW. The western part of the Woodbine Avenue ROW between Honda Boulevard and Victoria Square Boulevard includes a strip of manicured lawn between the sidewalk and the roadway contains light standards with buried electrical cables running between each. This section of the ROW has been built up and is

considerably higher than the undeveloped land to the west (Image 7). North of the intersection with Victoria Square Boulevard the sidewalk ends and the entire shoulder is taken up with manicured lawn. This section of manicured lawn contains light standards with buried electrical cables, as well as buried telecommunications, water and gas lines (Image 8). The eastern part of the Woodbine Avenue ROW includes a strip of manicured lawn between the sidewalk and the roadway. This strip of manicured lawn contains light standards with buried electrical cables running between each. Immediately to the east of the sidewalk there is a buried gas line (Image 9). Between the residential houses on Living Crescent and Victoria Square Boulevard the ROW has been built up and is considerable higher than the undeveloped areas to the east (Image 10). North of Victoria Square Boulevard the sidewalk ends and the entire shoulder is occupied by a shallowly ditched manicured lawn bounded by a fence that includes light standards with buried electrical cables running between each. North of the fence the ROW has been built up and is considerable higher than the undeveloped areas to the east (Image 11).

Preliminary Preferred Route - Segment 2.1 (Map 25 and 26; Images 12-15)

The field review of Segment 2.1 started at the intersection with Woodbine Avenue and Honda Boulevard and continued south to the intersection of Woodbine Avenue and Elgin Mills Road.

Woodbine Avenue is a four-lane paved roadway with manicured lawn shoulders and sidewalks along both sides of the ROW. The western side of the Woodbine Avenue ROW contains a sidewalk and a narrow strip of extensively manicured lawn. Between Honda Boulevard and Lord Melborne the strip of manicured lawn contains a buried sewer as well as light standards with buried electrical cables. This section of the Woodbine Avenue ROW has been built up relative to the lower lying land to the west (Image 12). South of Lord Melborne Street the strip of manicured lawn on the western side of the Woodbine Avenue ROW contains light standards with buried electrical cables running between each. This section of the ROW is level with the lands to the west (Image 13). The eastern side of the Woodbine Avenue ROW contains a sidewalk and a narrow strip of extensively manicured lawn. Between Bishops Gate and Prince of Wales Drive the narrow strip of extensively manicured lawn contains buried water and sewers as well as light standards with buried electrical cables running between each (Image 14). South of Prince of Wales Drive the narrow strip of extensively manicured lawn containing buried water and sewers as well as light standards with buried electrical cables running between each (Image 15).

Preliminary Preferred Route - Segment 2.2 (Map 27-31 and 33; Images 16-34)

The field review of Segment 2.2 started at the intersection of Donald Buttress Boulevard/Vine Cliff Boulevard and Victoria Square Boulevard and continued south on to Woodbine Avenue before turning east on to Roddick Road and terminated at the intersection with Calvert Road.

Victoria Square Boulevard is a two-lane paved roadway with a narrow, gravelled shoulder on both sides. The western side of Victoria Square Boulevard between Donald Buttress Boulevard and Murison Drive is occupied by residential houses, south of Murison the land is undeveloped. The eastern side of Victoria Square Boulevard between Donald Buttress Boulevard and Murison Drive is undeveloped. South of Murison the land has been partially developed but significant greenspace remains. The western side of the Victoria Square Boulevard ROW south of Donald Buttress Boulevard contains a gravelled shoulder and a ditched lawn area that slopes up to the sidewalk. This area of lawn contains buried water and sewer utilities as well as poles for suspended electrical cables (Image 16). Between Murison Drive and the intersection with Woodbine Avenue the ROW contains a deeply ditched grassed area as well as poles for suspended electrical cables (Image 17). The eastern side of the Victoria Square Boulevard ROW south of Donald Buttress Boulevard contains a gravelled shoulder and a grassed slope leading down to the undeveloped grassed area to the east (Image 18). This sloped area contains poles for suspended electrical cables but no buried utilities. The grassed area at the base of the slope is not obviously disturbed. In front of the Victoria Square Montessori school an artificial large berm with associated ditch and sewer exists immediately adjacent to the gravelled shoulder (Image 19).

Woodbine Avenue is a four-lane paved roadway with a narrow, manicured lawn shoulder and sidewalk on both sides. The eastern side of the Woodbine Avenue ROW north of Major Mackenzie Drive contains a narrow strip of ditched lawn between the roadway and the sidewalk and a grassed slope leading down from the sidewalk to the undeveloped lands to the east. The narrow strip of manicured lawn contains light standards with buried electrical cables (Image 20). The western side of the Woodbine Avenue ROW north of Major Mackenzie Drive contains a narrow strip of ditched lawn between the roadway and the sidewalk and a grassed slope leading down from the sidewalk to an artificial pond and undeveloped lands. The narrow strip of manicured lawn contains light standards with buried electrical cables running between each. A grassed slope leads down from the sidewalk to the artificial pond (Image 21). South of the pond, there is a buried sewer and a bridge over a small tributary of the Berczy Creek which drains the pond. South of the bridge there is a grassed slope which leads down to a treed area. This treed area is not obviously disturbed. The northwestern corner of the intersection of Woodbine Avenue and Major Mackenzie Drive is a manicured lawn that contains buried electrical cables near to the sidewalk and poles for suspended electrical cables. Beyond the area immediately adjacent to the sidewalk the manicured lawn is not obviously disturbed (Image 22)

The western side of the Woodbine Avenue ROW between Major Mackenzie Drive and Oakford Drive contains a strip of lawn between the roadway and the sidewalk. The strip of lawn between the roadway and the sidewalk contains poles for suspended electrical cables but no indication of buried utilities (Image 23). This section of manicured lawn is not obviously disturbed. The eastern side of the Woodbine Avenue ROW between Major Mackenzie Drive and Personna Boulevard contains a sidewalk with a grassed area to the east. The area south of the intersection with Major Mackenzie Drive and east of the sidewalk is manicured lawn that contains buried electrical cables near to the sidewalk and

poles for suspended electrical cables. This section of manicured lawn is not obviously disturbed (Image 24). The remainder of the eastern side of the ROW between Major Mackenzie Drive and Personna Boulevard is deeply ditched and contains buried telecommunications and sewer as well as poles for suspended electrical cables (Image 25)

The western side of the Woodbine Avenue ROW between Oakford Drive and Hillmouth Road contains a strip of lawn between the roadway and the sidewalk. The strip of lawn between the roadway and the sidewalk contains poles for suspended electrical cables but no indication of buried utilities (Image 26). This section of manicured lawn is not obviously disturbed. The eastern side of the Woodbine Avenue ROW between Personna Boulevard and Roddick Road contains a strip of lawn between the roadway and the sidewalk. The strip of lawn between the roadway and the sidewalk contains poles for suspended electrical cables and a sewer immediately adjacent to the sidewalk but no indication of other buried utilities (Image 27 and 28). This entirety of this section of manicured lawn is not obviously disturbed.

Rodick Road is a four-lane paved roadway with narrow manicured lawn shoulder and sidewalk on both sides. Roddick Road runs east-west through a residential neighbourhood before turning north-south as it travels towards Calvert Road. The entirety of the manicured lawn shoulder on the north/east side of the Roddick Road ROW between Woodbine Avenue and Calvert Road contains buried water, telecommunications, gas lines and electrical cables (Images 29, 30 and 31). The entirety of the of the manicured lawn shoulder on the south/west side of the Roddick Road ROW between Woodbine Avenue and Calvert Road contains buried sewer, and telecommunication lines as well as light standards with buried electrical cables running between each. The area to the west of the southward curve is heavily landscaped resulting in a steeply sloped manicured lawn leading away from the sidewalk (Images 32, 33 and 34).

In many cases on either side of Roddick Road the residential structures and associated landscaping extend up to the edge of the sidewalk. However, in other cases sizable areas of manicured lawn exist between the sidewalk and the homes. These areas of manicured lawn beyond the sidewalk associated with the residential homes are not obviously disturbed.

Preliminary Preferred Route - Segment 2.3 (Map 34; Images 35-40)

The field review of Segment 2.3 started on Woodbine Avenue across from Tucciarone Court and continues south before turning east onto Betty Roman Boulevard and continued to a point west of Reflection Road.

Woodbine Avenue is a four-lane paved roadway with manicured lawn shoulders and sidewalks on both sides of the ROW. Buried electrical cables run between the light standards which exist between the sidewalk and the roadway (Image 35). The Woodbine Avenue ROW has been built up relative to the lower lying land to the west (Image 36). The northwest corner of the intersection of Woodbine Avenue and Betty Roman Boulevard

contains a concrete underpass for a watercourse which flows southeast towards the open area south of Betty Roman Boulevard. The ROW on the western side of Woodbine Avenue is considered extensively disturbed and does not retain archaeological potential. The eastern side of the Woodbine Avenue ROW contains a sidewalk and an extensively manicured lawn area. The lawn area contains buried gas, sewer and electrical cables and is considered extensively disturbed and does not retain archaeological potential (Image 37).

Betty Roman Boulevard is a two-lane paved roadway with manicured lawn shoulders and sidewalks on either side. The northern side of the Betty Roman Boulevard ROW contains buried electrical cables which run between the light standards which exist in the manicured lawn shoulder between the sidewalk and the roadway (Image 38). The southern side of the Betty Roman Boulevard contains an artificial slope leading down to the watercourse which flows from the northwest on the western side of Woodbine Avenue. The area at the foot of this slope in the vicinity of the watercourse is considered low lying and wet (Image 39). The northern side of the Betty Roman Boulevard ROW contains buried water and electrical cables which run between the light standards which exist in the manicured lawn shoulder between the sidewalk and the roadway (Image 40). Residential structures extend right up to the northern edge of the sidewalk.

Preliminary Preferred Route - Segment 2.4 (Map 34; Images 41-43)

The field review of Segment 2.4 started north of the intersection of Prince Regent Street and Betty Roman Boulevard continued to the south beyond the intersection across the bridge.

This section of the Price Regent Street contains a bridge over a small watercourse. Prince Regent Street is a two-lane paved roadway with manicured lawn shoulders on both sides of the ROW. Buried electrical cables run along the eastern and western sides of the Price Regent Street ROW between the light standards and a sewer exists at the northwestern corner of the intersection (Image 41 and 42). Slopes leading down to the Otter Trail Creek from Betty Roman Boulevard and from Prince Regent Street are products of recent landscaping activity related to bridge and subdivision construction and are considered extensively disturbed. The area below the bridge in the vicinity of the watercourse is considered low lying and wet (Image 43).

Preliminary Preferred Route - Segment 2.5 (Map 36; Images 44-46)

The field review of Segment 2.5 started north of the intersection Village Parkway and Highway 7 and continued south beyond the intersection.

Village Parkways is a three-lane paved roadway with narrow manicured lawn shoulders and sidewalks on both sides of the ROW. Buried telephone cables, water, gas lines are located along the western side of the ROW (Image 44). The eastern side of the ROW has been heavily disturbed by residential construction and also contains buried water and electrical cables (Image 45). Two very small areas of lawn exist to the south of the

Highway 7 and both of these contain buried electrical cables and would have been heavily impacted during the construction of the adjacent buildings (Image 46). The properties on either side of Village Parkway consist of heavily manicured residential and commercial properties and the topography is generally flat.

Preliminary Preferred Route - Segment 2.6 (Map 37; Images 47-52)

The field review of Segment 2.6 started at the intersection of Village Parkway and Wentworth Court and continued north to the intersection with Carleton Road.

Village Parkway is a two-lane paved roadway with narrow strips of manicured lawn between the roadway and the sidewalks on both sides. The western side of the Village Parkway ROW includes a narrow strip of manicured lawn between the roadway and the sidewalk with residential lawns to the west of the sidewalk. Across from Wentworth Court in front of the Unionville Presbyterian Church in the narrow strip of manicured lawn there is buried telecommunications and electrical cables. Unionville Presbyterian Church is a relatively recent church and there are no associated cemeteries in the area. South of the sidewalk in the church lawn there is a buried sewer and electrical utilities but the area immediately in front of the church is not obviously disturbed (Image 47). On either side of the intersection with Paget Place the strips of manicured lawn between the roadway and the sidewalk is not obviously disturbed (Image 48). To the west of these strips of lawn there are buried electrical and telecommunications utilities up to Carleton Road (Image 49). The southwestern corner of the intersection of Village Parkway and Carleton Road is an artificially built up area (Image 50). The east side of the Village Parkway ROW includes a narrow strip of manicured lawn between the roadway and the sidewalk with residential lawns to the east of the sidewalk. North of Wentworth Court the strip of manicured lawn west of the sidewalk contains buried telecommunications, water and electrical cables (Images 51 and 52). These buried utilities appear to follow the course of the sidewalk fairly closely and impact to the area adjacent to the roadway appears minimal. In many cases, on either side of Village Parkway, sizable areas of manicured lawn exist between the sidewalk and the homes. These areas of manicured lawn beyond the sidewalk associated with the residential homes are not obviously disturbed.

Preliminary Preferred Route - Segment 2.7 (Map 38 and 39; Images 53-60)

The field review of Segment 2.7 started on Major Mackenzie Drive at the intersection with Walsingham Court and continued west to the intersection with Cachet Parkway.

Major Mackenzie Drive is a four-lane paved roadway with sidewalks and variably artificial sloped grassed shoulders along both sides of the ROW. The north side of Major Mackenzie Drive ROW includes a paved sidewalk and areas of artificial sloping terrain. Immediately across from Walsingham Court a narrow strip of manicured lawn exists between the sidewalk and the roadway. North of the sidewalk a hydro pole connects the suspended electrical cables on the south side of Major Mackenzie to the northern side of

the road. On the northern side of the road the electrical utility moved underground to run between light standards that exist north of the sidewalk. A level area exists in the area of the suspended electrical cable connection that is not obviously disturbed (Image 53). To the west of this level area there is an artificial slope (Image 54). Beyond this artificial slope in the western half of the Segment 2.7 there is an area only a slight slope which is not obviously disturbed (Image 55). Across from Cachet Parkway the ROW north of the sidewalk is a steep artificial slope (Image 56). The south side of Major Mackenzie Drive ROW includes a paved sidewalk and artificial sloping terrain. The artificially sloped grassed areas to the south of the sidewalk contain suspended electrical utilities running between hydro poles, street lights as well as buried telecommunications and electrical cables. A small section of lawn east of Walsingham Court contains buried hydro utilities and is ditched near the roadway but an area of lawn to the south of the ditch is not obviously disturbed (Image 57). In the area west of Walsingham Court the land slopes down towards Major Mackenzie Drive but at the approximate halfway point of Segment 2.7 the land begins to steeply slope away from Major Mackenzie Drive (Images 58-60).

Preliminary Preferred Route - Disconnect 1 (Map 39; Images 61 and 62)

The field review of Disconnect 1 started at the intersection of Hazelton Avenue and Major Mackenzie Drive and continued north on Hazelton Avenue.

Hazelton Avenue is a two-lane paved roadway with manicured lawn shoulders and sidewalks on both sides of the ROW. The properties on either side of Hazelton consist of heavily manicured residential properties. The grass shoulder on the western side of the ROW contains buried electrical cables and has been extensively manicured (Image 61). The grass shoulder on the eastern side of the Row contains buried water and electrical cables and has been extensively manicured (Image 62).

Preliminary Preferred Route - Disconnect 2 (Map 40)

Disconnect 2 is located on the southern side of 16th Avenue, across from Yorkton Boulevard. 16th Avenue is a divided four-lane paved roadway with manicured lawn shoulders and sidewalks on both sides of the ROW. The ROW in this area has buried and above ground utilities and has been extensively disturbed. The lands to the south of the ROW in this area are grassed and treed and generally slope down to the watercourse.

Preliminary Preferred Route - Disconnect 3 (Map 41; Images 63-65)

The field review of Disconnect 3 started in the parking lot off of Carleton Road and continued into the woodlot to the east. The western half of the Disconnect 3 Project area contains a parking lot and small sections of manicured lawn which would have been impacted by construction of the parking lot (Image 63). The area to the east of the parking lot is an undeveloped woodlot (Image 64 and 65). A buried gas line is located along the eastern side of the parking lot adjacent to the woodlot.

Preliminary Preferred Route - Disconnect 4 (Map 42; Images 66-69)

The field review of Disconnect 4 started on the east side of the pathway north of Highway 7 and continued into the woodlot. The Rouge River flows north through the Disconnect 4 Project area to the northeast where it drains Waldon Pond. The southern half of the Disconnect 4 Project area is occupied by a bridge portion of Highway 7 which straddles the Rouge River (Image 66). The area beneath Highway 7 contains a gravelled footpath and concrete footings of the bridge (Image 67). The western and eastern ends of the Project area contain a steep built up area associated with construction of the Highway 7 bridge (Image 68). The flat areas immediately to the north, east and west of the Rouge River are not obviously disturbed (Image 69).

The results of our Stage 1 archaeological assessment, as well as the location and orientation of report photographs are presented on Maps 25 – 42. As the proponent mapping was preliminary and used for discussion purposes (Map 3), no attempt was made to present the Stage 1 results on the proponent mapping.

Table 8: Documentary Records

Field Notes and Field Maps	Dated January 17th, 2019
Photo Catalogue	January 17th (238 digital photographs)
Location of Records	Timmins Martelle Heritage Consultants Inc., @ the Museum of Ontario Archaeology, 1600 Attawandaron Road, London, Ontario N6G 3M6

4.0 ANALYSIS AND CONCLUSIONS

As noted in Section 2.1, the Province of Ontario has identified numerous factors that signal the potential of a property to contain archaeological resources. The Stage 1 background study included a review of current land use, historic and modern maps, registered archaeological sites and previous archaeological studies, past settlement history for the area and a consideration of topographic and physiographic features, soils and drainage. According to the map-based review and background research, potential for the discovery of archaeological sites is indicated by the proximity (within 300 m) to:

1) watercourses (Rouge River, Berczy Creek, Bruce Creek, Eckhardt Creek and various small unnamed tributaries and ponds);
2) well-drained soils (Pontypool sandy loam, Berrien sandy loam and Cashel clay);
3) areas of 19th century settlement;
4) mapped 19th century thoroughfares (19th Avenue, Elgin Mills Road East, Woodbine Avenue, Major Mackenzie Drive East, 16th Avenue, Warden Avenue and Highway 7); and
5) previously identified archaeological sites (AlGu-463, AlGu-457, AlGu-380, AlGu-379, AlGu-306, AlGu-5, AlGu-304, AlGu-303, AlGu-302, AlGu-301, AlGu-300, and AlGu-237)

Preliminary Preferred Route - Phase 1

In addition to numerous buried utilities and obvious signs of roadway construction related disturbance, a review of historical aerial photography demonstrates that both sides of the Honda Boulevard and Woodbine Avenue ROW within Phase 1 are extensively disturbed. Furthermore, portions of this Project area overlap with an area cleared by a previous archaeological assessment (AA 2008). The registered archaeological site within this Project area (AlGs-379) was completely excavated and is of no further archaeological concern. As such, this Project area should be considered free of archaeological concern and no further assessment is recommended.

Alternative Route - Phase 1

In addition to numerous buried utilities and obvious signs of roadway construction related disturbance, a review of historical aerial photography demonstrates that both sides of the Honda Boulevard and Woodbine Avenue ROW within Phase 1 are extensively disturbed. Furthermore, portions of this Project area overlap with an area cleared by a previous archaeological assessment (AA 2008). The registered archaeological site within this Project area (AlGs-379) was completely excavated and is of no further archaeological concern. As such, this Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.1

In addition to numerous buried utilities and obvious signs of construction related disturbance, a review of historical aerial photography demonstrates that both sides of the Woodbine Avenue ROW within Segment 2.1 are extensively disturbed. Furthermore, portions of this Project area overlap with an area cleared by a previous archaeological assessment (AA 2008). As such, this Project area should be considered free of archaeological concern and no further assessment is recommended.

Alternative Route - Segment 2.1

In addition to numerous buried utilities and obvious signs of construction related disturbance, a review of historical aerial photography demonstrates that both sides of the Woodbine Avenue ROW within Segment 2.1 are extensively disturbed. Furthermore, portions of this Project area overlap with an area cleared by a previous archaeological assessment (AA 2008). As such, this Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.2

Numerous buried utilities, ditches, berms and obvious signs of disturbance related to the construction of residential houses and the roadway indicate that approximately half of the Victoria Square Boulevard ROW within Segment 2.2 is extensively disturbed and does not have archaeological potential. The eastern side of the Victoria Square Boulevard

ROW north of Victoria Square Montessori are not obviously disturbed and retain archaeological potential.

Numerous buried utilities and obvious signs of disturbance related to the construction of the roadway indicate that a large portion of the Woodbine Avenue ROW within Segment 2.2 is extensively disturbed and does not have archaeological potential. The western side of Woodbine Avenue from immediately north of Major Mackenzie Drive to the intersection with Hillmount Road contains some utilities but is not obviously disturbed. The northern half of the eastern side of Woodbine Avenue between Major Mackenzie Drive and Personna Boulevard and the area between Personna Boulevard and Rodick Road is not obviously disturbed.

The entirety of the manicured lawn shoulder on either side of the Roddick Road ROW between Woodbine Avenue and Calvert Road contains buried water, telecommunications, gas lines and electrical cables. The sections of manicured lawn between the sidewalk and the roadway on either side of Roddick Road are considered to be extensively disturbed and do not have archaeological potential. In many cases, on either side of Roddick Road between Woodbine Avenue and Calvert Road, sizable areas of manicured lawn exist between the sidewalk and the homes. These areas of manicured lawn beyond the sidewalk associated with the residential homes are not obviously disturbed.

Portions of this Project area overlap with areas cleared by previous archaeological assessments (Archeoworks 2001; ASI 2006, MIA 1987, 1991). As such, there areas should be considered free of archaeological concern and no further work is recommended.

These not obviously disturbed portions of the Segment 2.2 Project area will require Stage 2 survey.

Alternative Route - Segment 2.2

The majority of the lands within the Alternative Route – Segment 2.2 Project area are extensively disturbed and do not retain archaeological potential. Portions of this Project area overlap with areas cleared by previous archaeological assessments (Archeoworks 2001; ASI 2006, MIA 1987, 1990, 1991). The north side of Calvert Road east of Woodbine Avenue contains a number of strips of manicured lawn which are not obvious disturbed. The south side of Calvert Road east of Woodbine Avenue contains a number of small sections of manicured lawn in the area of Townson Road which are not obviously disturbed. These not obviously disturbed areas retain archaeological potential and would require Stage 2 survey.

Preliminary Preferred Route - Segment 2.3

Numerous buried utilities and obvious signs of construction related disturbance indicate that both sides of the Woodbine Avenue and Betty Roman Boulevard ROWs within Segment 2.3 are extensively disturbed and do not have archaeological potential. A

small area to the south of Betty Roman Boulevard is low lying and wet and does not have archaeological potential. Furthermore, portions of this Project area overlap with areas cleared by a previous archaeological assessment (ASI 2001, 2006). The registered archaeological site adjacent to this Project area (AlGu-303) was completely excavated and is of no further archaeological concern. As such, this Project area should be considered free of archaeological concern and no further assessment is recommended.

Alternative Route - Segment 2.3

In addition to numerous buried utilities and obvious signs of construction related disturbance, a review of historical aerial photography demonstrates that both sides of the Woodbine Avenue ROW within Segment 2.3 are extensively disturbed. Furthermore, portions of this Project area overlap with an area cleared by a previous archaeological assessment (ASI 2001, 2006). As such, this Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.4

Numerous buried utilities and obvious signs of construction related disturbance indicate that both sides of the Prince Regent Street ROW within Segment 2.4 are extensively disturbed and do not have archaeological potential. Small areas to the east and west of the Prince Regent Street bridge over the watercourse are low lying and wet and do not have archaeological potential. Furthermore, portions of this Project area overlap with areas cleared by a previous archaeological assessment (ASI 2001, 2006). The registered archaeological sites adjacent to and within this Project area (AlGu-300 and AlGu-304) were completely excavated and is of no further archaeological concern. As such, this Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.5

Numerous buried utilities and obvious signs of construction related disturbance indicate that both sides of the Village Parkway ROW within Segment 2.5 are extensively disturbed and do not have archaeological potential. As such, this Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.6

The western side of the Village Parkway ROW includes a narrow strip of manicured lawn between the roadway and the sidewalk with residential lawns to the west of the sidewalk. Across from Wentworth Court in front of the Unionville Presbyterian Church in the narrow strip of manicured lawn there is buried telecommunications and electrical cables. South of the sidewalk in the church lawn there is a buried sewer and electrical utilities but the area immediately in front of the church is not obviously disturbed (Image 47). On either side of the intersection with Paget Place the strips of manicured lawn

between the roadway and the sidewalk are not obviously disturbed (Image 48). To the west of these strips of lawn there are buried electrical and telecommunications utilities up to Carleton Road (Image 49). The northwestern corner of the intersection of Village Parkway and Carleton Road is an artificially built up area (Image 50).

The eastern side of the Village Parkway ROW includes a narrow strip of manicured lawn between the roadway and the sidewalk with residential lawns to the east of the sidewalk. North of Wentworth Court the strip of manicured lawn west of the sidewalk contains buried telecommunications, water and electrical cables (Images 51 and 52). These buried utilities appear to follow the course of the sidewalk fairly closely and impact to the area adjacent to the roadway appears minimal. In many cases, on either side of Village Parkway, sizable areas of manicured lawn exist between the sidewalk and the homes. These areas of manicured lawn beyond the sidewalk associated with the residential homes are not obviously disturbed.

The portions manicured lawn of the Village Parkway ROW within Segment 2.6 that contain buried utilities have been extensively disturbed and do not retain archaeological potential.

The areas of manicured lawn on west side of the ROW immediately east of the Unionville Presbyterian Church and to the strip of manicured lawn between the sidewalk and the roadway the north and south of Paget Place are not obviously disturbed and retain archaeological potential and would require Stage 2 survey. The areas of manicured lawn west of the sidewalk on the east side of the ROW that are closer to the roadway are not obviously disturbed and retain archaeological potential and would require Stage 2 survey. Numerous areas of manicured lawn beyond the sidewalk associated with the residential homes on either side of Village Parkway are not obviously disturbed and retain archaeological potential and would require Stage 2 survey.

Preliminary Preferred Route - Segment 2.7

The majority of the Major Mackenzie Drive ROW is extensively disturbed by soil alterations related to landscaping on either side of Major Mackenzie Drive. There is a small section of manicured lawn south of Major Mackenzie Drive to the east of Walsingham Court that contains a small ditch but is otherwise not obviously disturbed. The northern side of Major Mackenzie Drive contains two generally level areas which are not obviously disturbed and retain archaeological potential. These portions of the Project area will require Stage 2 survey.

Preliminary Preferred Route - Disconnect 1

The Disconnect 1 Project area includes the paved sidewalk, lawn shoulder and heavily manicured residential properties on either side of Hazelton Avenue. Both sides of Hazelton Avenue within the Disconnect 1 Project area extensively disturbed by buried

utilities and residential development. As such, this Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Disconnect 2

16th Avenue is a four-lane paved roadway with a manicured lawn shoulder, sidewalk and paved bus stop on the south side of the ROW. The manicured lawn shoulder on the southern side of the ROW contains above ground electrical cables but is not obviously disturbed. The area to the south of the sidewalk is a woodlot.

The paved sidewalk and the bus stop are considered extensively disturbed and do not retain archaeological potential. The manicured lawn shoulder south of 16th Avenue and the woodlot in the southern half of the Disconnect 2 Project area retains archaeological potential and would require Stage 2 survey.

Preliminary Preferred Route - Disconnect 3

The western half of the Disconnect 3 Project area contains a parking lot which is extensively disturbed and does not retain archaeological potential. The woodlot east of the parking lot retains archaeological potential and would require Stage 2 survey.

Preliminary Preferred Route Disconnect 4 - Highway 7

The parts of the Disconnect 4 Project area containing the Highway 7 bridge, the gravelled pathway and the slopes up to the bridge are extensively disturbed and do not retain archaeological potential. The flat, grassed areas adjacent to the Rouge River retain archaeological potential. These portions of the Project area will require Stage 2 survey.

5.0 RECOMMENDATIONS

Based on the information compiled in the background study and the property inspection, the following recommendations are made:

Preliminary Preferred Route - Phase 1

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Alternative Route - Phase 1

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.1

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Alternative Route - Segment 2.1

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.2

The majority of this Project area is free of archaeological concern; however, there are numerous areas that still have archaeological potential and require Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval. The areas that require Stage 2 survey include:

- Victoria Square Boulevard – eastern ROW across from Murison Drive;
- Woodbine Avenue – western ROW north of Major Mackenzie Drive;
- Woodbine Avenue – eastern and western ROW south of Major Mackenzie Drive;
- Woodbine Avenue – eastern and western ROW north of Rodick Road; and
- Rodick Road – eastern and western ROW, various parcels between Woodbine Avenue and Calvert Road.

Alternative Route - Segment 2.2

The majority of this Project area is free of archaeological concern; however, there are numerous areas that still have archaeological potential and require Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval. The areas that require Stage 2 survey include:

- Calvert Road – northern ROW between of Woodbine Avenue and Townson Road; and,
- Calvert Road – southern ROW west of Townson Road.

Preliminary Preferred Route - Segment 2.3

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Alternative Route - Segment 2.3

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.4

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.5

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Segment 2.6

The majority of this Project area is free of archaeological concern; however, there are numerous areas that still have archaeological potential and require Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval. The areas that require Stage 2 survey include:

- Village Parkway – eastern and western ROW, various parcels between Carleton Road and Wentworth Court.

Preliminary Preferred Route - Segment 2.7

The majority of this Project area is free of archaeological concern; however, there are numerous areas that still have archaeological potential and require Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval. The areas that require Stage 2 survey include:

- Major Mackenzie Drive – northern ROW, two segments west of Walsingham Court; and
- Major Mackenzie Drive – southern ROW east of Walsingham Court.

Preliminary Preferred Route - Disconnect 1

This Project area should be considered free of archaeological concern and no further assessment is recommended.

Preliminary Preferred Route - Disconnect 2

The northern portion of this Project area is free of archaeological concern; however, the southern portion still has archaeological potential and requires Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval.

Preliminary Preferred Route - Disconnect 3

The western portion of this Project area is free of archaeological concern; however, the eastern portion still has archaeological potential and requires Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval.

Preliminary Preferred Route - Disconnect 4

The majority of this Project area is free of archaeological concern; however, the there are areas in the northern portion that still have archaeological potential and require Stage 2 survey. As these lands are non-ploughable, the Stage 2 survey should consist of a standard test pit survey at a 5 m transect interval.

If the Project area is changed to incorporate lands not covered within this assessment, then additional archaeological assessment may be required.

These recommendations are subject to the conditions laid out in Section 7.0 of this report and to the Ministry of Tourism, Culture and Sport's review and acceptance of this report into the provincial registry.

6.0 SUMMARY

Enbridge is proposing the Low-Carbon Energy Project to service an urban residential and commercial community in Markham, Ontario. All proposed segments of pipe are to be installed within the existing municipal right of way. The natural gas main installation project, described below, is divided into a Preliminary Preferred Route and an Alternative Route. The Preliminary Preferred Route is divided into Phases 1 and 2 which is further divided into Segments 2.1.-2.7. An Alternative Route was also established and considered in this assessment. The Alternative Route is divided into Phase 1 and 2 which is further divided into Segments 2.1-2.3. It was determined, in discussions with the proponent, that the Project area should be considered to be the entire ROW along the length of the proposed routes and an assumed 50 m wide area centred on them which represents an assumed work area.

A Stage 1 background study was undertaken for the Project area associated with the Preliminary Preferred Route and the Alternative Route proposed pipeline corridors in Markham, Ontario. The background research indicated that the Project area was in proximity to features signalling archaeological potential, namely: 1) watercourses (Rouge River, Berczy Creek, Bruce Creek, Eckhardt Creek and various small unnamed tributaries and ponds); 2) well-drained soils (Pontypool sandy loam, Berrien sandy loam and Cashel clay); 3) areas of 19th century settlement; 4) mapped 19th century thoroughfares (19th Avenue, Elgin Mills Road East, Woodbine Avenue, Major Mackenzie Drive East, 16th Avenue, Warden Avenue and Highway 7); 5)previously identified archaeological sites (AlGu-463 (Peach 2), AlGu-457 (Glendower 3), AlGu-380 (Rice), AlGu-379 (McCague),

AlGu-306 (Carlton Creek Northwest), AlGu-5 (Carlton Creek Northeast), AlGu-304 (Carlton Creek), AlGu-303 (Golden Tower), AlGu-302 (Dietzmann), AlGu-301 (Carver), AlGu-300 (Klinck) and AlGu-237). Therefore, based on the background review, some portions of the Project area have potential for either First Peoples or 19th century sites. As the Project area contained several features signalling archaeological potential, as well as several features of extensive disturbance, a Stage 1 property inspection was conducted to evaluate the current conditions of the Project area associated with the Preliminary Preferred Route and determine if any areas of archaeological potential remained intact within the Project area. The Alternative Route was not subject to a property inspection.

Overall, the majority of the Project area is of low archaeological potential and does not require additional archaeological assessment; however, there are many small areas that retain archaeological potential and that require Stage 2 survey.

7.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Ministry of Tourism, Culture and Sport 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 Ministry of Tourism, Culture and Sport, 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.

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*.

Should previously undocumented (i.e., unknown or deeply buried) archaeological resources be discovered, there 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*. Further, archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the *Ontario Heritage Act* and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.

The *Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33* requires that any person discovering human remains must notify the police or coroner and the Registrar of Burial Sites, War Graves, Abandoned Cemeteries and Cemetery Closures, Ontario Ministry of Government and Consumer Services. Effective as of January 16, 2016, Nancy Watkins, Senior Policy Analyst, is the new Registrar. Her telephone number is 416 212-7499 and her e-mail address is Nancy.Watkins@ontario.ca.

8.0 BIBLIOGRAPHY

Archaeological Assessments Ltd.

2008 *The Stage 1-2 Archaeological Assessment of 11160 Woodbine Avenue, Part of Lot 28, Conc 3, and Part of Honda Boulevard and the Woodbine Bypass, art of Lots 27&28, Conc 3, Town of Markham, Regional Municipality of York.* Report on file with the Ministry of Tourism, Culture and Sport. Licensee Rick Sutton P013-377-2007.

2010 *The Stage 3-4 Excavations of the McCague Site (AlGu-379), 11160 Woodbine Avenue, Part Of Lot 28, Concession 3, And Part Of Honda Boulevard And The Woodbine Bypass, Part Of Lot 27 & 28, Concession 3, Town Of Markham, Regional Municipality Of York.* Report on file with the Ministry of Tourism, Culture and Sport. Licensee Rick Sutton; PIF P013-410-2007.

Archaeological Services Inc.

2003 *Stage 1-2 Archaeological Assessment of Cathedraltown Subdivision Revised Draft Plan 19TM-01001, Part of Lots 23, 24 and 25, Concession 3, Geographic Township of Markham, Town of Markham, Regional Municipality of York, Ontario.* Report on file with the Ministry of Tourism, Culture and Sport. Licensee Martin Cooper; CIF#2001-020-007.

2004 *Stage 3 Archaeological Investigation of The Carlton Creek Site (AlGu-304), Draft Plan of Subdivision 19TM-01001, Part of Lots 23, 24 & 25, Concession 3, Geographic Township of Markham, Now the Town of Markham, Regional Municipality of York, Ontario* (Archaeological Services Inc. 2004; licensee Bruce Welsh P047-013)

2005 *Stage 1 and 2 Archaeological Assessment of Cathedral Town Development, Part of Lots 22, 23 and 24, Concession 3, Geographic Township of Markham, County of York, Town of Markham, Regional Municipality of York.* Report on file with the Ministry of Tourism, Culture and Sport. Licensee Debbie Steiss. PIF P049-112, P049-123 and P049-124)

2005 *Stage 3 Assessment of the Golden Tower Site (AlGu-303), Lot 24, Concession 3 (Geographic Township of Markham, County of York), Town of Markham, Regional Municipality of York.* Report on file with the Ministry of Tourism, Culture and Sport. Licensee Bruce Welsh; PIF# P047-126.

2006 *Stages 3 & 4 Archaeological Excavation of the Klinck (AlGu-300) and the Dietzmann (AlGu-302) Sites, Draft Plan of Subdivision 19T M-01001, Part of Lots 23, 24 and 25, Concession 3, Geographic Township of Markham, Now the Town of Markham, Ontario*. Report on file with the Ministry of Tourism, Culture and Sport. Licensee Eva MacDonald; CIF#P125-045.

2012 *Stage 1 and 2 Archaeological Assessment of Part of Lot 27, Concession 4 Geographic Township of Markham, County of York, Town of Markham, Regional Municipality of York.* Report on file with the Ministry of Tourism, Culture and Sport. Licensees Debbie Steiss and Andrew Riddle P049-601-2010 and P347-052-2011.

2014 *Stage 3 Archaeological Assessment of The Peach 2 Site (AlGu-463) 10975 Woodbine Ave, Part of Lot 27, Concession 4, Geographic Township of Markham, County of York, Town of Markham, Regional Municipality of York, Revised Report.* Report on file with the Ministry of Tourism, Culture and Sport. Licensee Eva MacDonald; PIF P125-072-2011.

Archeoworks Inc.

2001 Stage 1-2 Archaeological Assessment of 27.7 Hectare Property Part of Lots 22 & 23, Concession 4, 19TM-01002 Woodbine Avenue/Major Mackenzie Drive, East Cathedral Community, Town of Markham, Regional Municipality of York, Ontario. Report on file with the Ministry of Tourism, Culture and Sport. Licensee Kim Slocki; CIF# 2001-015-004.

Chapman L.J. and D.F. Putnam

1984 *The Physiography of Southern Ontario*. Second Edition. University of Toronto Press, Toronto, Ontario.

Golder Associates Ltd.

2016 *Stage 1 Archaeological Assessment York Downs Golf Club, Parts of Lot 16, 17 and 18, Concession 5, Geographic Township of Markham, County of York, Now 4134 16th Avenue, City of Markham, Ontario.* Report on file with the Ministry of Tourism, Culture and Sport. Licensee. Jamie Lemon; P1056-0049-2015)

Hoffman, D.W. and N.R. Richards

1955 *Soil Survey of York County*. The Ontario Soil Survey Report No. 19. Joint Publication of the Canada Department of Agriculture, Research Branch; Ontario Ministry of Agriculture and Food, Toronto; and Ontario Agricultural College, Guelph.

Miles and Co.

1878 *Illustrated Historic Atlas of the County of York.*

Ministry of Northern Development and Mines (MNDM)
2007 *Physiography of Southern Ontario*. Chapman, L.J. and D.F. Putnam, authors. GIS map data layer distributed by the Ontario Geological Survey as Miscellaneous Release – Data (MRD) 228. Queen's Printer for Ontario.

Ministry of Tourism and Culture (MTC; now Ministry of Tourism, Culture and Sport)
2011 *Standards and Guidelines for Consultant Archaeologists.* Toronto.

Museum of Indian Archaeology
1987a *Interim Report on an Archaeological Assessment of Parts of Lots 18, 19 and 20, Concession 3, Town of Markham.* Report on file with the Ministry of Tourism, Culture and Sport, Licensee Museum of Indian Archaeology; Licence # 86-24
1987b *Report on the Completion of an Archaeological Assessment of Parts of Lots 18, 19 and 20, Concession 3, Town of Markham.* (Museum of Indian Archaeology. 1987; Licence Number 87-40)
1990 *Archaeological Assessment of Draft Plan of Subdivision 19T-87108 forming part of the proposed Buttonville Business Park, Town of Markham.* Report on file with the Ministry of Tourism, Culture and Sport, Licensee Museum of Indian Archaeology; Licence # 89-160B
1991 *Archaeological Assessment of Draft Plan of Subdivisions 19T-87109, 19T-87110 and 19T-87111 forming parts of the proposed Buttonville Business Park, Town of Markham*. Report on file with the Ministry of Tourism, Culture and Sport, Licensee Museum of Indian Archaeology; Licence # 89-160B

Ontario Fundamental Dataset, Ministry of Natural Resources (2012) and CanVec Geospatial Database (2012)
2013 Base Mapping for the Province of Ontario.

Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)
2006 GIS Layers for Soils in the Province of Ontario.

This Land Archaeology Inc.
2013 *REVISED report on the 2008 and 2009 Stage 1 to 3 Archaeological Assessment of Glendower Properties Inc.'s Property, part of Lots 28 and 29, Concession 4, Town of Markham, Regional Municipality of York, Ontario, AlGu-401; AlGu-456, AlGu-457*. Report on file with the Ministry of Tourism, Culture and Sport. Licensee William Finlayson; PIF P059-135-2009, P059-135-2009, P059-080-2008 and P059-080-2008.

Tremaine, George. R.
1860 *Tremaine's Map of the County of York, Canada West*. Compiled from Actual Surveys. George C. Tremaine, Publisher.

9.0 IMAGES

Image 1: PPR Phase 1 - Overview of Enbridge Facilities at 101 Honda Boulevard (looking northeast)



Image 2: PPR Phase 1 - East Side of Honda Boulevard at 101 Honda Boulevard (looking east)



Image 3: PPR Phase 1 - Honda Boulevard at Woodbine Avenue, Eastern ROW (looking northwest)



Image 4: PPR Phase 1 - Honda Boulevard, Eastern ROW (looking southeast)



Image 5: PPR Phase 1 - Honda Boulevard, Western ROW (looking southeast)



Image 6: PPR Phase 1 - Honda Boulevard South of Mobis Drive, Western ROW (looking southeast)



Image 7: PPR Phase 1 - Woodbine Avenue, Western ROW (looking northeast)



Image 8: PPR Phase 1 - Woodbine Avenue, Western ROW (looking south)



Image 9: PPR Phase 1 - Woodbine Avenue at Bishop's Gate. Eastern ROW (looking north)



Image 10: PPR Phase 1 - Woodbine Avenue West of Victoria Square Boulevard, Eastern ROW (looking southwest)



Image 11: PPR Phase 1 - Woodbine Avenue East of Victoria Square Boulevard, Eastern ROW (looking north)



Image 12: PPR Segment 2.1 - Woodbine Avenue West of Honda Boulevard, Western ROW (looking northeast)



Image 13: PPR Segment 2.1 - Woodbine Avenue South of Lord Melborne Street, Western ROW (looking south)



Image 14: PPR Segment 2.1 - Woodbine Avenue North of Prince of Wales Drive, Eastern ROW (looking north)



Image 15: PPR Segment 2.1 - Woodbine Avenue South of Prince of Wales Drive, Eastern ROW (looking north)



Image 16: PPR Segment 2.2 - Victoria Square Boulevard South of Donald Buttress Boulevard, Western ROW (looking south)



Image 17: PPR Segment 2.2 - Victoria Square Boulevard South of Murison Drive, Western ROW (looking south)



Image 18: PPR Segment 2.2 - Victoria Square Boulevard South of Donald Buttress Boulevard, Eastern ROW (looking south)

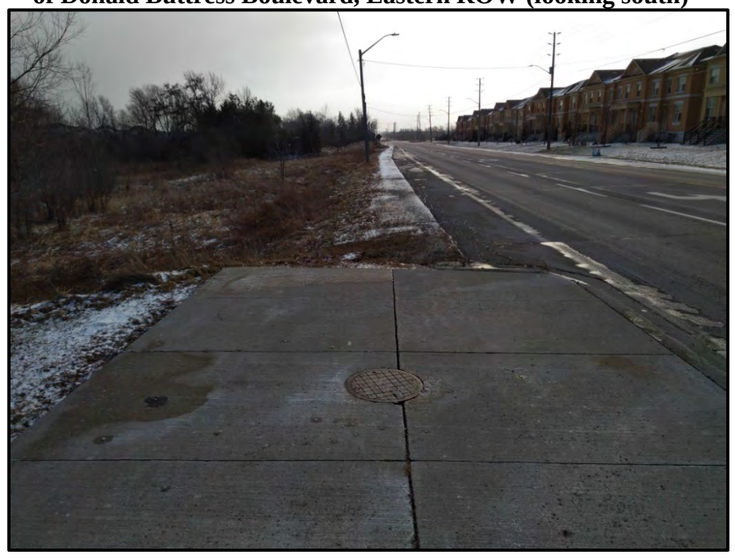


Image 19: PPR Segment 2.2 - Victoria Square Boulevard at Victoria Square Montessori, Eastern ROW (looking south)



Image 20: PPR Segment 2.2 – Woodbine Avenue North of Major Mackenzie Drive, Eastern ROW (looking southeast)



Image 21: PPR Segment 2.2 - Woodbine Avenue North of Major Mackenzie Drive, Western ROW (looking southeast)



Image 22: PPR Segment 2.2 - Woodbine Avenue at Major Mackenzie Drive, Western ROW (looking north)



Image 23: PPR Segment 2.2 - Woodbine Avenue North of Oakford Drive, Western ROW (looking north)



Image 24: PPR Segment 2.2 - Woodbine Avenue South of Major Mackenzie Drive, Eastern ROW (looking south)



Image 25: PPR Segment 2.2 - Woodbine Avenue North of Personna Boulevard, Eastern ROW (looking south)



Image 26: PPR Segment 2.2 - Woodbine Avenue South of Oakford Drive, Western ROW (looking south)



Image 27: PPR Segment 2.2 - Woodbine Avenue South of Personna Boulevard, Eastern ROW (looking north)



Image 28: PPR Segment 2.2 - Woodbine Avenue North of Roddick Road, Eastern ROW (looking north)



Image 29: PPR Segment 2.2 - Roddick Road West of Rachel Cres, Northern ROW (looking west)



Image 30: PPR Segment 2.2 - Roddick Road West of Macrill Road, Northern ROW (looking northwest)



Image 31: PPR Segment 2.2 - Roddick Road North of Eyer Drive, Eastern ROW (looking northwest)



Image 32: PPR Segment 2.2 - Roddick Road West of Rachel Cres, Southern ROW (looking east)

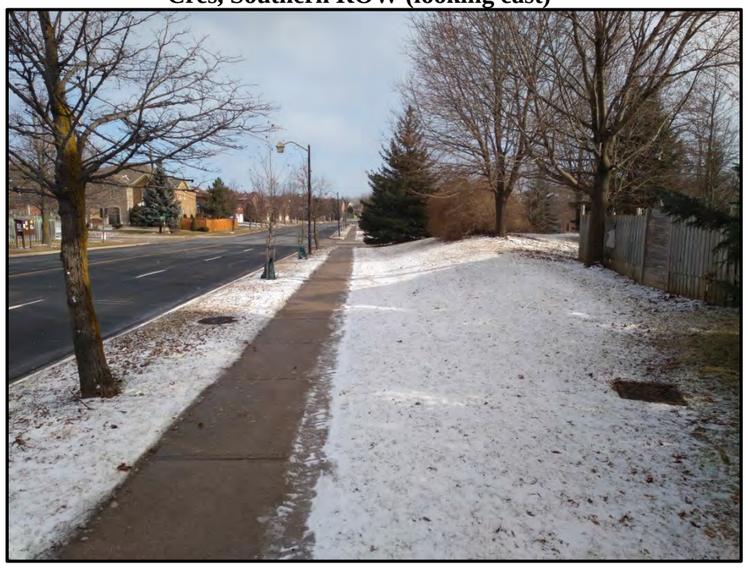


Image 33: PPR Segment 2.2 - Roddick Road West of Macrill Road, Southern ROW (looking southeast)



Image 34: PPR Segment 2.2 - Roddick Road North of Eyer Drive, Western ROW (looking southeast)

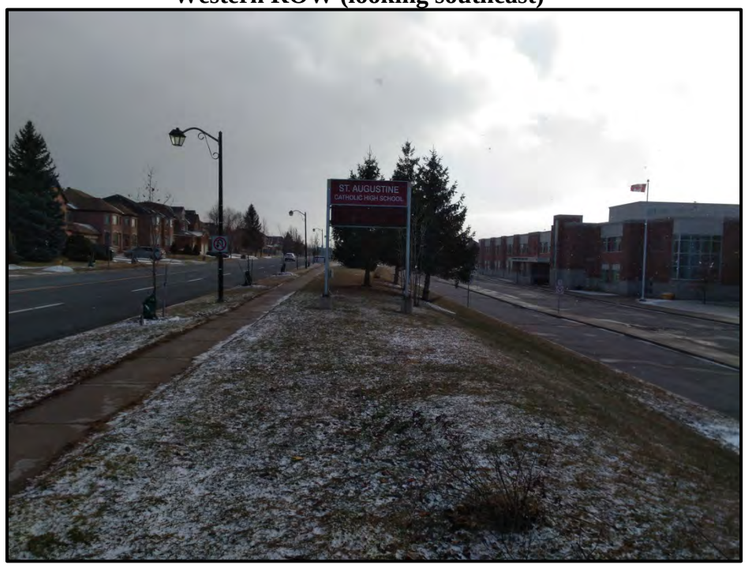


Image 35: PPR Segment 2.3 - Woodbine Avenue Across from Tucciarone Court, Western ROW (looking southwest)



Image 36: PPR Segment 2.3 - Woodbine Avenue North of Betty Roman Boulevard, Western ROW (looking southwest)



Image 37: PPR Segment 2.3 - Woodbine Avenue South of Tucciarone Court, Eastern ROW (looking southwest)



Image 38: PPR Segment 2.3 - Betty Roman Boulevard at Woodbine Avenue, Southern ROW (looking east)



Image 39: PPR Segment 2.3 - Betty Roman Boulevard East of Woodbine Avenue, Southern ROW (looking southwest)



Image 40: PPR Segment 2.3 - Betty Roman Boulevard East of Woodbine Avenue, Northern ROW (looking west)



Image 41: PPR Segment 2.4 - Prince Regent Street at Betty Roman Boulevard, Western ROW (looking south)



Image 42: PPR Segment 2.4 - Prince Regent Street South of Betty Roman Boulevard, Eastern ROW (looking north)

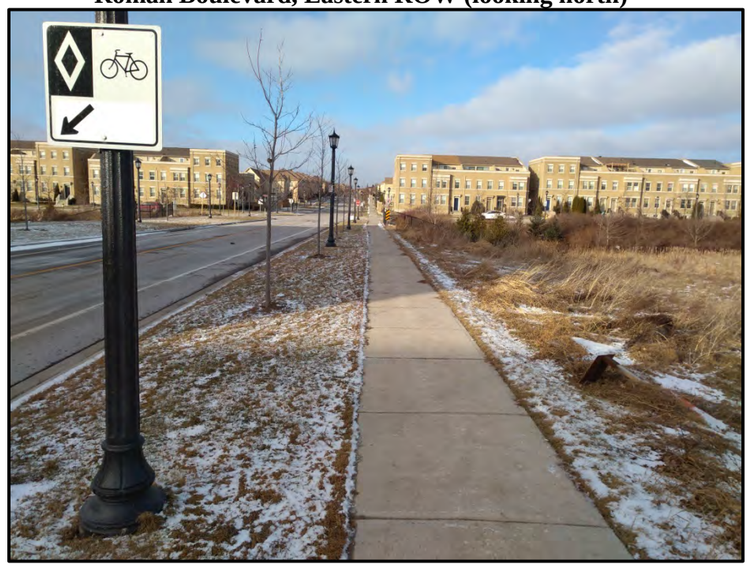


Image 43: PPR Segment 2.4 - Prince Regent Street at Betty Roman Boulevard, Western ROW (looking southeast)



Image 44: PPR Segment 2.5 - Village Parkway at Highway 7, Western ROW (looking north)



Image 45: PPR Segment 2.5 - Village Parkway North of Highway 7, Eastern ROW (looking south)

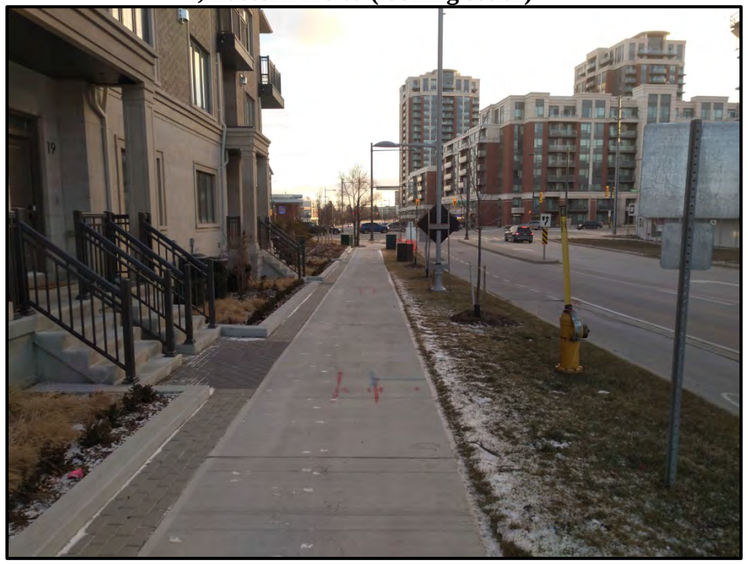


Image 46: PPR Segment 2.5 - Village Parkway South of Highway 7, Eastern ROW (looking northeast)



Image 47: PPR Segment 2.6 - Village Parkway at Wentworth Court, Western ROW (looking north)



Image 48: PPR Segment 2.6 - Village Parkway at Wentworth Court, Western ROW (looking north)



Image 49: PPR Segment 2.6 - Village Parkway West of Paget Plc, Western ROW (looking north)



Image 50: PPR Segment 2.6 - Village Parkway North of Carlton Road, Western ROW (looking south)



Image 51: PPR Segment 2.6 - Village Parkway North of Wentworth Court, Eastern ROW (looking north)



Image 52: PPR Segment 2.6 - Village Parkway South of Carlton Road, Eastern ROW (looking north)



Image 53: PPR Segment 2.7 - Major Mackenzie Drive across from Walsingham Court, Northern ROW (looking west)



Image 54: PPR Segment 2.7 - Major Mackenzie Drive West of Walsingham Court, Northern ROW (looking west)



Image 55: PPR Segment 2.7 - Major Mackenzie Drive, Northern ROW (looking west)



Image 56: PPR Segment 2.7 - Major Mackenzie Drive across from Cachet Parkway, Northern ROW (looking east)



Image 57: PPR Segment 2.7 - Major Mackenzie Drive East of Walsingham Court, Southern ROW (looking west)

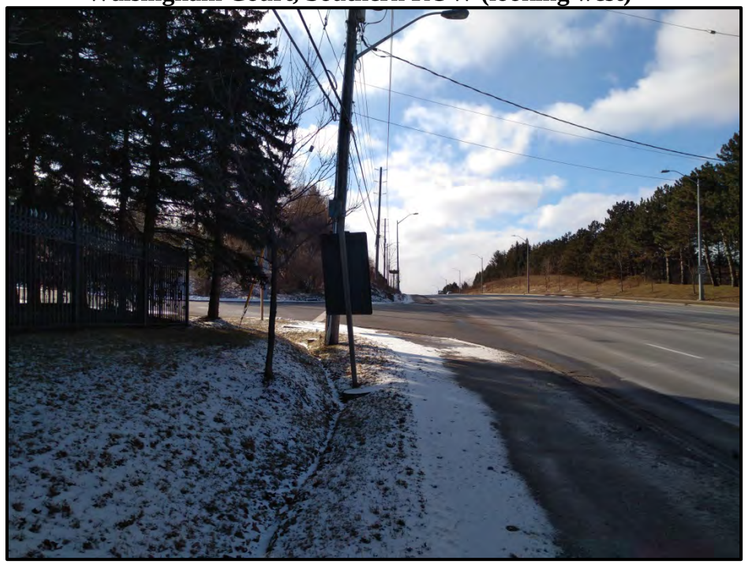


Image 58: PPR Segment 2.7 - Major Mackenzie Drive West of Walsingham Court, Southern ROW (looking west)

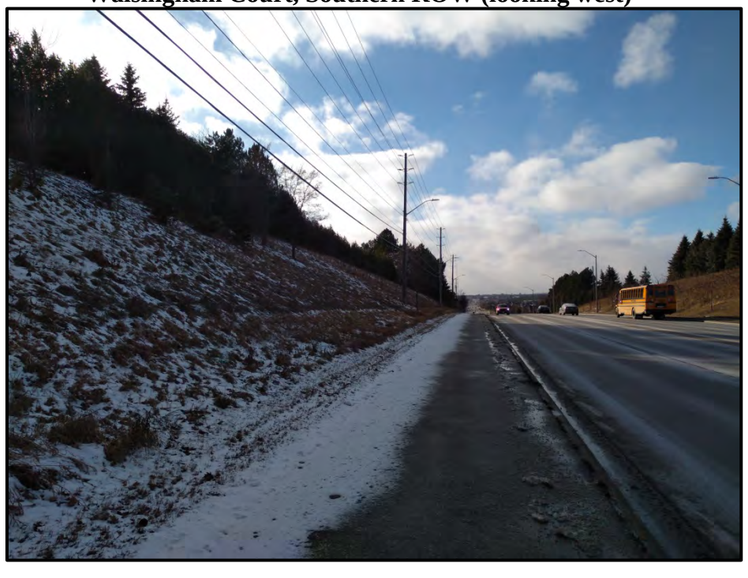


Image 59: PPR Segment 2.7 - Major Mackenzie Drive, Southern ROW (looking east)



Image 60: PPR Segment 2.7 - Major Mackenzie Drive East of Cachet Parkway, Southern ROW (looking west)



Image 61: PPR Disconnect 1 – Hazelton Avenue at Major Mackenzie Drive, Western ROW (looking north)



Image 62: PPR Disconnect 1 – Hazelton Avenue at Major Mackenzie Drive, Eastern ROW (looking north)



Image 63: PPR Disconnect 3 – South of Carleton Road, South End of Project Area (looking north)



Image 64: PPR Disconnect 3 – South of Carleton Road, South End of Project Area (looking northeast)

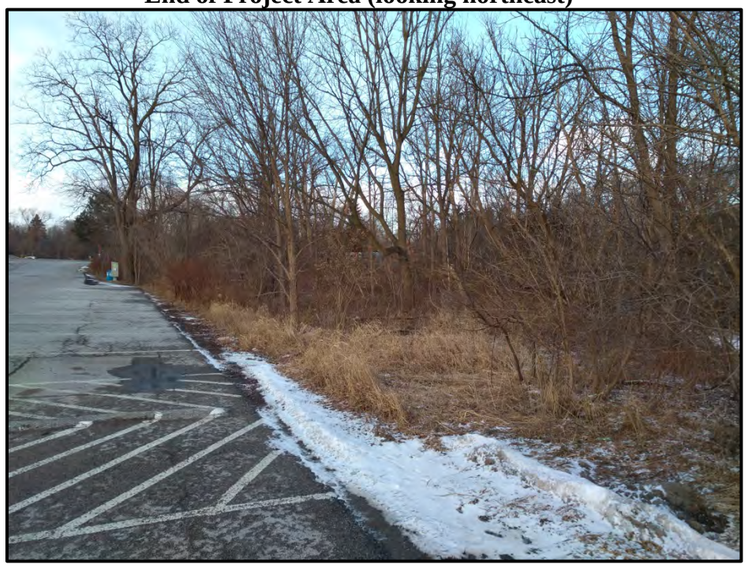


Image 65: PPR Disconnect 3 – South of Carleton Road, Centre of Project Area (looking east)



Image 66: PPR Disconnect 4 – North of HWY 7, East of Rouge River (looking south)



Image 67: PPR Disconnect 4 – Under of HWY 7 Bridge, East of Rouge River (looking south)



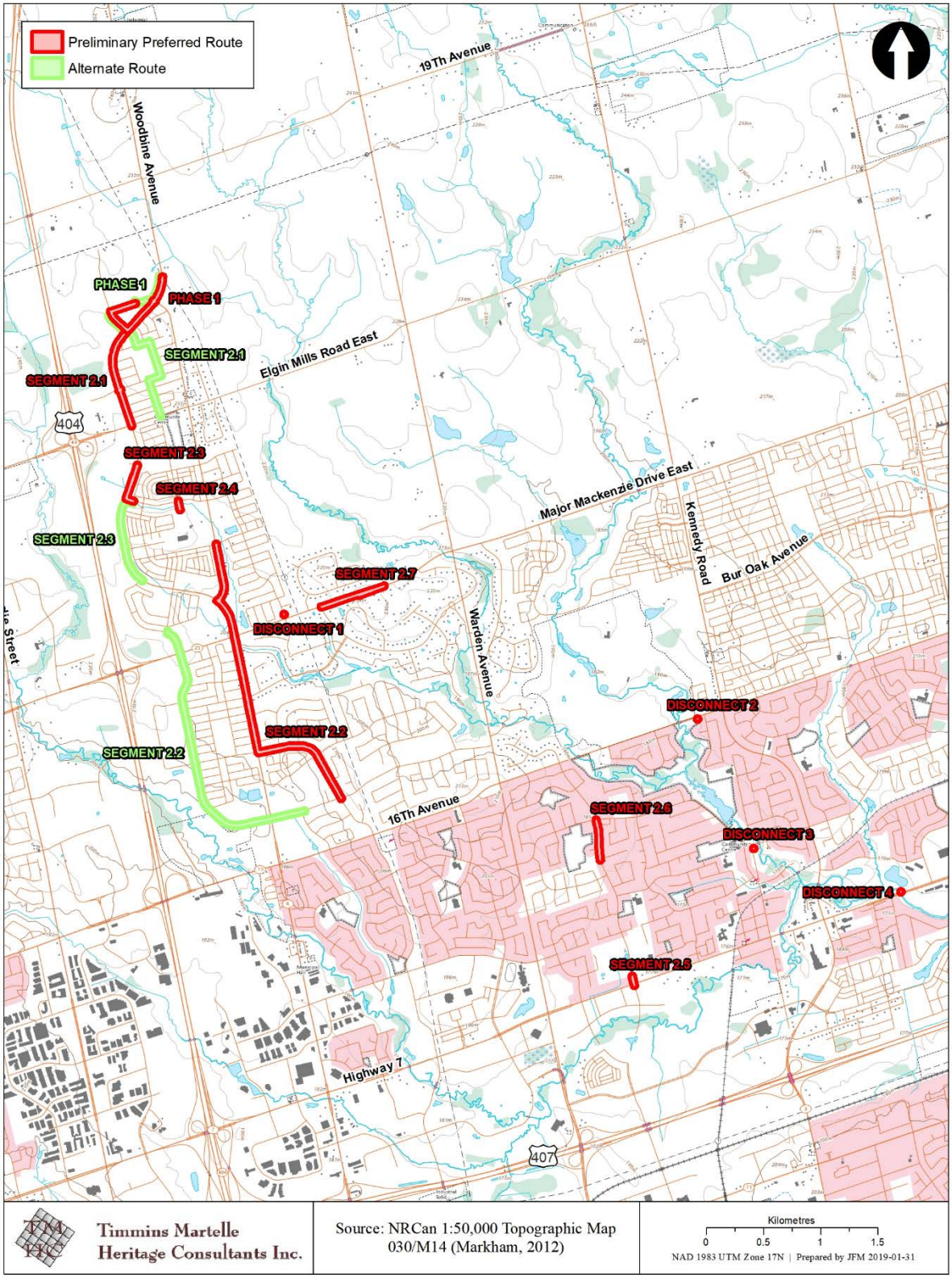
Image 68: PPR Disconnect 4 – North of HWY 7, East of Rouge River (looking east)



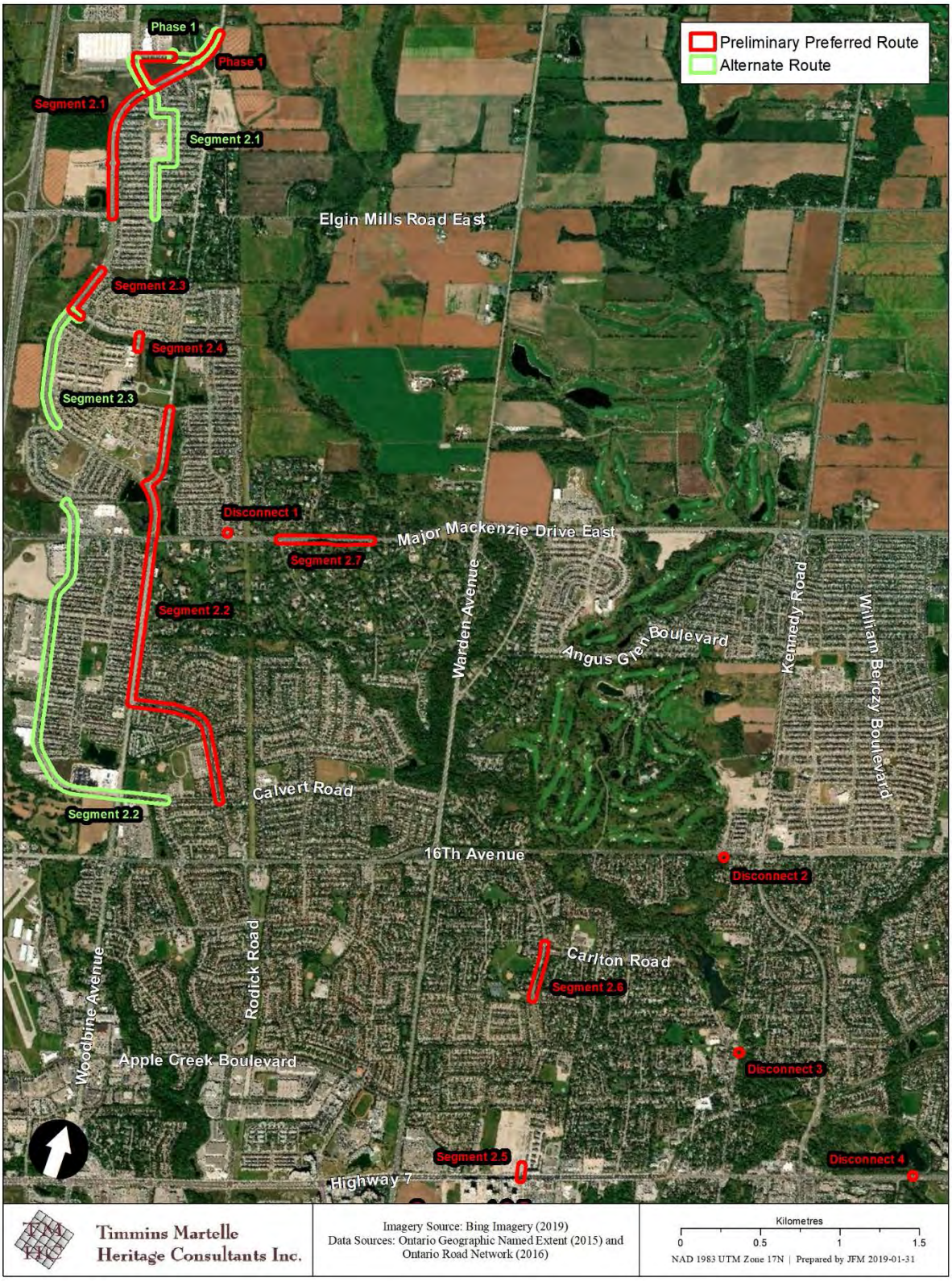
Image 69: PPR Disconnect 4 – North of HWY 7, East of Rouge River (looking west)



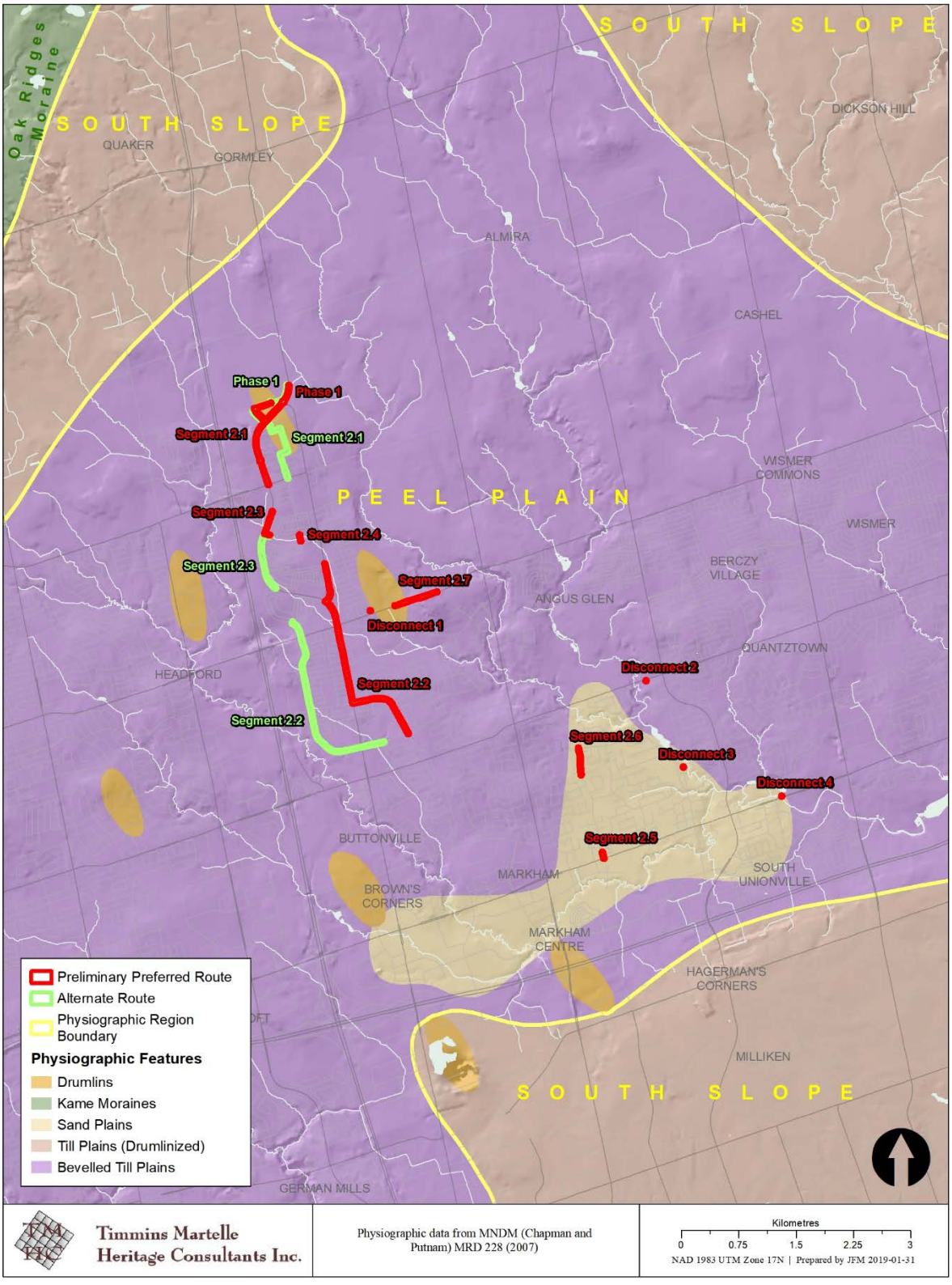
10.0 MAPS



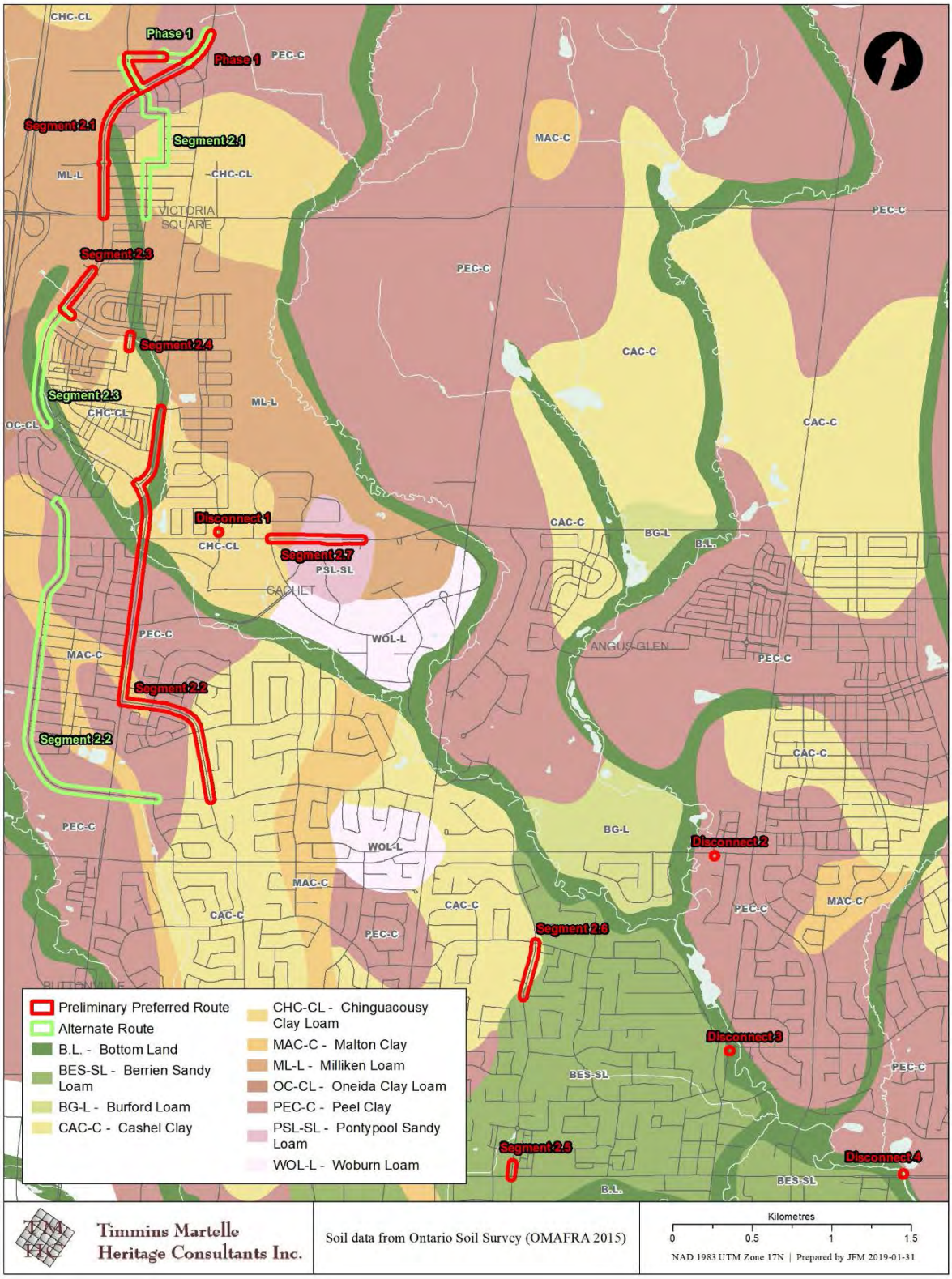
Map 1: Location of the Project Area in the City of Markham, ON



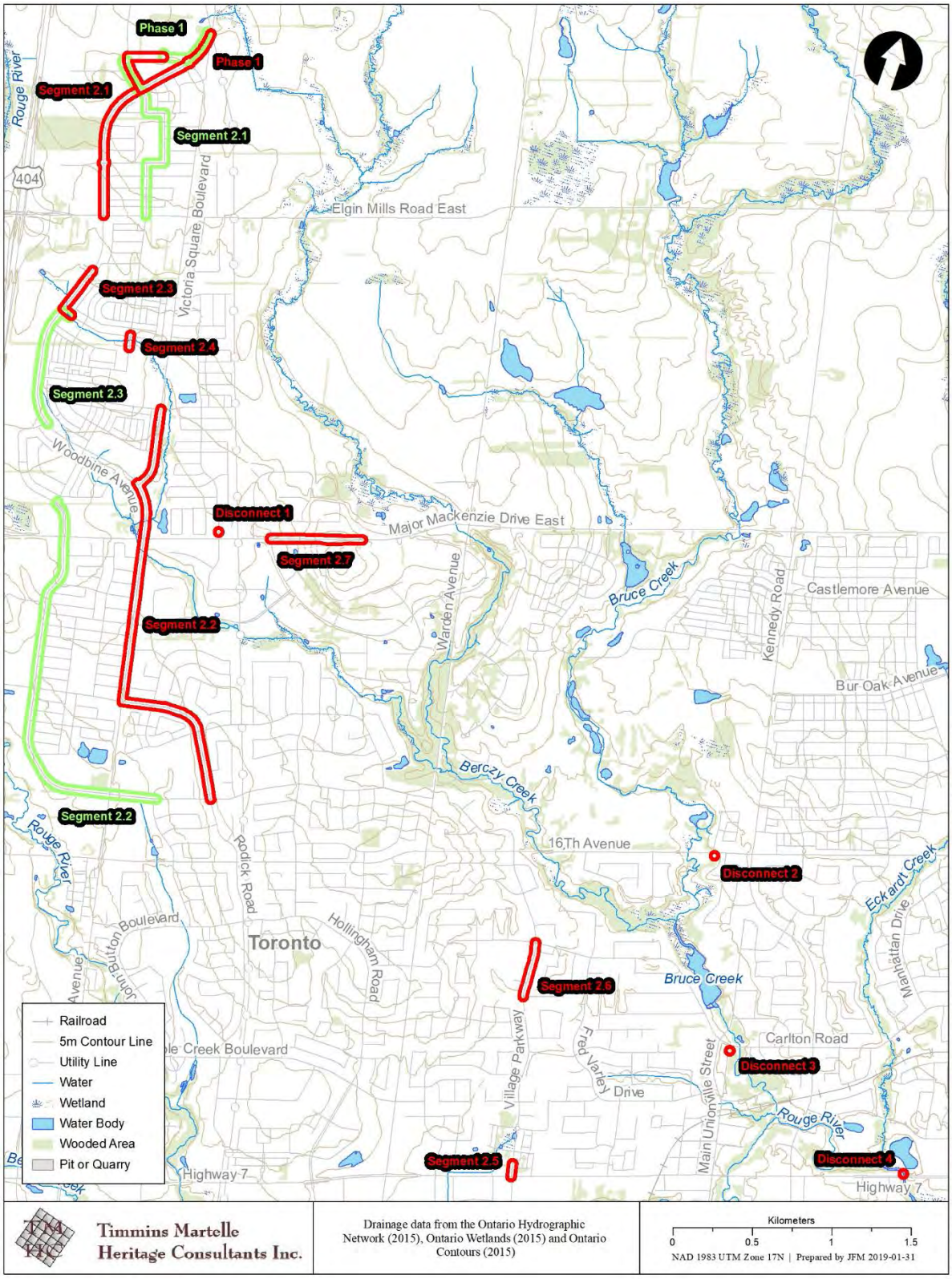
Map 2: Aerial Photograph Showing the Project Area in the City of Markham, ON



Map 3: Physiography within the Vicinity of the Project Area



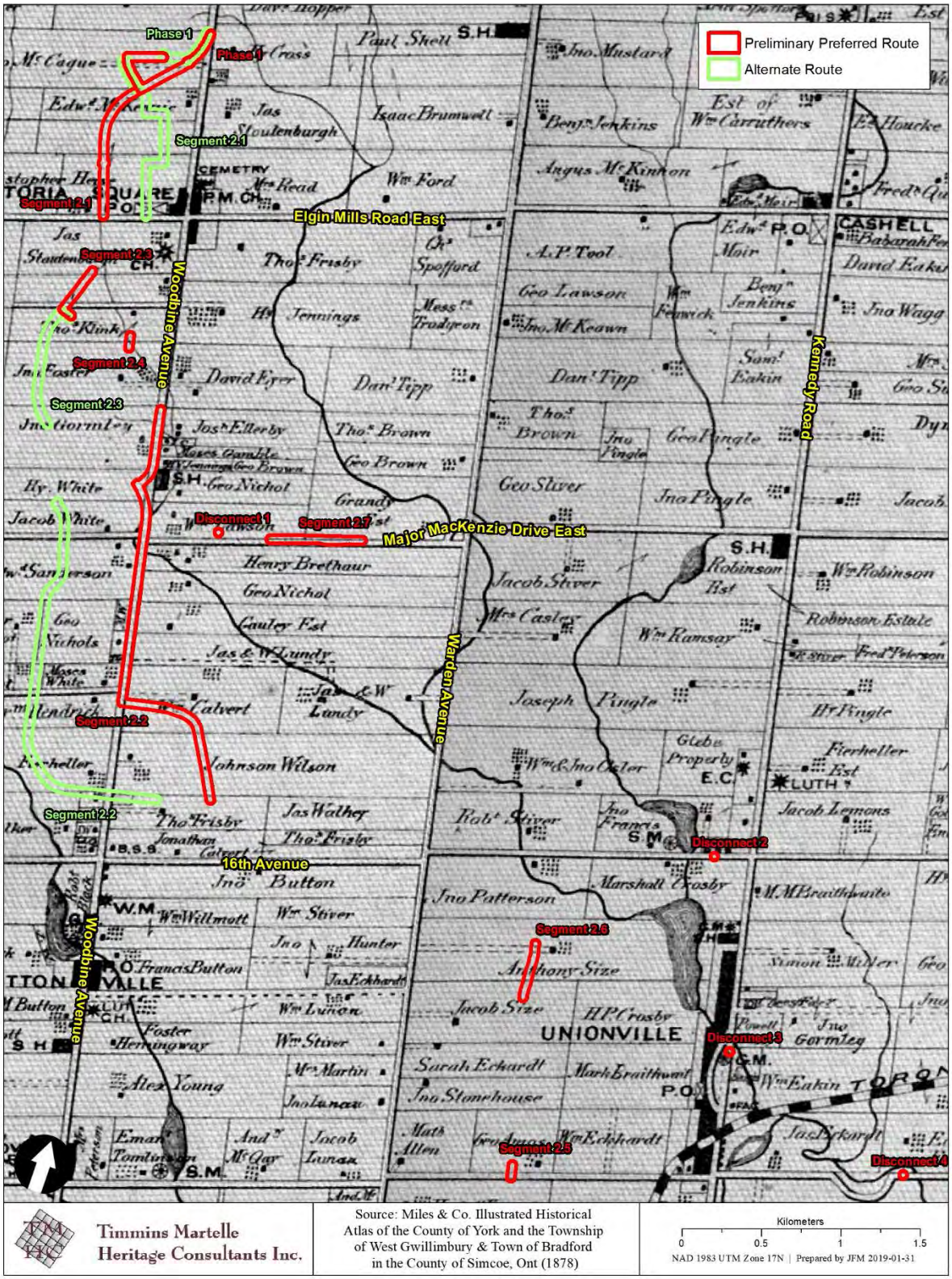
Map 4: Soils within the Vicinity of the Project Area



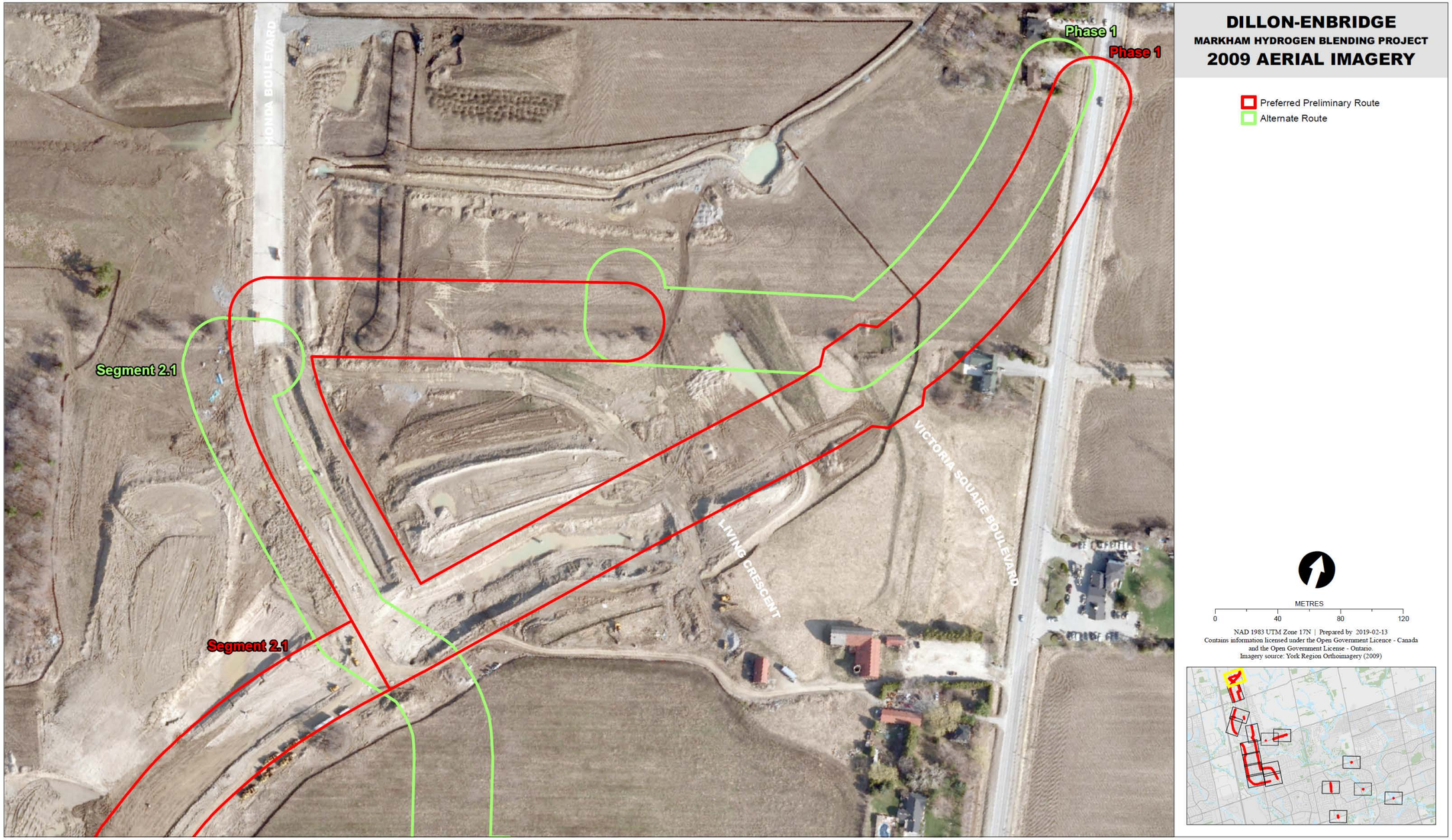
Map 5: Drainage within the Vicinity of the Project Area



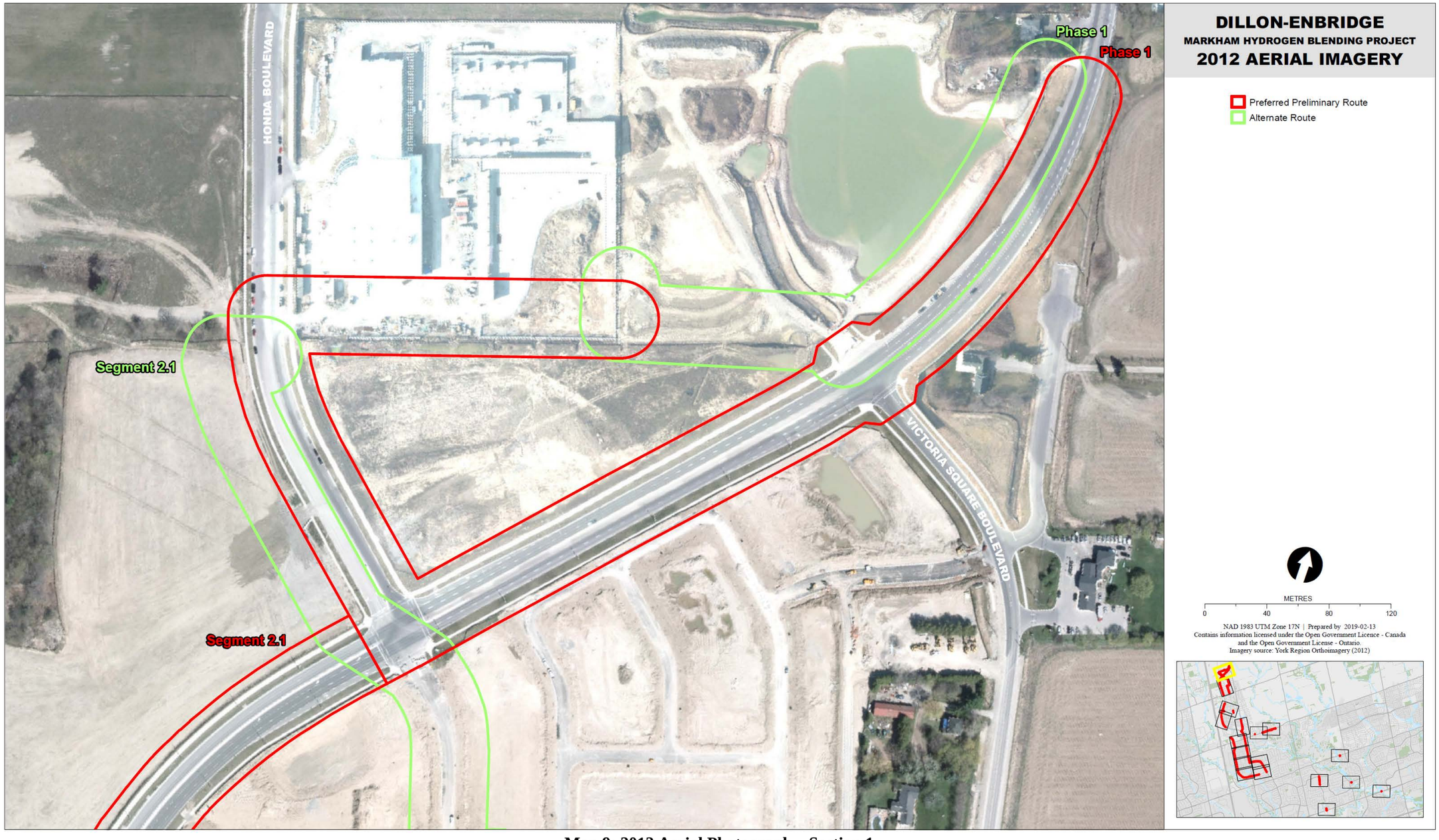
Map 6: Project Area Shown on the 1860 Map of York County, ON



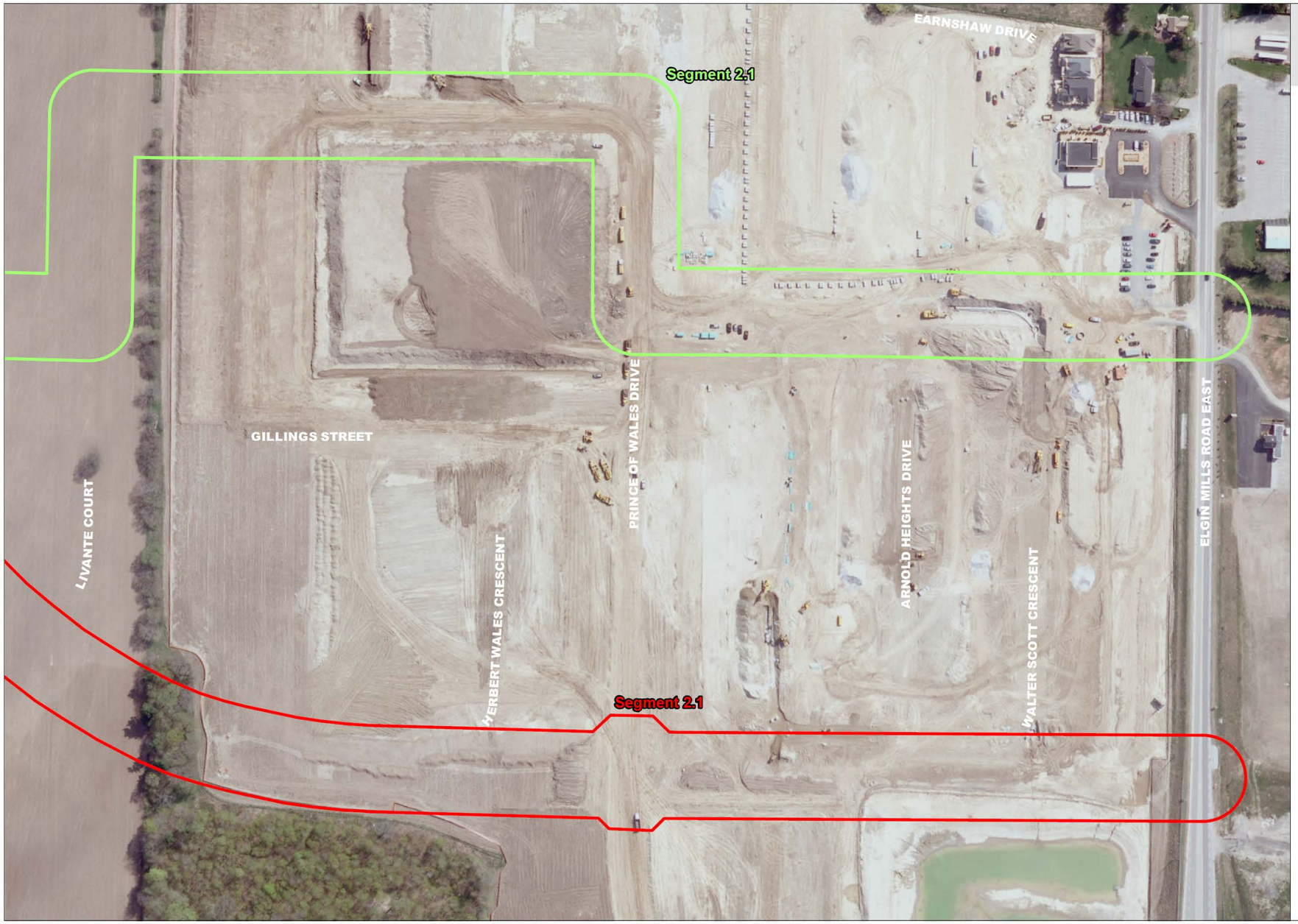
Map 7: Northern Project Area Shown on the 1878 Map of York County, ON



Map 8: 2009 Aerial Photograph – Section 1



Map 9: 2012 Aerial Photograph – Section 1

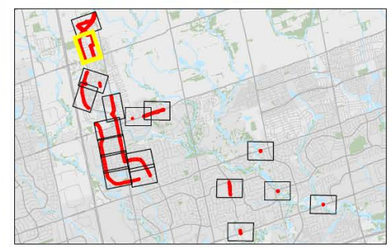


DILLON-ENBRIDGE
MARKHAM HYDROGEN BLENDING PROJECT
2007 AERIAL IMAGERY

Preferred Preliminary Route
Alternate Route

METRES
0 40 80 120

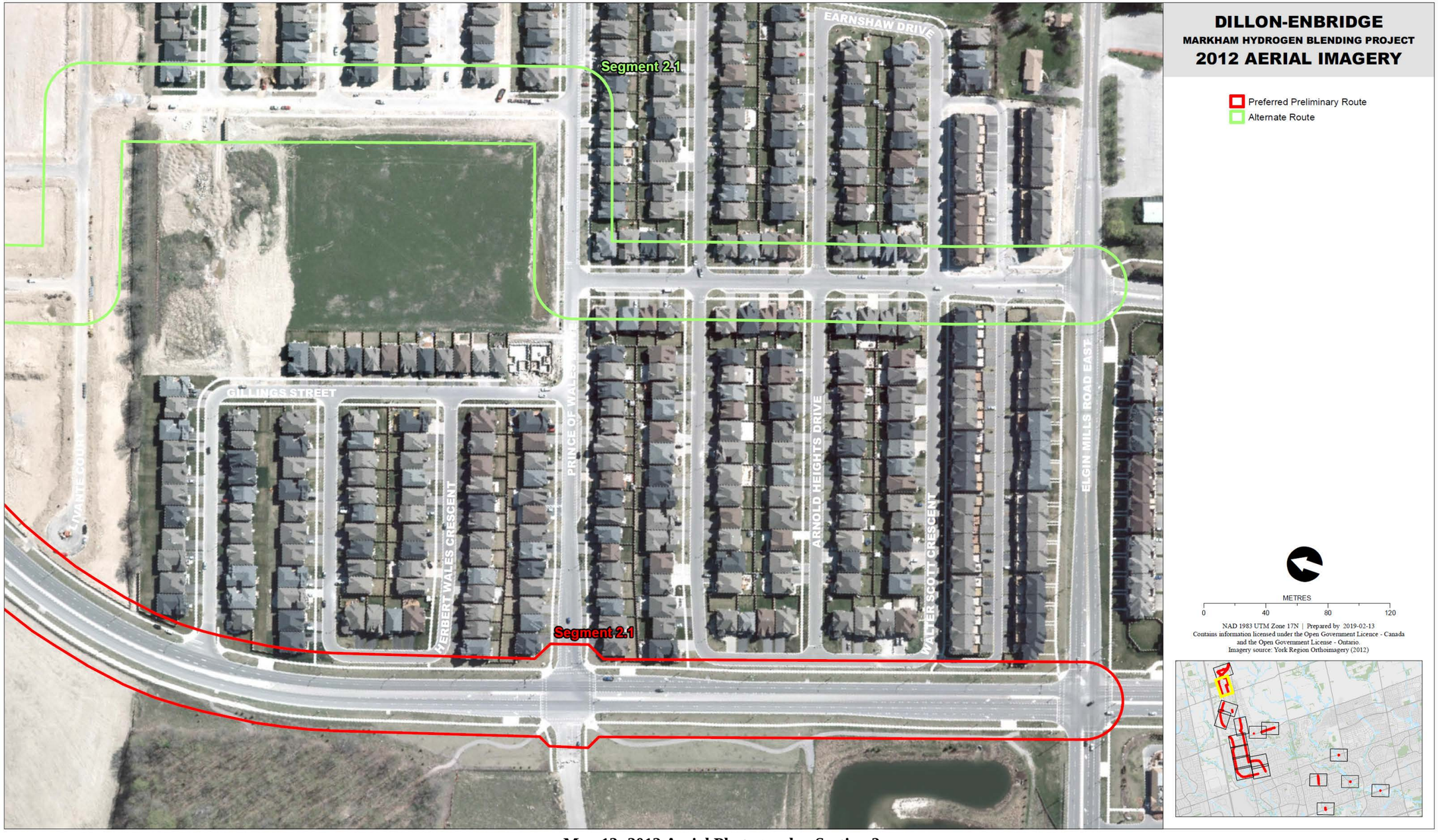
NAD 1983 UTM Zone 17N | Prepared by: 2019-02-13
Contains information licensed under the Open Government Licence - Canada and the Open Government License - Ontario.
Imagery source: York Region Orthoimagery (2007)



Map 10: 2007 Aerial Photograph – Section 2



Map 11: 2009 Aerial Photograph – Section 2



Map 12: 2012 Aerial Photograph – Section 2



Map 13: 2007 Aerial Photograph – Section 3



Map 14: 2009 Aerial Photograph – Section 3



Map 15: 1995 Aerial Photograph – Section 4



Map 16: 2009 Aerial Photograph – Section 4

ATTACHMENTS
(3 – MSIFN)

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

[redacted] <[redacted]@enbridge.com> Fri, Mar 8, 2019 at 3:49 PM
To: [redacted] <[redacted]@scugogfirstnation.com>, "[redacted]@scugogfirstnation.com" <[redacted]@scugogfirstnation.com>
Cc: "[redacted] (ENERGY) (Raina.Crasto@ontario.ca)" <[redacted]@ontario.ca>

Hi Dave and [redacted]

I hope you are both doing well.

I'm emailing to provide some advance materials about our proposed Power to Gas Pipeline Project in the City of Markham. Please find attached the Project Notification letter, Notice of Commencement, map of the proposed location and a copy of the Duty to Consult letter issued by the Ministry of Energy, Northern Development & Mines for your information and reference.

[Quoted text hidden]

4 attachments

- **MSIFN Notification Letter March 8 pdf**
  394K
- **EGI LCEP NOC Mar 2019 Admail pdf**
  543K
- **Fig1 ProjectLayout Feb21 pdf**
  12427K
- **Power to Ga Delegation Letter pdf**
  1560K

March 8, 2019

[redacted], Consultation, Lands & Membership Supervisor
Mississaugas of Scugog Island First Nation
Administration Building
22521 Island Road
Port Perry, ON L9L 1B6

RE: Enbridge Gas Inc. Low-Carbon Energy Project City of Markham, Ontario
Notice of Project

Dear [redacted]

Enbridge Gas Inc. (Enbridge) has retained Dillon Consulting Limited (Dillon) to undertake an environmental and cumulative effects assessment and route selection study for approximately 6.8 kilometers (km) of natural gas pipeline and associated facilities in Markham, Ontario. The project objective is to create a network supplying blended natural gas with a small amount of hydrogen gas within Enbridge's existing natural gas pipeline infrastructure (the Project). The study is being conducted in accordance with the Ontario Energy Board's (OEB) *Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition, August 2016*. Once the study is complete, Enbridge may apply to the OEB for approval to construct the new pipeline. If approved, construction would be completed in two phases in 2020 and 2021.

Enbridge has an operating electrolyzer at its Training and Operations Centre located at 101 Honda Boulevard in Markham, Ontario. The electrolyzer converts surplus electricity into hydrogen gas and oxygen. The hydrogen gas can have multiple uses. Enbridge is proposing to blend a low concentration of hydrogen (up to 2% by volume) into an isolated area of the gas distribution network in an effort to reduce greenhouse emissions. This blended gas will remain within Enbridge's natural gas specifications. It can be utilized in the same way traditional natural gas is used, for example, to heat homes and water. As is the case with any other project, Enbridge will take all necessary measures to ensure that the safety of the gas distribution system is maintained at all times.

A Preliminary Preferred Route (PPR) for the proposed natural gas pipeline has been identified. The PPR follows portions of Woodbine Ave., as well as existing residential roads located in subdivisions, generally located south of Honda Blvd. and north of Highway 7 in the City of Markham. Phase 1 of the Project includes the installation of approximately 1 km of nominal pipe size (NPS) 6-inch steel Extra High Pressure (XHP) natural gas pipe, 250 m of NPS 6-inch steel High Pressure (HP) pipe and 75 m of NPS 8-inch Intermediate Pressure (IP) polyethylene (PE) natural gas pipeline. Phase 2 of

Continued . . .

DILLON CONSULTING

51 Breithaupt Street
Suite 200
Kitchener, Ontario
Canada
N2H 5G5
Telephone
519.571.9833
Fax
519.571.7424

Dillon Consulting Limited

the Project is comprised of multiple segments of pipeline which will convey blended hydrogen and natural gas, and includes the installation of 1.2 km of NPS 8-inch IP PE pipe, 2.9 km of NPS 8-inch and NPS 6-inch IP PE pipe, 350 m of NPS 6-inch IP PE pipe, 60 m of NPS 6-inch IP PE pipe, 10 m of NPS 4-inch IP PE pipe, 350 m of NPS 4-inch IP PE pipe, and 600 m of NPS 2-inch IP PE pipe. An alternative route is also being considered as part of the study, and is located in the same general area as the PPR. Locations requiring both temporary and permanent disconnection points of gas pipelines have been identified as well for both routes. A map showing both the PPR and alternative pipeline route is enclosed (**Figure 1**).

In order to undertake a successful consultation program, Indigenous engagement will play a key role in the Project. As noted in the attached Notice of Study Commencement, Enbridge will be hosting Open House meetings as part of the study.

As part of the initial phase of the study, we are collecting information on the natural environment, archaeological features and socio-economic features for both the PPR and alternative route described above. Examples of data being collected include information on terrestrial and aquatic vegetation and wildlife, archaeological and heritage resources, community parks and picnic areas, community facilities, nature trails, bus routes and other utilities such as water, sewage, industrial and commercial utilities.

Enbridge is committed to meaningful engagement with Indigenous groups and the satisfaction of the duty to consult. Enbridge looks forward to engaging with your Nation to ensure your community's interests are being represented. Your Nation is invited to provide comments regarding the proposed project. Specifically, Enbridge is seeking information about any potential impacts that the project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts.

We invite your community to be involved in the engagement and consultation process. Kindly indicate whether your community is interested in participating in the engagement activities on or before **March 31, 2019.** If you are unable to respond by the above date and are intending to do so, please provide an alternative date for when the Project Team may expect a response.

Enbridge would also be interested in meeting with your Nation to share project related information should you wish. Alternatively, please advise if you do not wish to meet individually but would prefer to be kept informed of the project.

On behalf of the Project Team, thank you in advance for your consideration regarding the initial phases of the project. Please do not hesitate to contact me with any questions you may have.

Continued . . .

Sincerely,

[redacted]
Sr. Advisor, Community Engagement
Enbridge Gas Inc.
O: 416-753-6962
C: 416-525-2497
[redacted]@enbridge.com

Encls. Notice of Study Commencement and Open House
Figure 1 – Project Layout and Location
MOENDM Delegation Letter

PROPOSED ENBRIDGE LOW-CARBON ENERGY PROJECT
NOTICE OF STUDY COMMENCEMENT AND OPEN HOUSE
CITY OF MARKHAM, ONTARIO
ENBRIDGE GAS INC.

The Study

Enbridge Gas Inc. (Enbridge) has retained Dillon Consulting Limited (Dillon) to begin an environmental and route selection study for approximately 6.8 kilometers (km) of natural gas pipeline and associated facilities. The objective of the project is to blend a small amount of hydrogen gas into our existing natural gas network, to reduce greenhouse gas emissions. Enbridge operates a facility which converts surplus electrical energy to hydrogen gas, which would be injected into the existing natural gas network. The blended gas would be distributed within the area outlined on the map below. Once the study is complete, Enbridge may apply to the Ontario Energy Board (OEB) for approval to construct the new pipeline. If approved, construction may begin in 2020.

The preferred route for Phase 1 of the project would involve the installation of approximately 1,325 m of 6-inch and 8-inch pipe primarily along Woodbine Ave. and Honda Blvd., ending at Enbridge's Technology and Operations Centre. Phase 2 of the project would involve multiple pipeline segments of various lengths and sizes ranging from 2-inch to 8-inch pipe along Victoria Square Blvd., Woodbine Ave., Rodick Rd., Prince Regent St., Major Mackenzie Dr. E, Village Pkwy., Elgin Mills, Honda Blvd., and Victoria Square Blvd.

An alternative route is also being considered as part of the study. The alternative route for Phase 1 of the project would involve the installation of 450 m of 6-inch pipe along Victoria Square Blvd. and an unnamed street. Phase 2 of the project will involve multiple pipeline segments of various lengths and sizes ranging from 6-inch to 8-inch pipe along Honda Blvd., Bishop's Gate, Livante Ct., Helford St., Prince of Wales Dr., Duke of York St., Woodbine Ave., Betty Roman Blvd., Markland St., and Calvert Rd. The preliminary preferred and alternative routes are identified on the map below.

The Process

The study is being conducted in accordance with the OEB's Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario. The study will review the need and justification for the pipeline, describe the natural and socio-economic environment, evaluate the potential facilities from a social and environmental perspective, outline safety measures, and describe appropriate measures for impact mitigation and monitoring.

Invitation to the Community

Stakeholder consultation is a key component of this study. Members of the general public, agencies, Indigenous communities and interest group representatives are invited to participate in the study. We will be hosting Open Houses to provide you with an opportunity to review the project and provide input. Details on the Open Houses are as follows:

Location: Monte Carlo Inn (8990 Woodbine Ave., Markham)
Date: March 19, 2019 (Tuesday)
Time: 5 PM to 8 PM

Location: Enbridge Technology & Operations Centre
(101 Honda Blvd., Markham)
Date: March 23, 2019 (Saturday)
Time: 9 AM to 12 PM
Free pancake breakfast will be served!

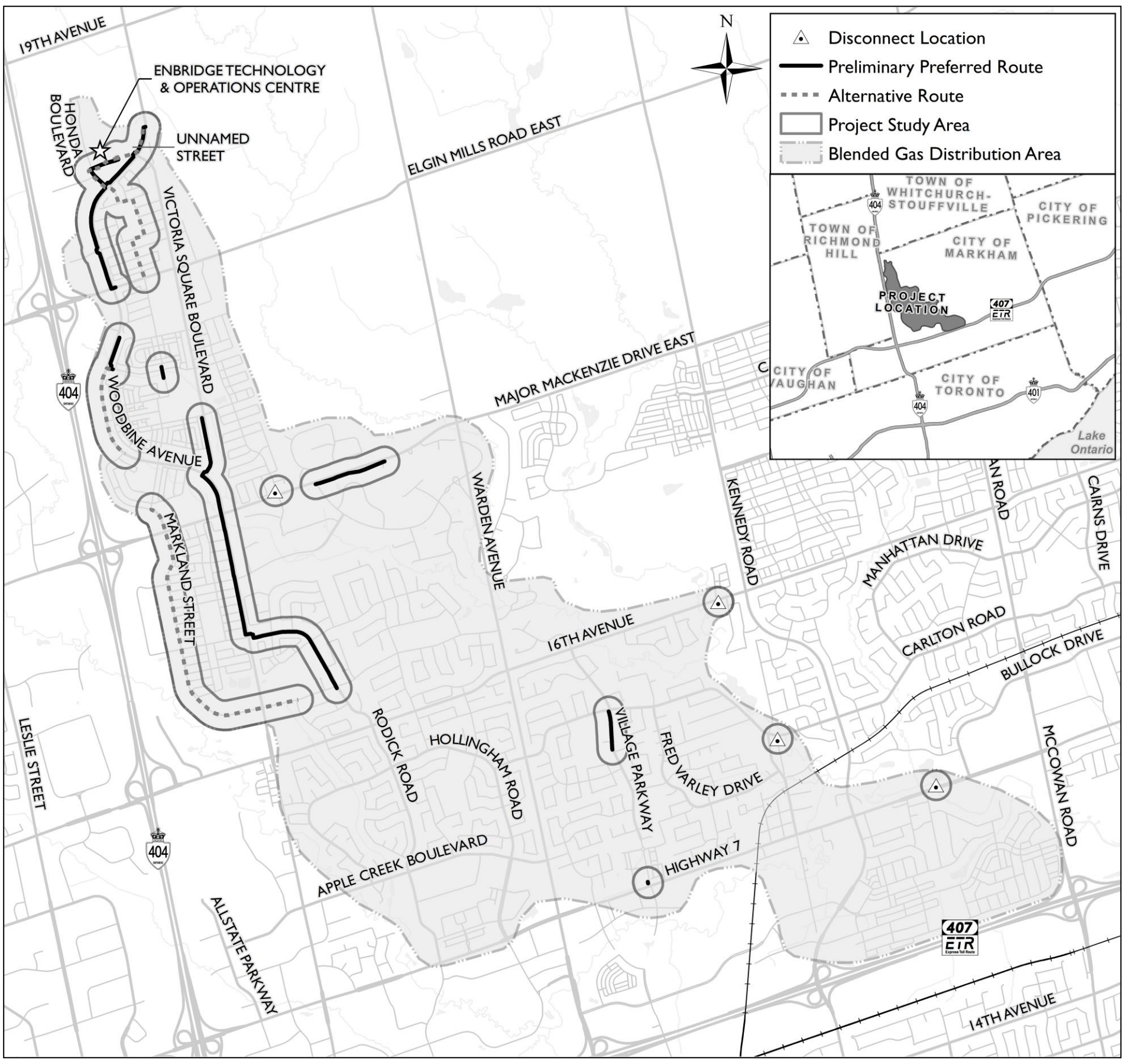
Win an Ecobee (valued at $300)

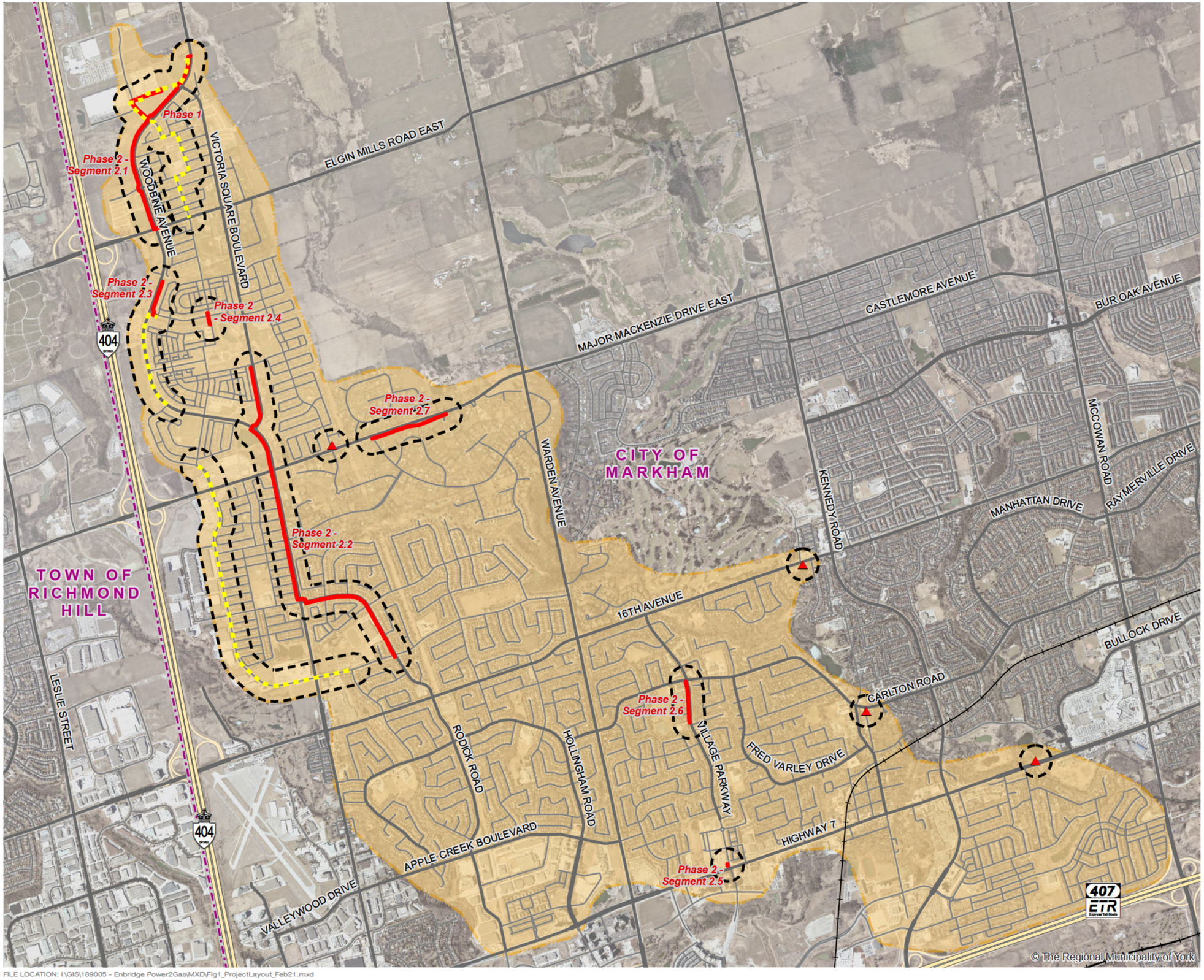
Enter for a chance to win an Ecobee smart thermostat at one of the Open Houses.

Representatives from Enbridge and Dillon will be in attendance to discuss the project and answer questions. Your input will be used to confirm the preferred route and create mitigation plans to be implemented during construction. If you are interested in participating, or would like to provide comments, please come to one of the Open Houses or contact one of the individuals listed as soon as possible. For more information about the proposed project and hydrogen blending, please visit http://enbridgegas.com/LowCarbonEnergyProject.

Tanya Turk
Sr Environmental Advisor
Enbridge Gas Inc.
101 Honda Blvd., Markham, ON L6C 0M6
(416) 495-3103
tanya.turk@enbridge.com

Tristan Lefler
Environmental Assessment Project Manager
Dillon Consulting Limited
51 Breithaupt St., Suite 200, Kitchener, ON
N2H 5G5
(519) 571-9833
LowCarbonEnergyEA@dillon.ca





ENBRIDGE

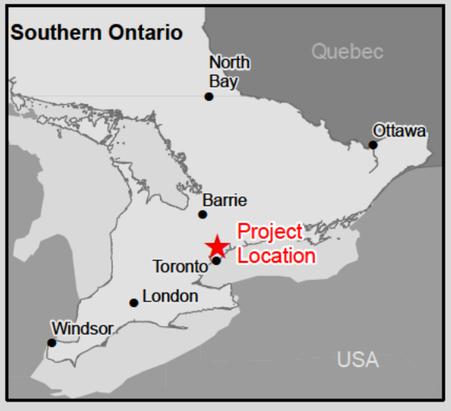
ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

PROJECT LAYOUT

FIGURE 1

- Disconnect Location
- Preliminary Preferred Route
- Alternative Route
- Rail
- Project Study Area
- Blended Gas Distribution Area
- Municipal Boundary



0 125 250 500 m

SCALE 1:28,000

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: NT / TL
MAP PROJECTION: NAD 1983 UTM Zone 17N

DILLON CONSULTING

PROJECT: 18-9005

DATE: 2019-02-21

FILE LOCATION: I:\GIS\189005 - Enbridge Power2Gas\MXD\Fig1_ProjectLayout_Feb21.mxd

Ministry of Energy, Northern Development and Mines

77 Grenville Street
6th Floor
Toronto ON M7A 2C1

Tel: (416) 314-2599

Ministère de l'Énergie, Développement du Nord et Mines

77 rue Grenville
6e étage
Toronto ON M7A 2C1

Tél: (416) 314-2599

Ontario

Indigenous Energy Policy

VIA EMAIL

March 1, 2019

[redacted]
Technical Manager, Regulatory Applications
Enbridge Gas Distribution Inc.
500 Consumers Road
North York, Ontario M2J 1P8

Re: Power to Gas Pipeline Project

Dear [redacted]

Thank you for your email dated January 4, 2019 notifying the Ministry of Energy, Northern Development and Mines of Enbridge's proposal for the Power to Gas Pipeline Project and requesting clarification on Duty to Consult requirements.

We understand that Enbridge is proposing to construct approximately 6.8 kilometers of natural gas pipeline in the City of Markham to isolate a small portion of Enbridge's existing distribution system to ensure that only blended natural gas is utilized in that isolated section. The project is associated with Enbridge's operating electrolyzer at its Training and Operations Center at 101 Honda Boulevard in Markham. The project, as outlined in the project description from Enbridge, consists of two phases with varying diameter and length of pipeline.

Phase 1 of the project consists of approximately 750 meters of NPS 6 steel extra high-pressure natural gas pipeline. The expected route will begin approximately 40 meters south of 11182 Woodbine Avenue in Markham, that will travel south on Woodbine Avenue and turn west onto Honda Boulevard. The pipeline will terminate at the Training and Operating Centre. Phase 2 will require the construction of multiple segments of varying diameter and length of pipeline. These segments will be required to provide system support when the project is isolated from the rest of the distribution system. Phase 2 will originate at the Training and Operating Centre and terminate at Major Mackenzie Drive.

The Ministry has reviewed the information provided relative to its current understanding of the interests of First Nation and Métis communities in the area and has determined that it may have the potential to affect First Nation and Métis communities who hold or claim Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982.

As you are aware, the Government of Ontario (the "Crown") has a constitutional duty to consult and accommodate First Nation and Métis communities when Crown project approvals may lead to an appreciable adverse impact on established or asserted Aboriginal or treaty rights. While the legal duty to consult falls on the Crown, the Crown may delegate the day-to-day, procedural aspects of consultation to project proponents. The Ministry of the Energy, Northern Development and Mines is delegating the procedural aspects of consultation to Enbridge through this letter.

Based on the Crown's preliminary assessment of First Nation and Métis community rights and project impacts, the following Aboriginal communities should be consulted on the basis that they have or may have constitutionally protected Aboriginal or treaty rights that may be adversely affected by the Project:

Community	**Mailing Address**
Alderville First Nation	11696 Line Road 2 Roseneath, ON K0K 2X0
Curve Lake First Nation	22 Winookeedaa Road Curve Lake, ON K0L1R0
Hiawatha First Nation	123 Paudash Street Hiawatha, ON K9J 0E6
Huron Wendat First Nation *	255, place Chef Michel Laveau Wendake, QC G0A 4V0
Mississaugas of the Credit First Nation	2789 Mississauga Road R.R. #6 Hagersville, ON N0A 1H0
Mississaugas of Scugog Island First Nation	Administration Building 22521 Island Road Port Perry, ON L9L 1B6

Note: * interests are specific to archeological resources

This rights-based consultation list is based on information that is subject to change. First Nation and Métis communities may make new rights assertions at any time, and other developments (e.g. the discovery of Aboriginal archaeological sites) can occur that may require additional First Nation and/or Métis communities to be notified and/or consulted. If you become aware of potential rights impacts on communities that are not listed above at any stage of the consultation and approval process, kindly bring this to the attention of the Ministry with any supporting information regarding the claim. The Ministry will then assess whether it is necessary to include the community on the rights-based consultation list above.

It is the Ministry's expectation that Enbridge will communicate directly with the communities listed above, and that Enbridge will:

- Notify the communities that Enbridge has been delegated the procedural aspects of consultation by the Ministry of Energy, Northern Development and Mines on behalf of Ontario.
- Notify the communities that they may contact the Crown directly should they have any questions or concerns.
- Provide the communities with the following contact information should they wish to communicate directly with the Ministry:

  Raina Crasto
  Policy Advisor, Indigenous Energy Policy
  Ministry of Energy, Northern Development and Mines
  416-326-4571 / Raina.crasto@ontario.ca

- Please copy the Ministry contact when communicating the above information.

The Ministry relies on consultation conducted by proponents when it assesses the Crown's obligations and directs proponents during the regulatory process. Enbridge's responsibilities for procedural aspects of consultation include:

- Providing the Indigenous communities with timely notice of the project for the purposes of considering possible impacts on their Aboriginal and/or treaty rights;

- In that notice, clearly stating that Enbridge has been delegated the procedural aspects of consultation by the Ministry of Energy, Northern Development and Mines on behalf of Ontario for the project.

- Providing Indigenous communities with information about the project including anticipated impacts, and information on project timelines;

- Following up with the Indigenous communities to ensure they have received project information and that they are aware of the opportunity to express comments and concerns about the project;

- Explaining the regulatory and approval processes that apply to the project;

- Gathering information about how the project may adversely impact the relevant Aboriginal and/or treaty rights (for example, hunting, fishing) or sites of cultural significance (for example, burial grounds, archaeological sites);

- Considering the comments and concerns raised by Indigenous communities and providing responses;

- Where appropriate, discussing accommodation, including mitigation or other measures to address potential adverse impacts on Aboriginal and/or treaty rights;

- Where appropriate, developing and discussing with the Crown appropriate accommodation measures;
- Taking reasonable steps to foster positive relationships with the Indigenous communities;
- Bearing the reasonable costs associated with these procedural aspects of consultation; and
- Maintaining records of activities in relation to carrying out the delegated procedural aspects of consultation and providing information to the Ministry.

If you have any questions about this letter or require any additional information, please contact Raina Crasto at 416-326-4571 or Raina.crasto@ontario.ca

Sincerely,

[redacted]

A/Manager
Indigenous Energy Policy

C: Ontario Pipeline Coordinating Committee (OPCC)

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

1 message

[redacted] <[redacted]@enbridge.com> Wed, Jul 3, 2019 at 5:58 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]
Sent: Wednesday, July 03, 2019 5:58 PM
To: [redacted]
Subject: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

Hi [redacted]

How are you? I hope you are doing well. I just wanted to provide you with an update regarding the proposed Power to Gas Project. We discussed this project awhile back. It's the one where we are planning to inject up to 2% of hydrogen into our natural gas system to help offset the energy we use with green energy.

I wanted to share with you the attached open house invitation, in both English and Mandarin, that was distributed to roughly 33,000 homes and businesses that live in the Project area (City of Markham). We'll also be running the invitation as an ad in the Markham Economist and Sun (July 4), and the Ming Pao (July 6). If you have any questions about the Project, or the Information Session, please don't hesitate to reach out to me. I realize the location of the information session is quite a drive from the community but if you are able / interested to attend on Tuesday, July 9, please let me know. It would be great to see you as always.

On a separate note, I know you have been just a bit busy…like running for Chief! I really hope you get in. The community needs someone like you in a leadership position. Sucks for Scugog but great for Alderville!

Talk soon!

[redacted]

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

July 2019 OpenHouse_v04.pdf
555K

You're Invited to an Information Session

Please join us for another information session about the proposed Low-Carbon Energy Project in Markham. Learn about hydrogen blending, why Enbridge Gas supports this technology, why it's good for our customers, and good for the environment.

Enbridge Gas is proposing a project to blend a small amount of hydrogen gas into our existing natural gas network, to reduce greenhouse gas emissions. Enbridge Gas operates a facility which converts electrical energy to hydrogen gas, which would be injected into the existing natural gas network if the project is approved.

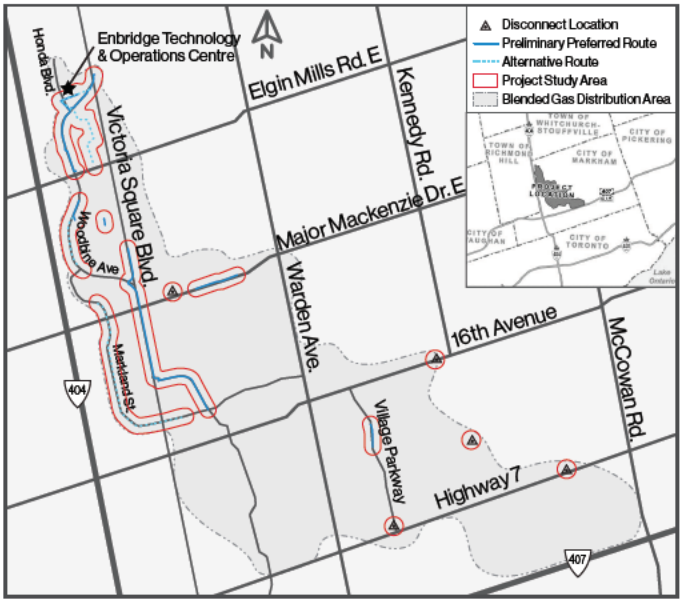
The blended gas would be distributed within the shaded area outlined on the map. As part of the project, Enbridge Gas would be installing approximately 1.3 km of pipe in phase one and approximately 5.5 km of pipe in phase two.

Hydrogen Blending Information Session

Date: Tuesday, July 9, 2019
Time: Drop in from 5-7 p.m.
Location: Enbridge Technology and Operations Centre
101 Honda Blvd, Markham, Ontario

For more information about the proposed project and hydrogen blending, please visit: **http://enbridgegas.com/LowCarbonEnergyProject**.

If you have any questions, please submit them to **LowCarbonEnergyEA@dillon.ca**.



Please visit us online:

enbridgegas.com **@enbridgegas**

If you have a natural gas emergency, please call: **1-866-763-5427**



Join us and enter to win an Ecobee
(Valued at $300)

ENBRIDGE
Life Takes Energy®

邀请您参加宣讲会

关于提案的万锦市低碳能源项目，我们将再次举办宣讲会，敬请参加。 了解氢气混合技术、为什么 Enbridge Gas 支持这种技术、为什么它对我们的顾客有好处、以及为什么它对环境有好处。

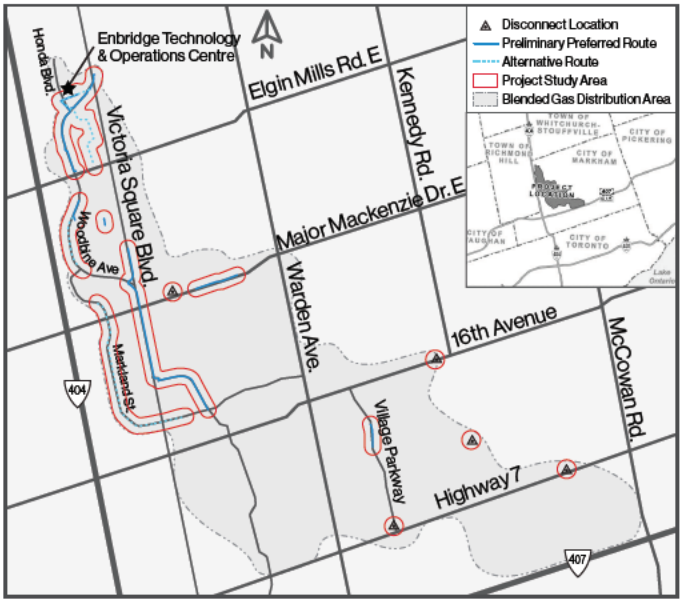
Enbridge Gas 提案了一个项目，将少量氢气混入我们的现有天然气管网，以减少温室气体排放。如果该项目得到批准，Enbridge Gas 有设施将电力转换为氢气，再将氢气注入现有天然气管网。

混合气体将在地图上所示区域内输配。作为该项目的一部分，Enbridge Gas 将在项目一期铺设约1.3公里的管道，项目二期铺设约5.5公里的管道。

氢气混合宣讲会

日期： 2019 年7月9日星期二
时间： 下午5点至7点间欢迎光临
地点： Enbridge Technology and Operations Centre
101 Honda Blvd, Markham, Ontario

请浏览 **http://enbridgegas.com/LowCarbonEnergyProject**，了解提案项目和氢气混合的更多信息。如果您有任何疑问，请将您的疑问提交至 **LowCarbonEnergyEA@dillon.ca**。



请访问我们的社交媒体：

enbridgegas.com **@enbridgegas**

如果您有天然气紧急情况，请致电 **1-866-763-5427**



ENBRIDGE
Life Takes Energy®

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

Fwd: [External] RE: Power to Gas Stage 2 Surveys

1 message

[redacted] <[redacted]@enbridge.com> Thu, Aug 15, 2019 at 10:54 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

Begin forwarded message:

From: [redacted] <msanford@scugogfirstnation.com>
Date: August 15, 2019 at 3:01:45 PM GMT+2
To: [redacted] <[redacted]@enbridge.com>
Subject: [External] RE: Power to Gas Stage 2 Surveys

EXTERNAL: PLEASE PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe.

Hi Sonia,

Thanks for the update. Unfortunately we have no available monitors from MSIFN. Yes, it would have been nice to have a community member in the field for this. What about reaching out to Curve Lake?

Have a great day and be talking to you soon!

In Spirit of Kindness,
[redacted]
Consultation, Lands & Membership Admin Assistant/IRA
Mississaugas of Scugog Island First Nation
22521 Island Road
Port Perry, ON
L9L 1B6
Phone: (905) 985-3337 ext. 229
Fax: (365) 800-1247
Email: [redacted]@scugogfirstnation.com

Mississaugas of Scugog Island First Nation Notice & Disclaimer
This e-mail, and any attachments thereto, is intended only for use by the addressee(s) named herein and may contain legally privileged and/or confidential information. If you are not the intended recipient of this e-mail, you are hereby notified that any dissemination, distribution or copying or this e-mail, and any attachments thereto is strictly prohibited. If you have received this e-mail in error, you are required to immediately notify me by telephone (above) and permanently delete the original and any copy of this e-mail and any printout thereof
---

-----Original Message-----
From: [redacted] <[redacted]@enbridge.com>
Sent: Thursday, August 15, 2019 6:10 AM
To: [redacted] <[redacted]@scugogfirstnation.com>
Subject: Power to Gas Stage 2 Surveys

Hi [redacted]

I hope you are doing well and enjoying the last bit of summer remaining. As a follow up to the Enbridge Power to Gas Project, I would like to provide you with some advance notice regarding the Stage 2 Archaeological assessment field work. Enbridge is planning to begin the field work sometime in the first half of September pending weather and successfully securing locates.

I will be in touch a week prior to commencing the field work to confirm the details but in the meantime, can you please let me know if you are planning to send a MSIFN monitor ? I think it would be great to have a community member participate in the field work if possible.

I look forward to hearing back from you at your earliest convenience.

Miigwech,

Sonia [redacted]

Sr. Advisor, Municipal & Indigenous Affairs Enbridge Gas Inc

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Power to Gas Stage 2 Surveys

1 message

[redacted] <[redacted]@enbridge.com> Thu, Oct 3, 2019 at 1:40 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

-----Original Message-----
From: [redacted] <[redacted]@enbridge.com>
Sent: Thursday, October 3, 2019 1:40 PM
To: [redacted]@scugogfirstnation.com
Subject: Enbridge Power to Gas Stage 2 Surveys

Hi [redacted]

How are you? I hope you are doing well!

Prior to Dave's departure, I provided Dave with information regarding the proposed Enbridge Power to Gas Project located in Markham, ON. One of the items that I always kept Dave looped in on was regarding the archaeological assessments for the project and wanted to provide you with some recent developments regarding the project.

The Stage 2 archaeological assessment required for the Power to Gas Project is specific to phase 2 of the project that (as of recently) is now being deferred to next year. Based on the results of the Stage 1 AA that was already completed for both phases (one and two) of the project, a Stage 2 AA was not recommended for Phase 1 of the project but was recommended for Phase 2. Once we have project timelines established for phase 2 of the project, which will involve stage 2 AA work, I will be in touch with Scugog First Nation so we can ensure we have a representative from MSIFN participate in the Stage 2 field assessments.

I have also attached a copy of the Environmental Report for the Enbridge Low-Carbon Energy Project (also known as the Power to Gas Project) - not sure why the project name changed??. As always, please don't hesitate to reach out with any questions you may have.

https://www.enbridgegas.com/-/media/Extranet-Pages/Projects-tab-links/Low-Carbon-Energy-Project/EGI_LCEP_Redacted_Secured_13-May-2019.ashx?la=en&hash=DBBBCDF7CF53E778FD5627D1858AA00610ED7DD1

Many thanks in advance and I hope to see you soon!
[redacted]

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road
North York, ON M2J 1P8

enbridge.com
Integrity. Safety. Respect.

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Power to Gas Stage 2 Surveys

1 message

[redacted] <[redacted]@enbridge.com> Thu, Oct 3, 2019 at 1:45 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

-----Original [redacted]
From: [redacted] <[redacted]@enbridge.com>
Sent: Thursday, October 3, 2019 1:45 PM
To: [redacted]@scugogfirstnation.com
Subject: FW: Enbridge Power to Gas Stage 2 Surveys

Hi [redacted]

Is Monica still at Scugog FN? I sent her the below email but I got a delivery failure message. Perhaps I got her email wrong?

Regards,
[redacted]

-----Original Message-----
From: [redacted] <[redacted]@enbridge.com>
Sent: Thursday, October 3, 2019 1:42 PM
To: [redacted]@scugogfirstnation.com
Subject: Enbridge Power to Gas Stage 2 Surveys

Hi [redacted]

How are you? I hope you are doing well!

Prior to Dave's departure, I provided Dave with information regarding the proposed Enbridge Power to Gas Project located in Markham, ON. One of the items that I always kept Dave looped in on was regarding the archaeological assessments for the project and wanted to provide you with some recent developments regarding the project.

The Stage 2 archaeological assessment required for the Power to Gas Project is specific to phase 2 of the project that (as of recently) is now being deferred to next year. Based on the results of the Stage 1 AA that was already completed for both phases (one and two) of the project, a Stage 2 AA was not recommended for Phase 1 of the project but was recommended for Phase 2. Once we have project timelines established for phase 2 of the project, which will involve stage 2 AA work, I will be in touch with Scugog First Nation so we can ensure we have a representative from MSIFN participate in the Stage 2 field assessments.

I have also attached a copy of the Environmental Report for the Enbridge Low-Carbon Energy Project (also known as the Power to Gas Project) - not sure why the project name changed??. As always, please don't hesitate to reach out with any questions you may have.

https://www.enbridgegas.com/-/media/Extranet-Pages/Projects-tab-links/Low-Carbon-Energy-Project/EGI_LCEP_Redacted_Secured_13-May-2019.ashx?la=en&hash=DBBBCDF7CF53E778FD5627D1858AA00610ED7DD1

Many thanks in advance and I hope to see you soon!
[redacted]

[redacted] _____

Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region Public Affairs and Communications

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Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Update - Enbridge Gas Power to Gas Project

[redacted] <[redacted]@enbridge.com> Fri, Mar 20, 2020 at 9:54 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

ENBRIDGE GAS INC.
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500 Consumers Road

North York, ON M2J 1P8

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From: Sonia Fazari <Sonia.Fazari@enbridge.com>
Sent: Friday, March 6, 2020 2:49 PM
To: msandford@scugogfirstnation.com
Subject: Update - Enbridge Gas Power to Gas Project

Hi Monica,

I hope you are doing well!

I'm not sure who to send this update to in the community regarding the Power to Gas Project? I was working with Dave Mowat on this project but now that he is no longer there I figured I would send you the information for your review and feedback. I have attached the original email that I sent to you and Dave about this project but it was Dave that I met with about the project before he left.

This project is taking place in Markham where we are blending Hydrogen (green renewable gas) into the distribution system. Basically, we are taking oxygen and water, separating the molecules and creating Hydrogen – which is clean, zero carbon emissions and injecting it into our distribution system. This is the first of its kind in North America and this is a pilot project Enbridge is undertaking in Markham.

There are no significant changes to the project apart from the fact that the project team has decided to go with the alternate route instead of the preferred route and I wanted you to be aware of this change. I've attached a copy of the Notice of Project Change and Draft Addendum to the Environmental Report outlining the changes to the proposed project. It would be great if we can meet so I can provide you with an overview of the project and answer any questions you may have.

[redacted] I know how busy you are with everything else on your plate and I would like to offer capacity funding for your time.

The good thing is the attached addendum to the environmental report is an easy read but it's still time consuming and I want to ensure MSIFN has capacity funding for this and to assist in any way I can. Are you possibly available to meet on March 16th?

Have a great weekend and look forward to connecting with you soon!

Miigwech,

[redacted]

[redacted] [redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

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---------- Forwarded message ----------
From: Sonia Fazari <Sonia.Fazari@enbridge.com>
To: Dave Mowat <dmowat@scugogfirstnation.com>, "msanford@scugogfirstnation.com"

<[redacted]@scugogfirstnation.com>
Cc: "[redacted] (ENERGY) ([redacted]@ontario.ca)" <[redacted]@ontario.ca>
Bcc:
Date: Fri, 8 Mar 2019 20:49:33 +0000
Subject: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

Hi [redacted] and [redacted]

I hope you are both doing well.

I'm emailing to provide some advance materials about our proposed Power to Gas Pipeline Project in the City of Markham. Please find attached the Project Notification letter, Notice of Commencement, map of the proposed location and a copy of the Duty to Consult letter issued by the Ministry of Energy, Northern Development & Mines for your information and reference.

Please don't hesitate to contact me with any questions you may have regarding the proposed project.

I look forward to connecting with you soon.

[redacted]
Sr. Advisor, Community Engagement, Eastern Region

Public Affairs and Communications

—

ENBRIDGE PIPELINES INC.
TEL: 416-753-6962 | CELL: 416-525-2497
2225 Sheppard Avenue East, Atria III, 17th Floor

North York, ON M2J 5C2

enbridge.com

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Enbridge
500 Consumers Road
North York, ON
M2J 1P8

March 6, 2020

[redacted] [redacted] Consultation Department
Mississaugas of Scugog Island First Nation
22521 Island Road
Port Perry, ON
L9L 1B6

Re: Notice of Project Change and Draft Environmental Report Amendment- Low Carbon Energy Project (LCEP)

Dear [redacted]

I am writing to advise you of a project change and draft Environmental Report Amendment on the proposed 2019 Low Carbon Energy Project (LCEP) also known as the Power to Gas Project. Enbridge Gas Inc. (Enbridge) retained Dillon Consulting Limited (Dillon) to undertake an environmental and socio-economic effects assessment and amended report (Environmental Report) for the proposed Low Carbon Energy Project (the Project).

Enbridge filed a Leave-to-Construct (LTC) application with the Ontario Energy Board (OEB) on December 20, 2019. The application included the Environmental Report (completed in May 2019), as well as two Addendums. Addendum #1 was completed in September 2019 and addressed comments from the Toronto and Region Conservation Authority. Addendum #2 was completed in December 2019 and provided updated Project mapping depicting only Phase 1 of the Project, as Phase 2 was removed from the Project scope.

Since the completion of the Environmental Report and the Addendums, Enbridge has made changes to the scope of the Project that require additional study and review. As such, Dillon has prepared an Amendment to the Environmental Report (draft version enclosed), which documents the results of Dillon's review of Enbridge's proposed changes to the Project. **These proposed Project changes include: (1) the selection of the Phase 1 Alternative Route as the new Preferred Route; and, (2) the addition of three small facilities on Enbridge owned property into the Environmental Report scope.**

Mississaugas of Scugog Island First Nation is invited to provide comments in relation to this Project change. Specifically, Enbridge and Dillion are seeking information about any adverse impacts that the proposed project change may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts. Please send any comments to the attention of the undersigned, or by email to LowCarbonEnergyEA@dillon.ca at your earliest convenience. If you require additional information, please do not hesitate to contact me. We would appreciate your shared knowledge or comments for consideration regarding this Project change by March 24, 2020.

If you have questions or concerns regarding the proposed Project change, please do not hesitate to contact me at any time. I appreciate your attention to this matter and look forward to our ongoing collaboration on this project.

Sincerely,

[redacted]

Enclosures Amendment to the Environmental Report

PROPOSED ENBRIDGE LOW-CARBON ENERGY PROJECT

NOTICE OF PROJECT CHANGE

CITY OF MARKHAM, ONTARIO

ENBRIDGE GAS INC.

Last year, Enbridge Gas Inc. (Enbridge) retained Dillon Consulting Limited (Dillon) to undertake a route selection and environmental and socio-economic impact study and report (Environmental Report) for the proposed Low-Carbon Energy Project (the Project). The Environmental Report was completed according to the Ontario Energy Board (OEB) Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016). Following completion of the Environmental Report, Enbridge provided additional information regarding the Project in two Addendums. Addendum #1 was completed in September 2019 and addressed comments from the Toronto and Region Conservation Authority. Addendum #2 was completed in December 2019 and provided updated Project mapping depicting only Phase 1 of the Project, as Phase 2 was removed from the Project scope. Enbridge filed a Leave-to-Construct (LTC) application with the OEB on December 20, 2019.

Since the completion of the Environmental Report and the Addendums, Enbridge has made changes to the scope of the Project that require additional study and review. Dillon is preparing an Amendment to the Environmental Report (the Amendment) in consideration of Enbridge's proposed changes to the Project. These proposed Project changes include: (1) the selection of the Phase 1 Alternative Route as the Preferred Route; and, (2) the addition of three small facilities on Enbridge-owned property at 101 Honda Boulevard into the Environmental Report scope. The objective of the Amendment is to determine if there are any additional potential environmental or socio-economic impacts as a result of the proposed changes that were not captured in the assessment already completed in the Environmental Report.

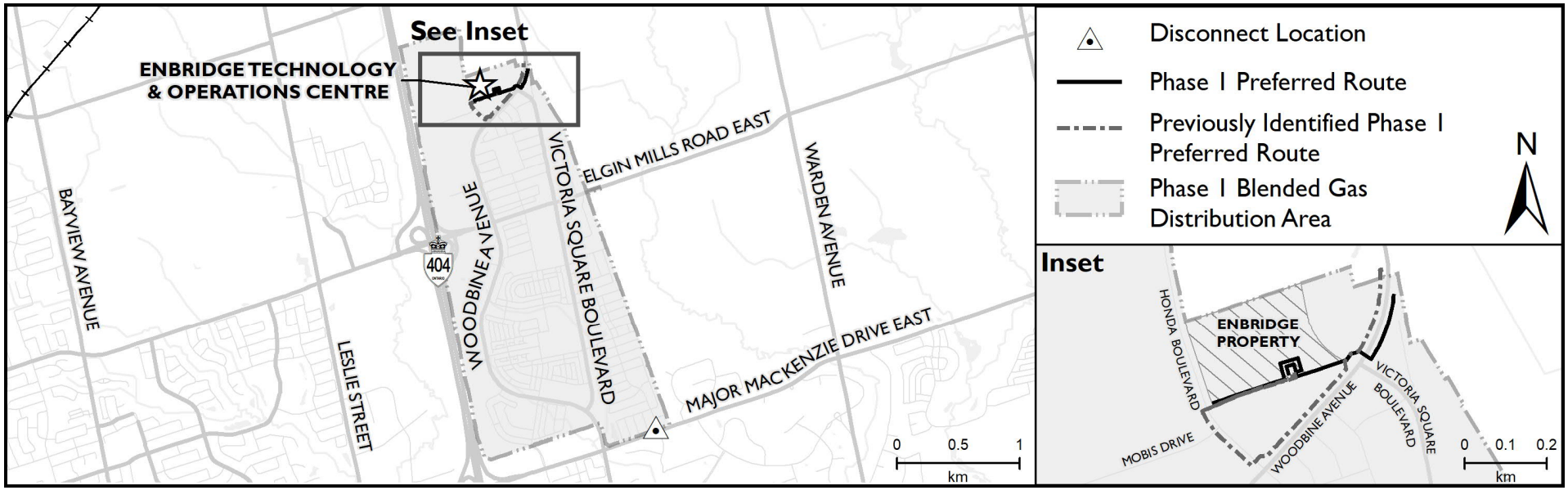
The Amendment to the Environmental Report is planned to be completed by March 31, 2020, after which Enbridge will file the Amendment with the OEB. The OEB's review and approval is required before the Project can proceed. If approved, construction of the Project is currently anticipated to begin by January 2021, at the earliest.

Stakeholder consultation and Indigenous engagement continue to be key components of the Project. We are interested in hearing from you regarding issues/concerns that you may have in relation to the proposed changes to this Project. Please provide feedback to the Project email at LowCarbonEnergyEA@dillon.ca or by contacting one of the individuals listed in this Notice by March 22, 2020.

Tanya Turk
Environmental Advisor
Enbridge Gas Inc.
101 Honda Boulevard
Markham, ON L6C 0M6
(416) 495-3103

Tristan Lefler
Environmental Assessment
Project Manager
Dillon Consulting Limited
51 Breithaupt Street, Suite 200
Kitchener, ON N2H 5G5
(519) 571-9833
LowCarbonEnergyEA@dillon.ca

Project website:
https://www.enbridgegas.com/about-us.
Click on the "Projects" tab and select "Low-Carbon Energy Project"



Enbridge Gas Inc.
Low-Carbon Energy Project
Environmental Report Amendment

Prepared for:

Enbridge Gas Inc.
101 Honda Blvd.
Markham, Ontario
L6C 0M6

Prepared by:

Dillon Consulting Limited
235 Yorkland Blvd., Suite 800
Toronto, Ontario
M2J 4Y8

February 2020



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A Consultation Update – Summary and Logs

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LIST OF ACRONYMS AND ABBREVIATIONS

Dillon	Dillon Consulting Limited
ECA	Environmental Compliance Approval
Enbridge	Enbridge Gas Inc.
HP	high pressure
IP	intermediate pressure
km	kilometre(s)
LTC	Leave-to-Construct
m	metre(s)
MECP	Ontario Ministry of the Environment, Conservation and Parks
N/A	not applicable
NPS	nominal pipe size
OEB	Ontario Energy Board
psig	pounds per square inch gauge
the Project	Low-Carbon Energy Project
TOC	Technology and Operations Centre

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1.0 INTRODUCTION

Enbridge Gas Inc. (Enbridge) retained Dillon Consulting Limited (Dillon) to undertake a route selection and environmental and socio-economic impact study and report (Environmental Report) for the proposed Low-Carbon Energy Project (the Project).

The Environmental Report (Dillon, 2019a) for the Project was completed in May 2019. Following completion of the Environmental Report, Enbridge provided additional information regarding the Project in two Addendums. Addendum #1 (Dillon, 2019b) was completed in September 2019 and addressed comments from the Toronto and Region Conservation Authority. Addendum #2 (Dillon, 2019c) was completed in December 2019 and provided updated Project mapping depicting only Phase 1 of the Project, as Phase 2 was removed from the Project scope. Enbridge filed a Leave-to-Construct (LTC) application for the Project with the Ontario Energy Board (OEB) on December 20, 2019.

Since the completion of the Environmental Report and the Addendums (Dillon, 2019a; 2019b; 2019c), Enbridge has made changes to the scope of the Project that require additional study and review. This report constitutes an Amendment to the Environmental Report (Amendment #1) and provides the results of Dillon's review of Enbridge's proposed changes to the Project. These proposed Project changes include:

- The selection of the Phase 1 Alternative Route as the Preferred Route; and,
- The addition of three small facilities on Enbridge-owned property into the Environmental Report scope.

The proposed Project changes are illustrated on **Figure 1** and are described in further detail in **Section 3**.

The objective of this Amendment is to determine if there are any additional potential environmental or socio-economic impacts as a result of the proposed changes that were not captured in the assessment already provided in the Environmental Report.

Stakeholder consultation and Indigenous engagement continue to be key components of the study. This draft Amendment is being shared with interested parties to identify any issues and concerns related to the proposed Project changes. Following the provision of this draft Amendment, interested parties are invited to provide comments, questions, or concerns to the Project Team within a 30-day period. This feedback will be documented as a component of the final Amendment that will be filed with the OEB (see **Section 6** for further details).

This Amendment is to be read in conjunction with the Environmental Report and the Addendums (Dillon, 2019a; 2019b; 2019c). Information from the Environmental Report and the Addendums is not repeated in this Amendment, except where required to provide context.

The Environmental Report and the Addendums are available for review by interested stakeholders on the Enbridge Project website at <https://www.enbridgegas.com/about-us>. Click on the "**Projects**" tab and select "**Low-Carbon Energy Project**".

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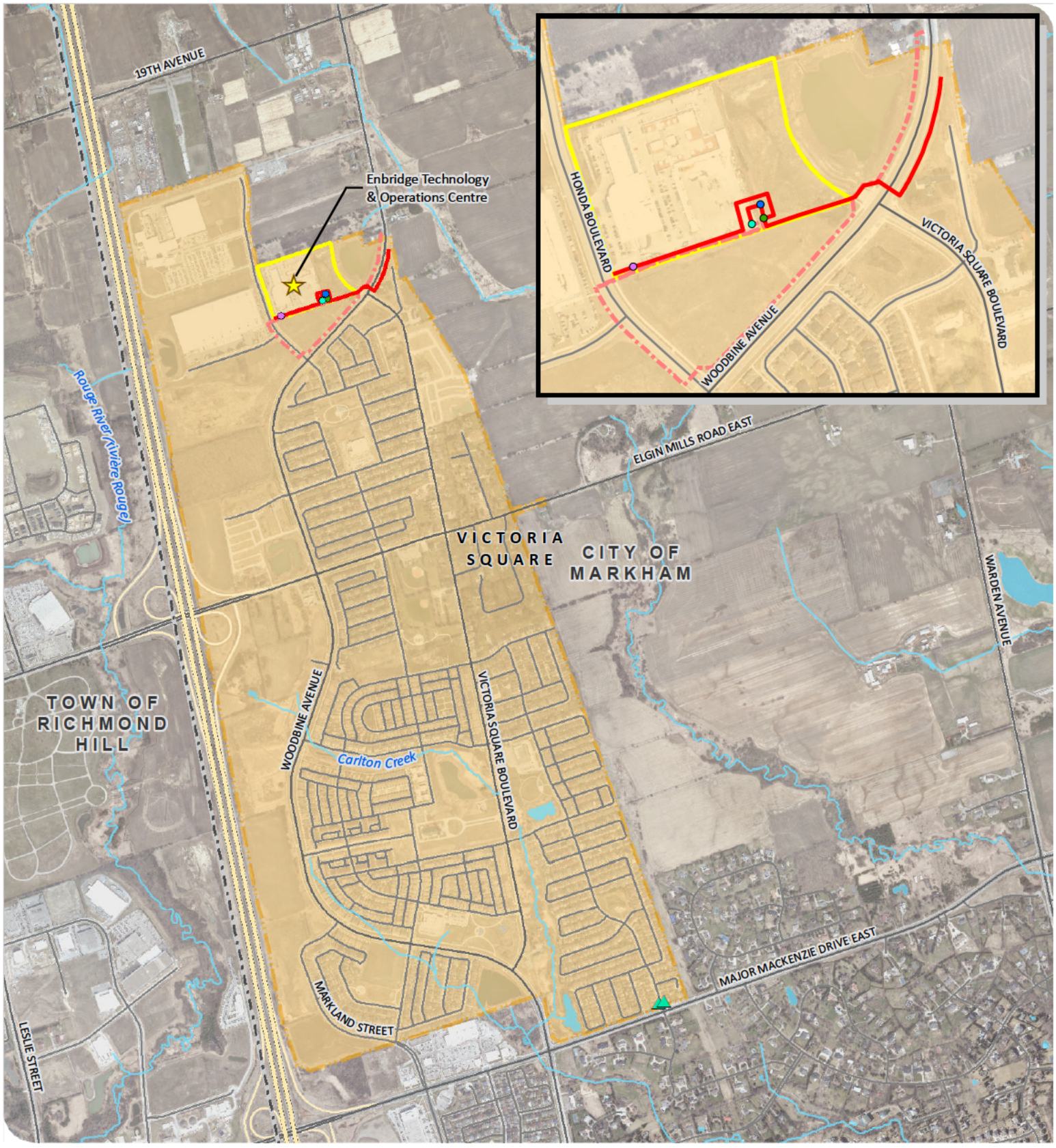

ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

PROPOSED PIPELINE ROUTES

FIGURE 1

- Phase 1 Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Phase 1 Blended Gas Distribution Area
- Enbridge Property
- Watercourse
- Waterbody
- Municipal Boundary

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MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION
MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:20,000

0 0.125 0.25 0.5 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12

2.0 PROJECT BACKGROUND

The Project was initially proposed as a two-phase installation of approximately 6.7 kilometres (km) of natural gas pipeline in the City of Markham. Addendum #2 to the Environmental Report resulted in the removal of Phase 2 from the Project scope. As such, the Project scope was reduced to Phase 1 only, which would involve the installation of approximately 1.3 km of nominal pipe size (NPS) 6-inch and NPS 8-inch pipe, primarily along Woodbine Avenue and Honda Boulevard, ending at Enbridge's Technology and Operations Centre (see **Figure 1**).

The objective of the Project is to blend a small amount of hydrogen gas (up to 2% by volume) into a small, carefully selected portion of Enbridge's existing natural gas network in order to reduce greenhouse gas emissions. An affiliate of Enbridge Gas Inc. operates a Power-to-Gas facility at the Technology and Operations Centre, which uses surplus electricity to 'split' water molecules into hydrogen and oxygen using electrolyzer technology. The hydrogen gas would be injected into the existing natural gas network and blended gas would be distributed to the Victoria Square neighbourhood, as illustrated on **Figure 1**.

The Environmental Report (Dillon, 2019a) was completed by Dillon in May 2019 and conforms to the OEB *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition* (2016).

The Environmental Report involved undertaking an inventory of physical, natural and socio-economic features within identified Study Areas (see Section 3, Physical, Natural and Socio-Economic Environment Setting in the Environmental Report). Potential alternative routes were identified and then evaluated against one another to select Preferred Routes for each Project Phase. The route selection evaluation process is detailed in Section 5 of the Environmental Report. Public involvement played an important role in this process.

In accordance with the OEB Guidelines, Enbridge carried out a comprehensive stakeholder consultation program to consult and communicate with federal, provincial, and municipal government agencies, Indigenous communities, directly and indirectly affected landowners, residents, and interested members of the public. The stakeholder consultation program methods and results are detailed in Section 4 of the Environmental Report.

Potential environmental and socio-economic impacts and associated mitigation measures are detailed in Section 6 of the Environmental Report. Mitigation measures were recommended to avoid or reduce potential negative impacts to environmental and socio-economic features. Based on the original Project scope and the adoption of mitigation measures recommended in the Environmental Report, Dillon did not predict any long-term impacts from the construction and operation of the Project.

Following the completion of the Environmental Report in May 2019, Enbridge has revised the scope of the Project as detailed in **Section 3**.

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3.0 PROPOSED PROJECT CHANGES

Enbridge is no longer proposing to construct the Phase 1 Preferred Route identified in the Environmental Report. A slight variation of the Phase 1 Alternative Route has now been identified as the Preferred Route (see **Figure 1**).

3.1 RATIONALE

The following provides the rationale for the proposed Project changes. Enbridge has identified these proposed changes as a result of the ongoing detailed engineering design process, the acquisition of new land adjacent to Enbridge's existing Technology and Operations Centre (TOC) property at 101 Honda Boulevard, and stakeholder consultation.

Proceeding with the Phase 1 Preferred Route as described in the Environmental Report would have resulted in added congestion within the TOC Operations Compound, with added safety concerns. The Operations Compound currently has live traffic from operational vehicles, and it houses the Power-to-Gas facilities, the refuelling facilities for compressed natural gas vehicles, and an inventory of materials to support raw material for operations, which are accessed multiple times per day. As part of the long-term plan for the TOC, Enbridge recently acquired new land adjacent to the TOC property, which will now better accommodate the hydrogen-blending facilities required for the Project.

At the Project open houses held in 2019, concerns were raised regarding disruptions to the community due to construction along Woodbine Avenue, including traffic congestion, noise, dust, and accessibility. The new Preferred Route addresses construction concerns, as it results in a reduced duration of construction on Woodbine Avenue, thereby reducing effects such as traffic disruptions dust, and noise. In addition, selecting the new Preferred Route would further add efficiencies to the Project as it would reduce the length of the pipe needed by approximately 40%, resulting in a reduced cost for the Project. Hosting the facilities in the new location also enhances safety at the current site as it reduces the impact of construction and has the added benefit of eliminating the need for construction on Honda Boulevard.

3.2 DESCRIPTION OF THE NEW PREFERRED ROUTE

The new Preferred Route would consist of the installation of approximately 755 metres (m) of new pipeline, including approximately 25 m of NPS 8-inch intermediate pressure (IP) plastic pipe, 380 m of NPS 6-inch extra high pressure (HP) steel pipe, and 350 m of NPS 6-inch HP steel pipe.

The new Preferred Route would begin at a tie-in point along an existing Enbridge pipeline located on the east side of Woodbine Avenue, approximately 300 m northeast of the Enbridge Technology and Operations Centre. It would travel south to the intersection of Woodbine Avenue and Victoria Square Boulevard where it would then turn west and cross under Woodbine Avenue and continue along the southern edge of the Enbridge property at 101 Honda Boulevard. The pipeline would be connected to the proposed hydrogen-blending facilities on the Enbridge property and would continue west to Honda Boulevard where it would tie into another existing Enbridge pipeline (see **Figure 1**).

3.3 DESCRIPTION OF PROPOSED HYDROGEN-BLENDING FACILITIES

The facilities described here are a component of the current LTC application to the OEB that was submitted in December 2020, however, they were not within the scope of the Environmental Report at that time. Their new proposed location has resulted in them being added to the scope of the Environmental Report, and thus they are being assessed in this Amendment.

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The proposed Hydrogen Station and Hydrogen Blending Station, as well as a Remote Terminal Unit (RTU) building, will be located on a concrete pad within a fenced and gravelled compound on Enbridge's existing property at 101 Honda Boulevard. The purpose of this facility is to regulate the pressures of the natural gas and hydrogen prior to mixing and controlling the amount of hydrogen that is injected based on the measured flow of natural gas. The fenced compound will measure approximately 13 m × 25 m and the maximum height of the buildings will be 3.5 m.

The proposed District Station will also be located on Enbridge's existing property at 101 Honda Boulevard and will be nested inside an aluminum box measuring approximately 2 m × 2 m × 2 m. The purpose of the District Station is to reduce the gas pressure from the HP (175 psig) steel pipeline to the IP (55 psig) plastic pipeline for distribution.

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4.0 STUDY PROCESS AND PROJECT SETTING

Section 2 of the Environmental Report describes the study methods used in the Environmental Report, as well as the objectives and methods of stakeholder and Indigenous consultation. The same methods are applied in this Amendment.

Section 3 of the Environmental Report describes the environmental and socio-economic setting of the Project. There is no change to the setting information as a result of the proposed Project changes described in this Amendment, as the location of the Project remains the same (see **Figure 2** and **Figure 3** for mapped natural environment and socio-economic features, respectively). The footprint of the new Preferred Route and proposed hydrogen-blending facilities was covered by desktop and field studies conducted for the Environmental Report. Similarly, the Study Area identified for the Project (120 m buffer on each side of the proposed route for a total width of 240 m) remains the same as identified in the Environmental Report (see **Figure 4**).

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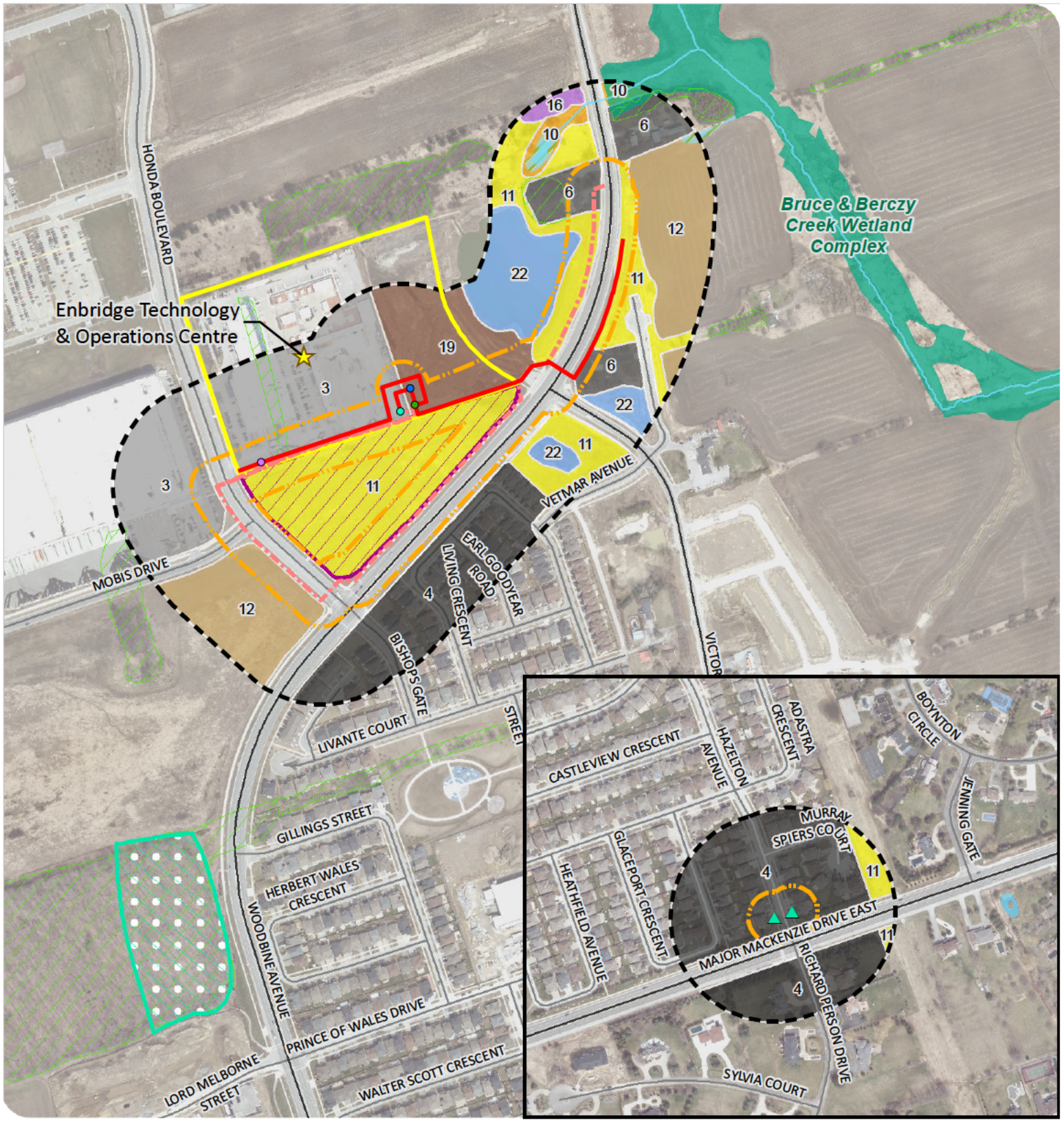

ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

NATURAL ENVIRONMENT FEATURES

FIGURE 2

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Study Area (120 m)
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody
- Unevaluated Wetland
- Provincially Significant Wetland
- Wooded Area (MNRF)
- Candidate Habitat Species of Conservation Concern
- Candidate SAR Bat Habitat and Significant Wildlife for Bat Maternity Colonies
- Potential Grassland Breeding Bird Habitat

Ecological Land Classification

- 3. CVC: Commercial and Institutional
- 4. CVR_1: Low Density Residential
- 6. CVR_4: Rural Property
- 10. MAM: Meadow Marsh
- 11. MEM: Mixed Meadow
- 12. OAGM1: Annual Row Crop
- 16. THD: Deciduous Thicket
- 19. Disturbed Ground
- 22. Stormwater Management Facility

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MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N
FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:6,000

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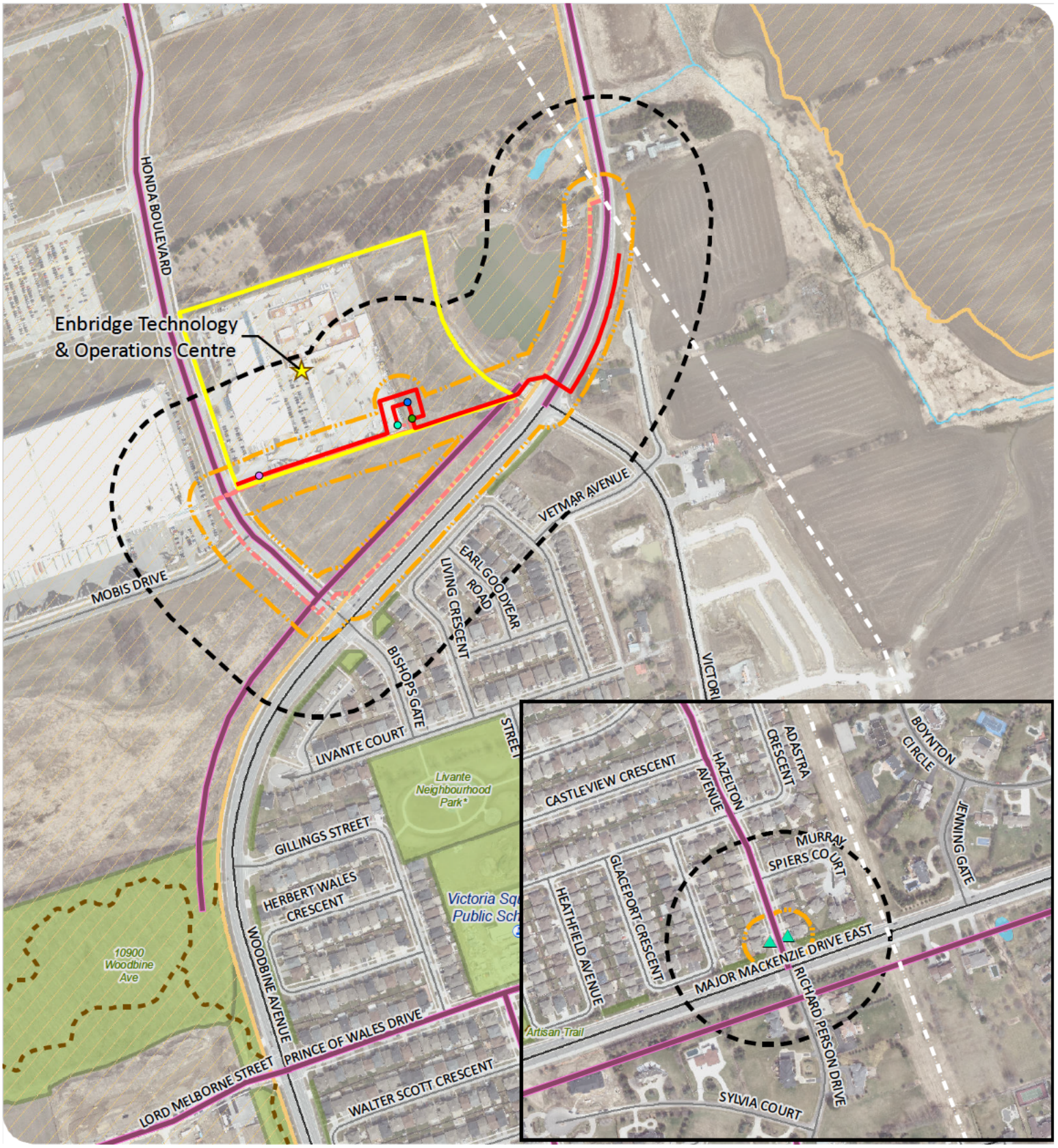
PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12



ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

SOCIO-ECONOMIC FEATURES

FIGURE 3

ENBRIDGE

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Study Area (120 m)
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody
- Educational Facility
- Hydro Line
- Trail
- Bicycle Route
- Business Park
- Park

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N
FILE LOCATION: I:\GIS\189005 - Enbridge

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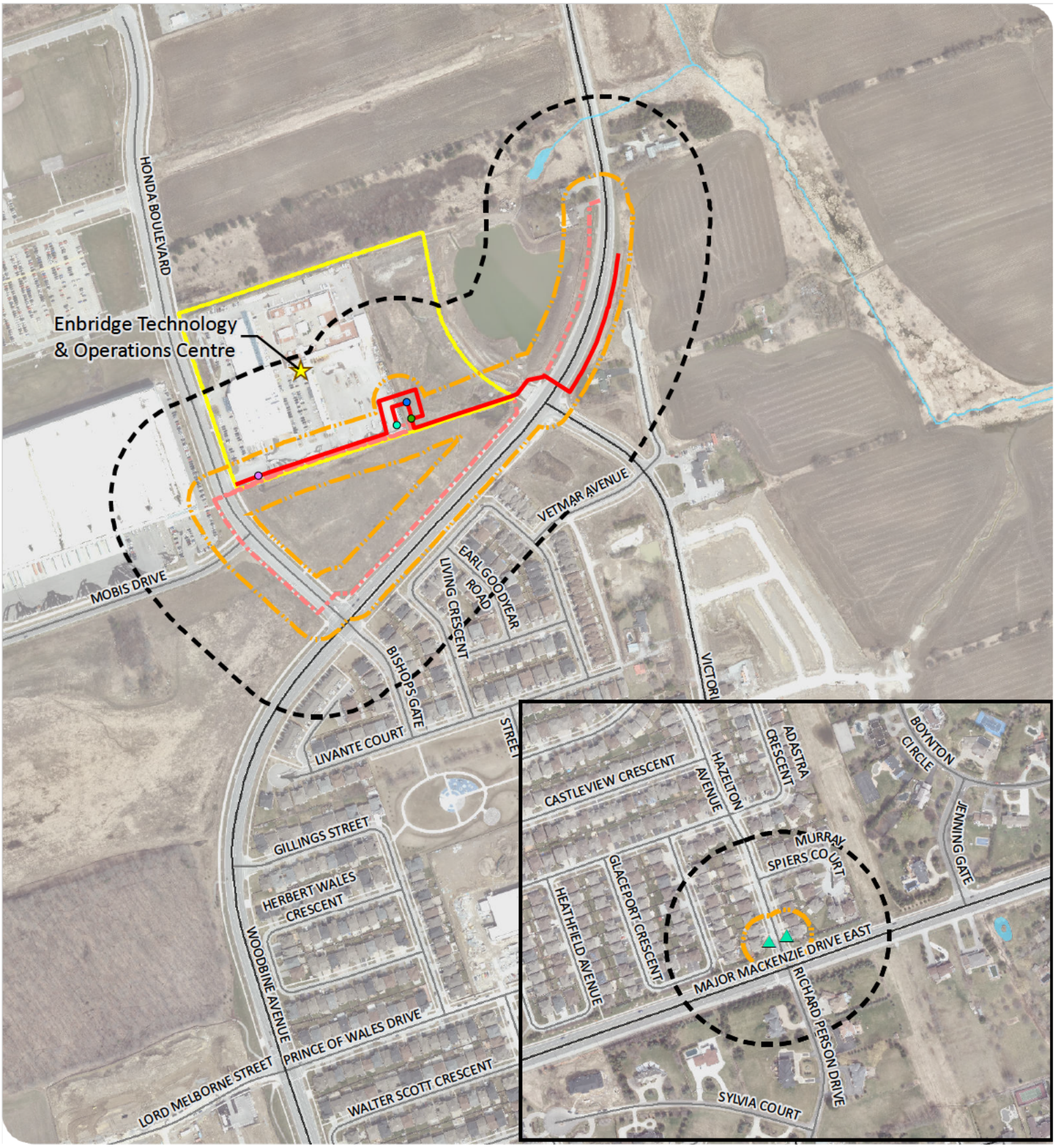
0 0.04 0.08 0.16 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12



ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

STUDY AREAS
FIGURE 4

ENBRIDGE

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Study Area (120 m)
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION
MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N
FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:6,000

0 0.04 0.08 0.16 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12

5.0 POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

Section 6 of the Environmental Report includes a detailed mitigation strategy based on potential impacts of the Project. This Amendment assesses the potential for previously unassessed/new impacts as a result of the proposed Project changes, and, where necessary, recommends additional mitigation measures. Select mitigation measures are illustrated on **Figure 5**.

This Amendment also considers potential changes in cumulative effects. Proposed developments within 1 km of the Project are listed in Section 7.3 of the Environmental Report, and additional developments identified by the Toronto and Region Conservation Authority are listed in Addendum #1. These proposed developments were reviewed to identify any potential changes to cumulative Project interactions as a result of the proposed Project changes.

5.1 NEW PREFERRED ROUTE

Since the new Preferred Route was previously evaluated as the Phase 1 Alternative Route in the Environmental Report, a new effects assessment is not deemed warranted and, instead, a comparison of constraints between the previously identified Phase 1 Preferred Route and the new Preferred Route is provided in the following subsections.

Considering the criteria used to evaluate the Phase 1 Preferred and Alternative Routes in Section 5 of the Environmental Report, there are few differences between the proposed changes in this Amendment relative to the original Project scope included in the Environmental Report.

BIOPHYSICAL CONSTRAINTS

There are no previously unidentified biophysical constraints associated with the new Preferred Route.

Neither the previously identified Phase 1 Preferred Route, nor the new Preferred Route, cross any waterbodies, watercourses, wetlands/wetland complexes, Special Policy Areas (i.e., Greenbelt), or Areas of Natural or Scientific Interest.

The new Preferred Route is located entirely within municipal road rights-of-way and on previously disturbed land owned by Enbridge.

SOCIO-ECONOMIC CONSTRAINTS

There are no previously unidentified socio-economic constraints associated with the new Preferred Route.

The new Preferred Route will have fewer impacts on the neighbourhood/residences to the south of Woodbine Avenue, as it crosses to the west side of Woodbine Avenue just north of Victoria Square Boulevard, before the commencement of the housing subdivisions. In comparison, the previously identified Phase 1 Preferred Route would have run parallel to Woodbine Avenue from the north tie-in point southwest to Honda Boulevard and would have resulted in a larger footprint adjacent to the residential area.

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TECHNICAL CONSTRAINTS

There are no previously unidentified technical constraints associated with the new Preferred Route.

The new Preferred Route has a shorter overall length (approximately 755 m as opposed to 1.3 km) and has only one road crossing (in comparison to three crossings associated with the previously identified Phase 1 Preferred Route).

SUMMARY

The new Preferred Route does not result in any material change to the biophysical, socio-economic, or technical constraints considered in the Environmental Report. There are minor advantages to the new Preferred Route over the previously identified Phase 1 Preferred Route including lesser impact on nearby residences (south of Woodbine Avenue), shorter overall length, and fewer road crossings.

The assessment of potential Project effects, cumulative effects, and recommended mitigation measures presented in the Environmental Report in regard to the Phase 1 Preferred Route remains unchanged as a result of the new Preferred Route. Consequently, no additional mitigation measures beyond those recommended in the Environmental Report are required.

5.2 PROPOSED HYDROGEN-BLENDING FACILITIES

As noted in **Section 3**, the proposed hydrogen-blending facilities will be located entirely within Enbridge's property at 101 Honda Boulevard on previously disturbed land.

Given the setting of the proposed hydrogen-blending facilities in relation to the previously evaluated Phase 1 Preferred and Alternative Routes, there are no additional constraints (biophysical, socio-economic, or technical) anticipated as a result of the proposed hydrogen-blending facilities, as they are located within the Study Area that was reviewed and assessed in the Environmental Report.

Enbridge will be applying for an Environmental Compliance Approval (ECA) from the Ontario Ministry of the Environment, Conservation and Parks (MECP) that will permit air and noise emissions associated with the proposed hydrogen-blending facilities. As part of the ECA application to MECP, Enbridge will complete all necessary studies to determine the potential impact of the air and noise emissions from the proposed hydrogen-blending facilities.

The following subsections provide an assessment of potential effects and cumulative effects associated with the proposed hydrogen-blending facilities, and recommends additional mitigation measures, where necessary.

POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

Table 1 provides the assessment of potential impacts associated with the proposed hydrogen-blending facilities on the physical, natural, and socio-economic environment, as well as recommended mitigation measures.

The assessment provided in **Table 1** was only conducted for the proposed hydrogen-blending facilities described in this Amendment that were not previously evaluated in the Environmental Report. Effects and mitigation measures considered in the Environmental Report are not repeated below.

The proposed hydrogen-blending facilities do not result in a change to the effects assessment for most of the components; however, new potential interactions have been identified for the Physiography, Topography, and Surficial Geology; Atmospheric Environment; Noise; and Access Modifications and Restrictions components.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
PHYSICAL ENVIRONMENT			
Physiography, Topography, and Surficial Geology	***Construction*** The topography at the proposed facility sites is generally level and no unique physical features are present. The footprint of the proposed hydrogen-blending facilities will be graded, if required, and the facilities will be constructed on concrete pads. The area within the fenced compound will be gravelled. There is potential for a minor, localized change in topography as a result of grading and the installation of permanent components that may alter natural surface drainage patterns. ***Operation*** No effects on physiography, topography, and surficial geology are anticipated during operation of the proposed hydrogen-blending facilities.	• Pre-construction contours and drainage patterns should be re-established around the facilities, to the extent feasible, following construction. • Maintain site drainage during all phases of construction. Ensure construction activities do not cause the ponding of water or unintentional channelization of surface water flow. • Following the completion of construction activities, regrade areas with vehicle ruts or erosion gullies if required.	No significant net effect is anticipated following implementation of the recommended mitigation measures.
Groundwater	***Construction*** The proposed hydrogen-blending facilities will be located above-ground and no interaction with groundwater is anticipated during construction. ***Operation*** No effects on groundwater are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	Not applicable (N/A) – no new potential effects are anticipated.
Bedrock	***Construction*** The proposed hydrogen-blending facilities will be located above-ground and no interaction with bedrock is anticipated during construction. ***Operation*** No effects on bedrock are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Seismicity	***Construction*** No effects of seismic activity are anticipated during construction of the proposed hydrogen-blending facilities. ***Operation*** Impacts to the proposed hydrogen-blending facilities as a result of seismic activity are not anticipated at this time. The facilities will be designed in accordance with low to moderate levels of seismicity and comply with Canadian Geological Survey data and National Building Code minimum standards.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
NATURAL ENVIRONMENT			
Atmospheric Environment	***Construction*** Effects on the atmospheric environment from construction were previously assessed in the Environmental Report and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** There will be venting of natural gas for token relief at the proposed hydrogen-blending facilities during operations. Details on the venting will be provided in Enbridge's ECA permit application to MECP.	• For construction, no additional mitigation measures are recommended beyond the measures provided in the Environmental Report. • During operations, implement requirements/conditions of the ECA permit from MECP.	No significant net effect is anticipated following implementation of the recommended mitigation measures.
Wetlands	***Construction*** There are no wetlands located within 30 m of the proposed hydrogen-blending facilities and no interaction with wetlands is anticipated during construction. ***Operation*** No effects on wetlands are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Surface Water, Fish and Aquatic Habitat	***Construction*** There are no watercourses located within 30 m of the proposed hydrogen-blending facilities and no interaction with surface water, fish, and aquatic habitat is anticipated during construction. ***Operation*** No effects on surface water, fish, and aquatic habitat are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Terrestrial Habitat and Vegetation	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land adjacent to manicured lawns, sidewalks, and major roads (Woodbine Avenue and Honda Boulevard). Vegetation encountered will consist of common roadside vegetation of minor ecological value (vegetation capable of colonizing new roadside edges). Effects on terrestrial habitat and vegetation were previously assessed in the Environmental Report and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects on terrestrial habitat and vegetation are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Wildlife, Significant Wildlife Habitat and Species at Risk	***Construction*** No effects on wildlife, significant wildlife habitat, and species at risk are anticipated during construction of the proposed hydrogen-blending facilities. ***Operation*** No effects on wildlife, significant wildlife habitat, and species at risk are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Agriculture and Soils	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land adjacent to manicured lawns, sidewalks, and major roads (Woodbine Avenue and Honda Boulevard). Topsoil will be removed within the footprint of the facilities to accommodate site preparation and installation of the concrete pad. No interaction with agricultural soils is anticipated during construction. ***Operation*** No effects on agriculture and soils are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
SOCIO-ECONOMIC ENVIRONMENT			
Noise	***Construction*** Construction activities have the potential to disturb residents south of Woodbine Avenue in the Victoria Square neighbourhood. Construction-related noise effects are expected to be minor, temporary, and localized, particularly given the existing acoustic environment which includes regular traffic noise on Woodbine Avenue. ***Operation*** There may be some noise from the facilities during operations, however, this will be permitted through the MECP ECA process.	• For construction, no additional mitigation measures are recommended beyond the measures provided in the Environmental Report. • During operations, implement requirements/conditions of the ECA permit from MECP.	No significant net effect is anticipated following implementation of the recommended mitigation measures.
Access Modifications and Restrictions	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge, however, there is the potential that construction of the District Station may require some workspace that extends into the sidewalk along Honda Boulevard, temporarily disrupting pedestrian traffic. Access restrictions on road traffic are not anticipated. ***Operation*** No effects on access will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are recommended beyond the measures provided in the Environmental Report.	No significant net effect is anticipated following implementation of the recommended mitigation measures.

Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Traffic Disruption	***Construction*** Effects on traffic as a result of construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects on traffic will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Vibration	***Construction*** Effects of vibration during construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects of vibration will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Construction Waste	***Construction*** Effects of construction wastes were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects of construction waste will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Bentonite Slurry	***Construction*** Bentonite slurry is generated during trenchless pipeline construction and, therefore, will not be generated during facility construction. ***Operation*** No effects of bentonite slurry will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Hydrostatic Test Water	***Construction*** Hydrostatic test water is not required for construction of the proposed hydrogen-blending facilities. ***Operation*** No effects of hydrostatic test water will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Aesthetics	***Construction*** Effects on aesthetics as a result of construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** The proposed hydrogen-blending facilities will be permanent and will alter the current aesthetics of the area; however, in the context of the existing setting, including the existing Enbridge and Mobis Parts Canada buildings, and the presence of Woodbine Avenue, a busy thorough-fare immediately adjacent to the property, the change in aesthetics is anticipated to be minor.	• No additional mitigation measures are required.	No significant net effect is anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Existing and Planned Land Use	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge. As such, there will be no effects on existing and planned land use at the proposed facility locations. ***Operation*** No effects on existing and planned land use will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Existing Linear Infrastructure Corridors and Other Infrastructure	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge that is currently vacant. No interaction with existing linear infrastructure corridors and other infrastructure is anticipated. ***Operation*** No effects on existing linear infrastructure corridors and other infrastructure will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Population and Demographics	***Construction*** No effects on population and demographics will occur during construction of the proposed hydrogen-blending facilities. ***Operation*** No effects on population and demographics will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Economic Activities, Employment and Labour Force	***Construction*** Effects on economic activities, employment, and labour force as a result of construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects on economic activities, employment and labour force will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Tourism and Recreation	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge. No interaction with tourism and recreation is anticipated. ***Operation*** No effects on tourism and recreation will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Indigenous Communities	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge. No interaction with Indigenous communities is anticipated. ***Operation*** No effects on Indigenous communities will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Archaeological and Heritage Resources	***Construction*** The Stage 1 Archaeological Assessment conducted for the Project concluded that the Phase 1 Study Area be considered free of archaeological concern and no further assessment was recommended. As such, no interaction with archaeological and heritage resources is anticipated during construction. ***Operation*** No effects on archaeological and heritage resources will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Community Services	***Construction*** No effects on community services will occur during construction of the proposed hydrogen-blending facilities. ***Operation*** No effects on community services will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Contaminated Sites	***Construction*** There is limited potential to encounter contaminated sites during construction. Effects of contaminated sites discovered during construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects of contaminated sites will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Planning Policies	***Construction*** The Project will need to conform to applicable provincial and municipal planning policies. No new interactions have been identified as a result of the proposed hydrogen-blending facilities ***Operation*** No effects on planning policies will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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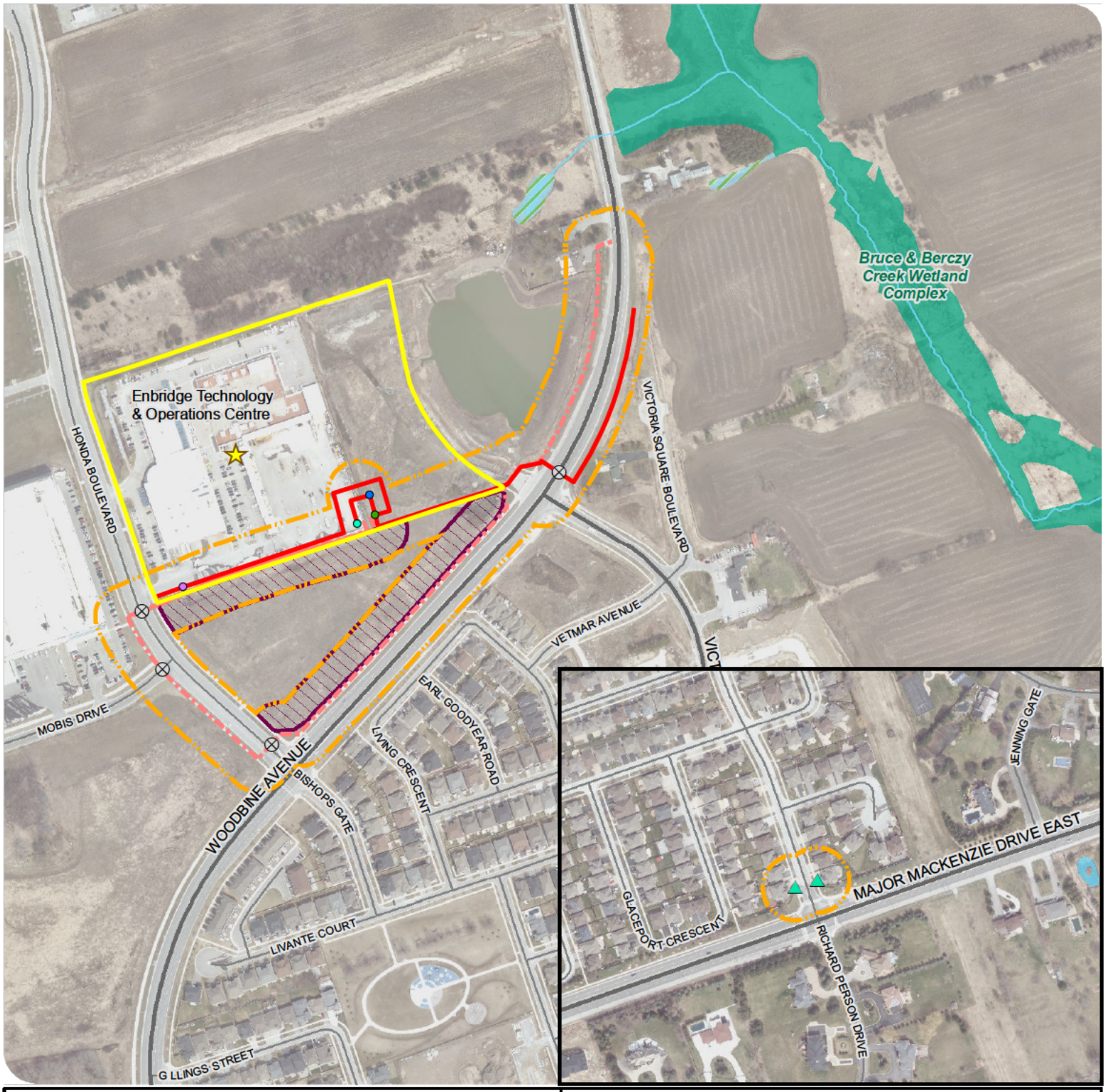

⊗ **Potential Road or Rail Crossing.** For minor road crossings, open-cut or trenchless crossings will be applied. Contact the local region or municipality. Enbridge to develop a Traffic Management Plan to ensure that traffic is maintained while the crossing is conducted. Flag persons will be provided as required. Refer to Section 18.0 of the Enbridge Environmental Construction and Maintenance Manual, 2019.

Candidate Significant Wildlife Habitat. These areas are known to contain Significant Wildlife Habitat. Abide by restricted activity periods and mitigation measures in Table 7.

ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

MITIGATION

FIGURE 5

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody
- Unevaluated Wetland
- Provincially Significant Wetland

*As identified in the TRCA's 2010 Draft Rouge River Watershed Management Plan.

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N
FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:5,000

0 0.0325 0.065 0.13 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12

CUMULATIVE EFFECTS ASSESSMENT

Cumulative effects to the physical and natural environment are anticipated to be negligible given the land for the proposed hydrogen-blending facilities has been previously disturbed and the permanent facility footprints will be minimal in an area of existing high anthropogenic disturbances. Residual air and noise emissions are anticipated to be well within regulatory standards and will be in compliance with the MECP ECA permit.

There is a possibility of cumulative effects on the socio-economic environment related to construction traffic, noise, and dust; however, as described in Section 7 of the Environmental Report, the use of appropriate mitigation techniques and the short timeframe for construction will mitigate any cumulative impacts to a low magnitude. Consequently, no significant cumulative effects are anticipated as a result of the addition of the proposed hydrogen-blending facilities to the scope of the Environmental Report.

SUMMARY

The assessment of potential Project effects, cumulative effects, and recommended mitigation measures presented in the Environmental Report remains largely unchanged as a result of the proposed hydrogen-blending facilities.

The proposed hydrogen-blending facilities will result in a minor, localized alteration of topography, some air and noise emissions during operations, a minor alteration of visual aesthetics, and potential temporary pedestrian access restrictions; however, no significant net effects are anticipated with the implementation of mitigation measures. The mitigation measures recommended in the Environmental Report are considered adequate to address these potential minor effects in conjunction with the implementation of any requirements/conditions of the MECP ECA permit for air and noise emissions.

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6.0 STAKEHOLDER AND INDIGENOUS CONSULTATION UPDATE

This draft Amendment is being circulated to all individuals on the Project contact list developed for the Environmental Report. In addition, a Notice of Project Change is being circulated to all individuals who participated in the consultation process either by attending the Open Houses, sending emails to the Project email inbox, or who otherwise provided their contact details to a Project Team Member with an interest in staying informed of Project updates. The Notice of Project Change will also be circulated to approximately 2,700 residents and businesses located within the Phase 1 Study Area (see **Figure 4**). The Notice of Project Change requests public comment on the proposed changes and provides Project contact information.

A 30-day public comment period will be observed following the release of this draft Amendment. Any comments received as a result of consultation relating to the Amendment will be tracked and responses will be provided, as required. Meetings will be held with applicable agencies, Indigenous communities, and other stakeholders on an as-needed basis to review the proposed changes to the Project. A summary of the consultation results, as well as the consultation logs, will be provided in **Appendix A** of the finalized Amendment to be submitted to the OEB.

The final Amendment will be available for review by interested stakeholders on the Enbridge Project website at <https://www.enbridgegas.com/about-us>, following submission to the OEB (anticipated by March 31, 2020).

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7.0 CONCLUSIONS

This Amendment provides the results of Dillon's review of the proposed changes to the Project scope (as described in **Section 3**) since the completion of the Environmental Report in May 2019, as well as the Addendums in September and December 2019.

The new Preferred Route is similar to the Phase 1 Alternative Route evaluated in the Environmental Report. The setting and assessment of the previously identified Phase 1 Preferred Route can be applied to the new Preferred Route given their proximity to one another. The new Preferred Route results in some advantages over the previously identified Phase 1 Preferred Route, including a shorter overall length, fewer road crossings, and smaller overall construction footprint. The proposed hydrogen-blending facilities will be located entirely on Enbridge-owned property and will be subject to the MECP ECA process.

Based on this review, Dillon has determined that the proposed changes to the Project scope do not result in any material change to the assessment, recommended mitigation measures, or conclusions, as presented in the Environmental Report, and no further assessment is considered necessary.

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8.0 REFERENCES

Dillon Consulting Limited (Dillon). 2019a. *Low-Carbon Energy Project Environmental Report*. May 2019. Prepared for Enbridge Gas Inc. Markham, ON. ix + 100 pp. + Appendices. Available at: https://www.enbridgegas.com/about-us.

Dillon Consulting Limited (Dillon). 2019b. *Enbridge Gas Inc. Low-Carbon Energy Project Environment Report Addendum*. September 2019. Prepared for Enbridge Gas Inc. Markham, ON. ii + 5 pp. Available at: https://www.enbridgegas.com/about-us.

Dillon Consulting Limited (Dillon). 2019c. *Enbridge Gas Inc. Low-Carbon Energy Project Environmental Report Addendum #2*. December 2019. Prepared for Enbridge Gas Inc. Markham, ON. i + 8 pp. Available at: https://www.enbridgegas.com/about-us.

Ontario Energy Board (OEB). 2016. *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition*. 70 pp.

DRAFT

APPENDIX A

Consultation Update – Summary and Logs

[Note: To be completed and included in Final Amendment for OEB submission]

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ATTACHMENTS
(4 – AFN)

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

1 message

[redacted] <[redacted]@enbridge.com> Fri, Mar 8, 2019 at 3:31 PM
To: "[redacted]@alderville.ca" <sanderson@alderville.ca>
Cc: "[redacted] (ENERGY) ([redacted]@ontario.ca)" <[redacted]@ontario.ca>

Hi [redacted]

How are you? I hope you are doing well.

I'm emailing to provide some advance materials about our proposed Power to Gas Pipeline Project in the City of Markham. Please find attached the Project Notification letter, Notice of Commencement, map of the proposed location and a copy of the Duty to Consult letter issued by the Ministry of Energy, Northern Development & Mines for your information and reference.

Please don't hesitate to contact me with any questions you may have regarding the proposed project.

I look forward to connecting with you soon.

Regards,

[redacted]

[redacted]
Sr. Advisor, Community Engagement, Eastern Region

Public Affairs and Communications

—

ENBRIDGE PIPELINES INC.
TEL: 416-753-6962 | CELL: 416-525-2497
2225 Sheppard Avenue East, Atria III, 17th Floor

North York, ON M2J 5C2

enbridge.com

Integrity. Safety. Respect.

4 attachments

Alderville FN Notification Letter_March 8.pdf
394K

EGI-LCEP-NOC_Mar-2019_Admail.pdf
543K

Fig1_ProjectLayout_Feb21.pdf
12427K

Power to Gas Delegation Letter.pdf
1560K

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

[redacted] <[redacted]@enbridge.com> Fri, Mar 8, 2019 at 3:32 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

-----Original Message-----
From: [redacted]@alderville.ca [mailto:[redacted]@alderville.ca]
Sent: Friday, March 08, 2019 3:32 PM
To: [redacted]
Subject: [External] Re: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

From: [redacted]@alderville.ca
Subject: Inquiries

Thank you for your email, however the Community Consultation Coordinator, Skye Anderson is no longer at this email address. Please contact Jesse Johnson, the new Community Consultation worker at [redacted]@alderville.ca, or call 905-352-2011 should your require further information.

Thank you
-------- Original Message --------

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

[redacted] <[redacted]@enbridge.com> Fri, Mar 8, 2019 at 3:36 PM
To: "[redacted] ([redacted]@alderville.ca)" <[redacted]@alderville.ca>
Cc: "[redacted] (ENERGY) ([redacted]@ontario.ca)" <[redacted]@ontario.ca>

Hi [redacted]

I just received an automated message indicating that [redacted] is no longer the Community Consultation Worker and your contact information was provided. As such, please find below and attached some information regarding the proposed Power to Gas Project for your information.

I look forward to connecting with you soon. In the meantime, please don't hesitate to contact me directly with any questions you may have.

Thanks,

[redacted]

[redacted]
Sr. Advisor, Community Engagement, Eastern Region

Public Affairs and Communications

—

ENBRIDGE PIPELINES INC.
TEL: 416-753-6962 | CELL: 416-525-2497
2225 Sheppard Avenue East, Atria III, 17th Floor

North York, ON M2J 5C2

enbridge.com

Integrity. Safety. Respect.

From: [redacted]
Sent: Friday, March 08, 2019 3:31 PM

To: [redacted]@alderville.ca
Cc: [redacted] (ENERGY) ([redacted]@ontario.ca)

[Quoted text hidden]

[Quoted text hidden]

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4 attachments

Alderville FN Notification Letter_March 8.pdf
394K

EGI-LCEP-NOC_Mar-2019_Admail.pdf
543K

Fig1_ProjectLayout_Feb21.pdf
12427K

Power to Gas Delegation Letter.pdf
1560K

ENBRIDGE

DILLON CONSULTING

March 8, 2019

[redacted] Lands & Resources Communications Officer
Alderville First Nation
11696 Second Line
Roseneath, ON
K0K 2X0

RE: Enbridge Gas Inc. Low-Carbon Energy Project City of Markham, Ontario
Notice of Project

Dear [redacted]

Enbridge Gas Inc. (Enbridge) has retained Dillon Consulting Limited (Dillon) to undertake an environmental and cumulative effects assessment and route selection study for approximately 6.8 kilometers (km) of natural gas pipeline and associated facilities in Markham, Ontario. The project objective is to create a network supplying blended natural gas with a small amount of hydrogen gas within Enbridge's existing natural gas pipeline infrastructure (the Project). The study is being conducted in accordance with the Ontario Energy Board's (OEB) *Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition, August 2016*. Once the study is complete, Enbridge may apply to the OEB for approval to construct the new pipeline. If approved, construction would be completed in two phases in 2020 and 2021.

Enbridge has an operating electrolyzer at its Training and Operations Centre located at 101 Honda Boulevard in Markham, Ontario. The electrolyzer converts surplus electricity into hydrogen gas and oxygen. The hydrogen gas can have multiple uses. Enbridge is proposing to blend a low concentration of hydrogen (up to 2% by volume) into an isolated area of the gas distribution network in an effort to reduce greenhouse emissions. This blended gas will remain within Enbridge's natural gas specifications. It can be utilized in the same way traditional natural gas is used, for example, to heat homes and water. As is the case with any other project, Enbridge will take all necessary measures to ensure that the safety of the gas distribution system is maintained at all times.

A Preliminary Preferred Route (PPR) for the proposed natural gas pipeline has been identified. The PPR follows portions of Woodbine Ave., as well as existing residential roads located in subdivisions, generally located south of Honda Blvd. and north of Highway 7 in the City of Markham. Phase 1 of the Project includes the installation of approximately 1 km of nominal pipe size (NPS) 6-inch steel Extra High Pressure (XHP) natural gas pipe, 250 m of NPS 6-inch steel High Pressure (HP) pipe and 75 m of NPS 8-inch Intermediate Pressure (IP) polyethylene (PE) natural gas pipeline. Phase 2 of

Continued . . .

51 Breithaupt Street
Suite 200
Kitchener, Ontario
Canada
N2H 5G5
Telephone
519.571.9833
Fax
519.571.7424

Dillon Consulting Limited

the Project is comprised of multiple segments of pipeline which will convey blended hydrogen and natural gas, and includes the installation of 1.2 km of NPS 8-inch IP PE pipe, 2.9 km of NPS 8-inch and NPS 6-inch IP PE pipe, 350 m of NPS 6-inch IP PE pipe, 60 m of NPS 6-inch IP PE pipe, 10 m of NPS 4-inch IP PE pipe, 350 m of NPS 4-inch IP PE pipe, and 600 m of NPS 2-inch IP PE pipe. An alternative route is also being considered as part of the study, and is located in the same general area as the PPR. Locations requiring both temporary and permanent disconnection points of gas pipelines have been identified as well for both routes. A map showing both the PPR and alternative pipeline route is enclosed (**Figure 1**).

In order to undertake a successful consultation program, Indigenous engagement will play a key role in the Project. As noted in the attached Notice of Study Commencement, Enbridge will be hosting Open House meetings as part of the study.

As part of the initial phase of the study, we are collecting information on the natural environment, archaeological features and socio-economic features for both the PPR and alternative route described above. Examples of data being collected include information on terrestrial and aquatic vegetation and wildlife, archaeological and heritage resources, community parks and picnic areas, community facilities, nature trails, bus routes and other utilities such as water, sewage, industrial and commercial utilities.

Enbridge is committed to meaningful engagement with Indigenous groups and the satisfaction of the duty to consult. Enbridge looks forward to engaging with your Nation to ensure your community's interests are being represented. Your Nation is invited to provide comments regarding the proposed project. Specifically, Enbridge is seeking information about any potential impacts that the project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts.

We invite your community to be involved in the engagement and consultation process. Kindly indicate whether your community is interested in participating in the engagement activities on or before **March 31, 2019.** If you are unable to respond by the above date and are intending to do so, please provide an alternative date for when the Project Team may expect a response.

Enbridge would also be interested in meeting with your Nation to share project related information should you wish. Alternatively, please advise if you do not wish to meet individually but would prefer to be kept informed of the project.

On behalf of the Project Team, thank you in advance for your consideration regarding the initial phases of the project. Please do not hesitate to contact me with any questions you may have.

Continued . . .

Sincerely,

S[redacted]
Sr. Advisor, Community Engagement
Enbridge Gas Inc.
O: 416-753-6962
C: 416-525-2497
[redacted]@enbridge.com

Encls. Notice of Study Commencement and Open House
Figure 1 – Project Layout and Location
MOENDM Delegation Letter

PROPOSED ENBRIDGE LOW-CARBON ENERGY PROJECT
NOTICE OF STUDY COMMENCEMENT AND OPEN HOUSE
CITY OF MARKHAM, ONTARIO
ENBRIDGE GAS INC.

The Study

Enbridge Gas Inc. (Enbridge) has retained Dillon Consulting Limited (Dillon) to begin an environmental and route selection study for approximately 6.8 kilometers (km) of natural gas pipeline and associated facilities. The objective of the project is to blend a small amount of hydrogen gas into our existing natural gas network, to reduce greenhouse gas emissions. Enbridge operates a facility which converts surplus electrical energy to hydrogen gas, which would be injected into the existing natural gas network. The blended gas would be distributed within the area outlined on the map below. Once the study is complete, Enbridge may apply to the Ontario Energy Board (OEB) for approval to construct the new pipeline. If approved, construction may begin in 2020.

The preferred route for Phase 1 of the project would involve the installation of approximately 1,325 m of 6-inch and 8-inch pipe primarily along Woodbine Ave. and Honda Blvd., ending at Enbridge's Technology and Operations Centre. Phase 2 of the project would involve multiple pipeline segments of various lengths and sizes ranging from 2-inch to 8-inch pipe along Victoria Square Blvd., Woodbine Ave., Rodick Rd., Prince Regent St., Major Mackenzie Dr. E, Village Pkwy., Elgin Mills, Honda Blvd., and Victoria Square Blvd.

An alternative route is also being considered as part of the study. The alternative route for Phase 1 of the project would involve the installation of 450 m of 6-inch pipe along Victoria Square Blvd. and an unnamed street. Phase 2 of the project will involve multiple pipeline segments of various lengths and sizes ranging from 6-inch to 8-inch pipe along Honda Blvd., Bishop's Gate, Livante Ct., Helford St., Prince of Wales Dr., Duke of York St., Woodbine Ave., Betty Roman Blvd., Markland St., and Calvert Rd. The preliminary preferred and alternative routes are identified on the map below.

The Process

The study is being conducted in accordance with the OEB's Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario. The study will review the need and justification for the pipeline, describe the natural and socio-economic environment, evaluate the potential facilities from a social and environmental perspective, outline safety measures, and describe appropriate measures for impact mitigation and monitoring.

Invitation to the Community

Stakeholder consultation is a key component of this study. Members of the general public, agencies, Indigenous communities and interest group representatives are invited to participate in the study. We will be hosting Open Houses to provide you with an opportunity to review the project and provide input. Details on the Open Houses are as follows:

Location: Monte Carlo Inn (8990 Woodbine Ave., Markham)
Date: March 19, 2019 (Tuesday)
Time: 5 PM to 8 PM

Location: Enbridge Technology & Operations Centre
(101 Honda Blvd., Markham)
Date: March 23, 2019 (Saturday)
Time: 9 AM to 12 PM
Free pancake breakfast will be served!

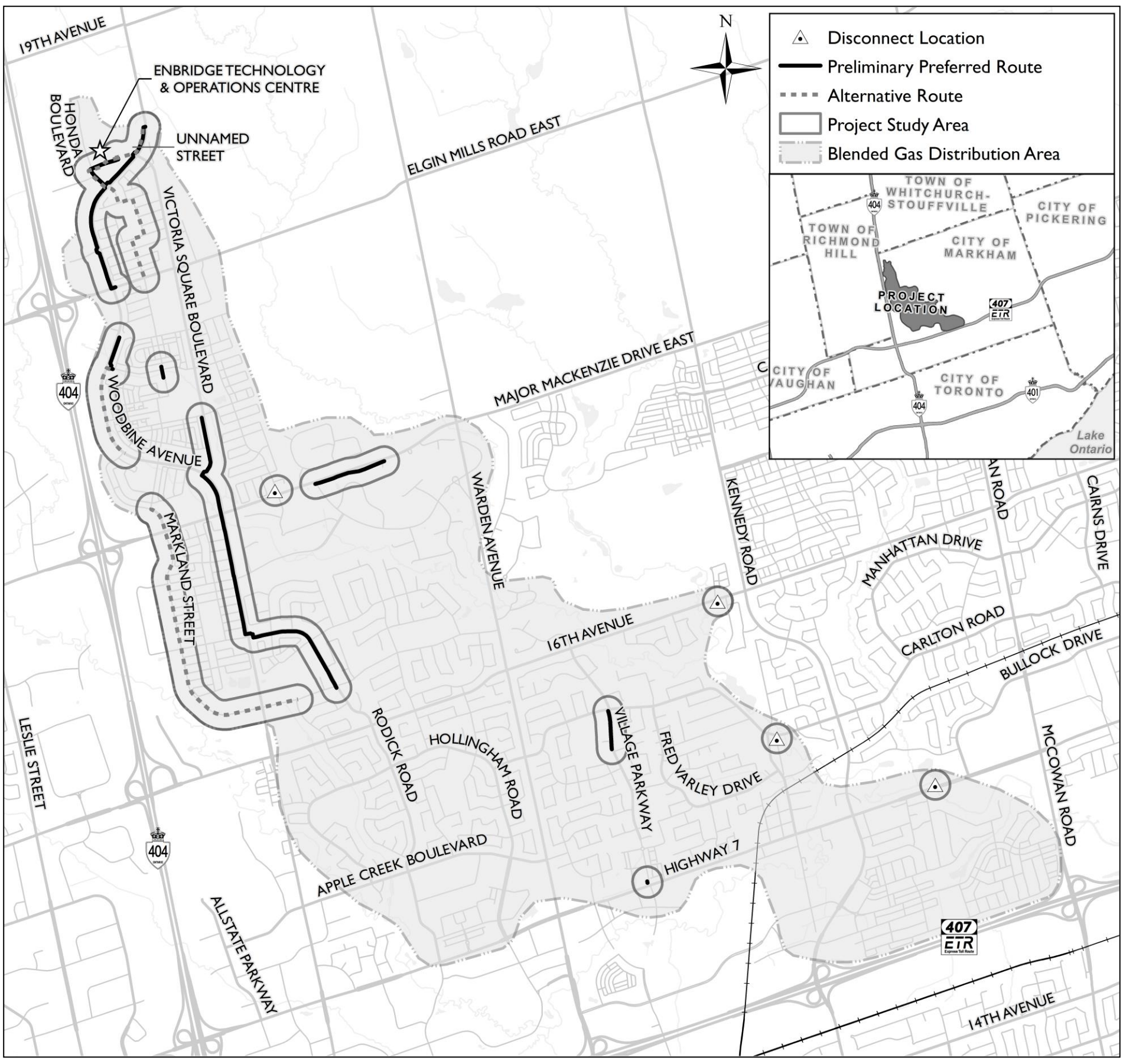
Win an Ecobee (valued at $300)

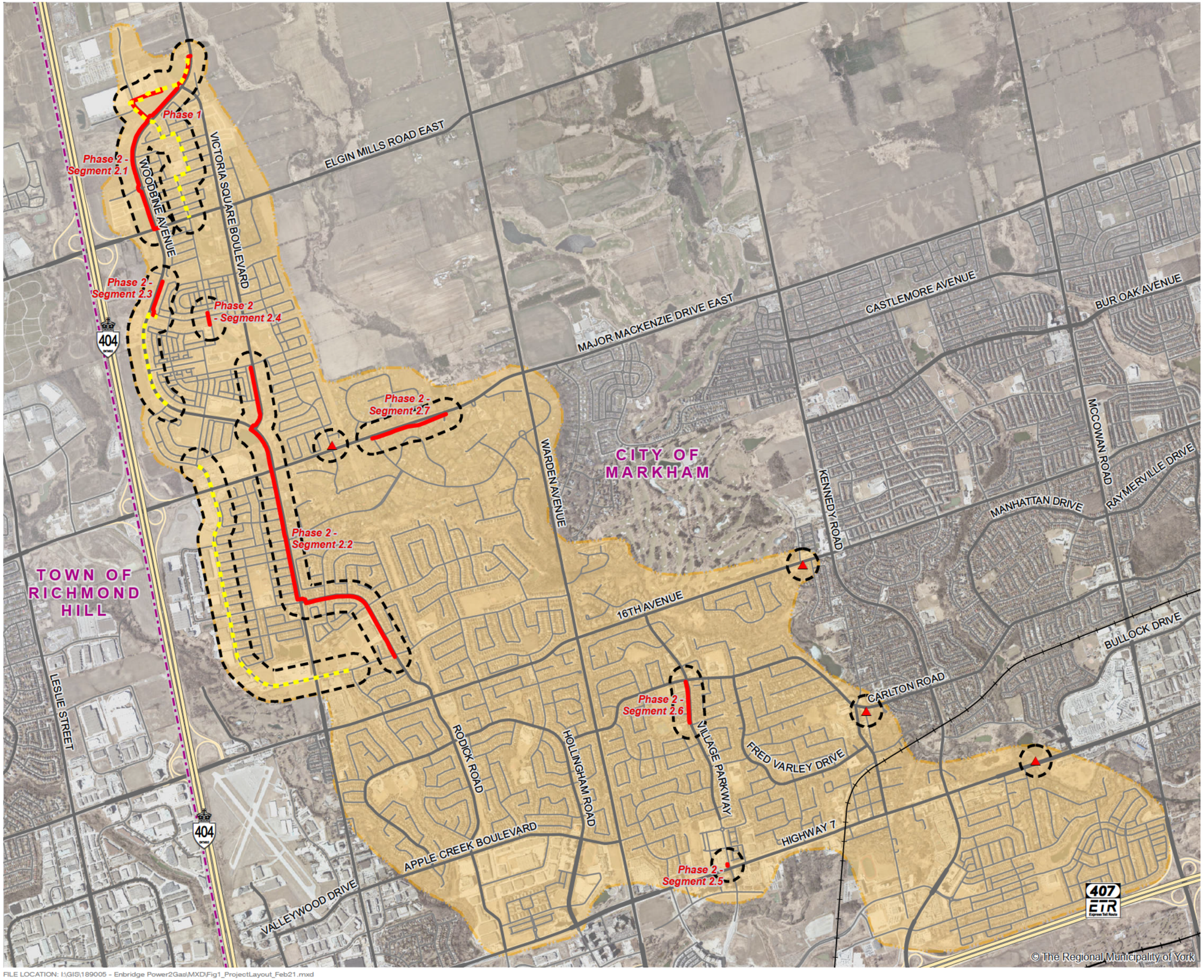
Enter for a chance to win an Ecobee smart thermostat at one of the Open Houses.

Representatives from Enbridge and Dillon will be in attendance to discuss the project and answer questions. Your input will be used to confirm the preferred route and create mitigation plans to be implemented during construction. If you are interested in participating, or would like to provide comments, please come to one of the Open Houses or contact one of the individuals listed as soon as possible. For more information about the proposed project and hydrogen blending, please visit http://enbridgegas.com/LowCarbonEnergyProject.

Tanya Turk
Sr Environmental Advisor
Enbridge Gas Inc.
101 Honda Blvd., Markham, ON L6C 0M6
(416) 495-3103
tanya.turk@enbridge.com

Tristan Lefler
Environmental Assessment Project Manager
Dillon Consulting Limited
51 Breithaupt St., Suite 200, Kitchener, ON
N2H 5G5
(519) 571-9833
LowCarbonEnergyEA@dillon.ca





ENBRIDGE

ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

PROJECT LAYOUT

FIGURE 1

- Disconnect Location
- Preliminary Preferred Route
- Alternative Route
- Rail
- Project Study Area
- Blended Gas Distribution Area
- Municipal Boundary



0 125 250 500 m

SCALE 1:28,000

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: NT / TL
MAP PROJECTION: NAD 1983 UTM Zone 17N

DILLON CONSULTING

PROJECT: 18-9005

DATE: 2019-02-21

FILE LOCATION: I:\GIS\189005 - Enbridge Power2Gas\MXD\Fig1_ProjectLayout_Feb21.mxd

Ministry of Energy, Northern Development and Mines

77 Grenville Street
6th Floor
Toronto ON M7A 2C1

Tel: (416) 314-2599

Ministère de l'Énergie, Développement du Nord et Mines

77 rue Grenville
6e étage
Toronto ON M7A 2C1

Tél: (416) 314-2599

Ontario

Indigenous Energy Policy

VIA EMAIL

March 1, 2019

[redacted]
Technical Manager, Regulatory Applications
Enbridge Gas Distribution Inc.
500 Consumers Road
North York, Ontario M2J 1P8

Re: Power to Gas Pipeline Project

Dear [redacted]

Thank you for your email dated January 4, 2019 notifying the Ministry of Energy, Northern Development and Mines of Enbridge's proposal for the Power to Gas Pipeline Project and requesting clarification on Duty to Consult requirements.

We understand that Enbridge is proposing to construct approximately 6.8 kilometers of natural gas pipeline in the City of Markham to isolate a small portion of Enbridge's existing distribution system to ensure that only blended natural gas is utilized in that isolated section. The project is associated with Enbridge's operating electrolyzer at its Training and Operations Center at 101 Honda Boulevard in Markham. The project, as outlined in the project description from Enbridge, consists of two phases with varying diameter and length of pipeline.

Phase 1 of the project consists of approximately 750 meters of NPS 6 steel extra high-pressure natural gas pipeline. The expected route will begin approximately 40 meters south of 11182 Woodbine Avenue in Markham, that will travel south on Woodbine Avenue and turn west onto Honda Boulevard. The pipeline will terminate at the Training and Operating Centre. Phase 2 will require the construction of multiple segments of varying diameter and length of pipeline. These segments will be required to provide system support when the project is isolated from the rest of the distribution system. Phase 2 will originate at the Training and Operating Centre and terminate at Major Mackenzie Drive.

The Ministry has reviewed the information provided relative to its current understanding of the interests of First Nation and Métis communities in the area and has determined that it may have the potential to affect First Nation and Métis communities who hold or claim Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982.

As you are aware, the Government of Ontario (the "Crown") has a constitutional duty to consult and accommodate First Nation and Métis communities when Crown project approvals may lead to an appreciable adverse impact on established or asserted Aboriginal or treaty rights. While the legal duty to consult falls on the Crown, the Crown may delegate the day-to-day, procedural aspects of consultation to project proponents. The Ministry of the Energy, Northern Development and Mines is delegating the procedural aspects of consultation to Enbridge through this letter.

Based on the Crown's preliminary assessment of First Nation and Métis community rights and project impacts, the following Aboriginal communities should be consulted on the basis that they have or may have constitutionally protected Aboriginal or treaty rights that may be adversely affected by the Project:

Community	**Mailing Address**
Alderville First Nation	11696 Line Road 2 Roseneath, ON K0K 2X0
Curve Lake First Nation	22 Winookeedaa Road Curve Lake, ON K0L1R0
Hiawatha First Nation	123 Paudash Street Hiawatha, ON K9J 0E6
Huron Wendat First Nation *	255, place Chef Michel Laveau Wendake, QC G0A 4V0
Mississaugas of the Credit First Nation	2789 Mississauga Road R.R. #6 Hagersville, ON N0A 1H0
Mississaugas of Scugog Island First Nation	Administration Building 22521 Island Road Port Perry, ON L9L 1B6

Note: * interests are specific to archeological resources

This rights-based consultation list is based on information that is subject to change. First Nation and Métis communities may make new rights assertions at any time, and other developments (e.g. the discovery of Aboriginal archaeological sites) can occur that may require additional First Nation and/or Métis communities to be notified and/or consulted. If you become aware of potential rights impacts on communities that are not listed above at any stage of the consultation and approval process, kindly bring this to the attention of the Ministry with any supporting information regarding the claim. The Ministry will then assess whether it is necessary to include the community on the rights-based consultation list above.

It is the Ministry's expectation that Enbridge will communicate directly with the communities listed above, and that Enbridge will:

- Notify the communities that Enbridge has been delegated the procedural aspects of consultation by the Ministry of Energy, Northern Development and Mines on behalf of Ontario.
- Notify the communities that they may contact the Crown directly should they have any questions or concerns.
- Provide the communities with the following contact information should they wish to communicate directly with the Ministry:

  Raina Crasto
  Policy Advisor, Indigenous Energy Policy
  Ministry of Energy, Northern Development and Mines
  416-326-4571 / Raina.crasto@ontario.ca

- Please copy the Ministry contact when communicating the above information.

The Ministry relies on consultation conducted by proponents when it assesses the Crown's obligations and directs proponents during the regulatory process. Enbridge's responsibilities for procedural aspects of consultation include:

- Providing the Indigenous communities with timely notice of the project for the purposes of considering possible impacts on their Aboriginal and/or treaty rights;

- In that notice, clearly stating that Enbridge has been delegated the procedural aspects of consultation by the Ministry of Energy, Northern Development and Mines on behalf of Ontario for the project.

- Providing Indigenous communities with information about the project including anticipated impacts, and information on project timelines;

- Following up with the Indigenous communities to ensure they have received project information and that they are aware of the opportunity to express comments and concerns about the project;

- Explaining the regulatory and approval processes that apply to the project;

- Gathering information about how the project may adversely impact the relevant Aboriginal and/or treaty rights (for example, hunting, fishing) or sites of cultural significance (for example, burial grounds, archaeological sites);

- Considering the comments and concerns raised by Indigenous communities and providing responses;

- Where appropriate, discussing accommodation, including mitigation or other measures to address potential adverse impacts on Aboriginal and/or treaty rights;

- Where appropriate, developing and discussing with the Crown appropriate accommodation measures;
- Taking reasonable steps to foster positive relationships with the Indigenous communities;
- Bearing the reasonable costs associated with these procedural aspects of consultation; and
- Maintaining records of activities in relation to carrying out the delegated procedural aspects of consultation and providing information to the Ministry.

If you have any questions about this letter or require any additional information, please contact Raina Crasto at 416-326-4571 or Raina.crasto@ontario.ca

Sincerely,

[redacted]

A/Manager
Indigenous Energy Policy

C: Ontario Pipeline Coordinating Committee (OPCC)

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

1 message

[redacted] <[redacted]@enbridge.com> Wed, Jul 3, 2019 at 5:41 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]
Sent: Wednesday, July 03, 2019 5:33 PM
To: [redacted] ([redacted]@alderville.ca)
Subject: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

Hi [redacted]

How are you? I hope you are well. I haven't received any feedback or follow up from you regarding the proposed Power to Gas Project for the City of Markham and was hoping if you can please let me know if you would like for me to continue sending you project specific information or if you are not interested in receiving information, please do let me know.

In the meantime, I wanted to let you know that on Tuesday, July 9, Enbridge Gas is hosting an Information Session to provide residents with the opportunity to learn more about our proposed Low-Carbon Energy Project. We have sent the attached invitation, in both English and Mandarin, to roughly 33,000 homes and businesses that live in the Project area (City of Markham). We'll also be running the invitation as an ad in the Markham Economist and Sun (July 4), and the Ming Pao (July 6).

If you have any questions about the Project, or the Information Session, please don't hesitate to reach out to me.

If you plan to attend on Tuesday, July 9, please let me know.

Thank you in advance,

[redacted]

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

ENBRIDGE GAS INC.

TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

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July 2019 OpenHouse_v04.pdf
555K

You're Invited to an Information Session

Please join us for another information session about the proposed Low-Carbon Energy Project in Markham. Learn about hydrogen blending, why Enbridge Gas supports this technology, why it's good for our customers, and good for the environment.

Enbridge Gas is proposing a project to blend a small amount of hydrogen gas into our existing natural gas network, to reduce greenhouse gas emissions. Enbridge Gas operates a facility which converts electrical energy to hydrogen gas, which would be injected into the existing natural gas network if the project is approved.

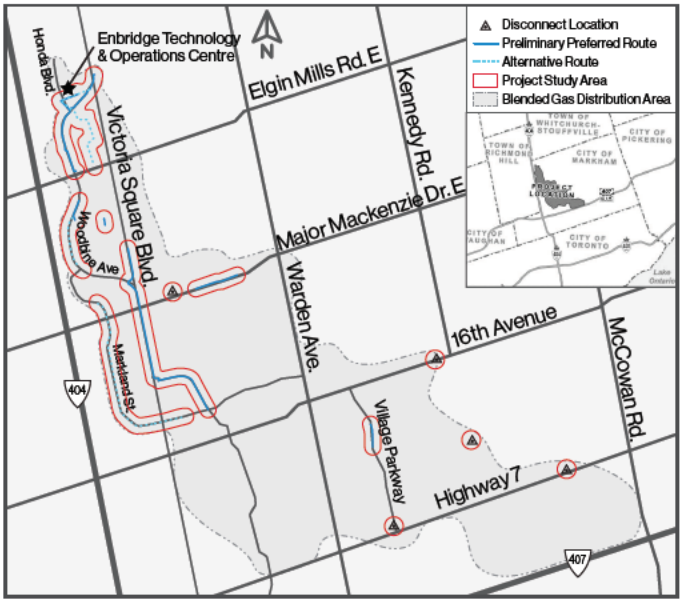
The blended gas would be distributed within the shaded area outlined on the map. As part of the project, Enbridge Gas would be installing approximately 1.3 km of pipe in phase one and approximately 5.5 km of pipe in phase two.

Hydrogen Blending Information Session

Date: Tuesday, July 9, 2019
Time: Drop in from 5-7 p.m.
Location: Enbridge Technology and Operations Centre
101 Honda Blvd, Markham, Ontario

For more information about the proposed project and hydrogen blending, please visit: **http://enbridgegas.com/LowCarbonEnergyProject**.

If you have any questions, please submit them to **LowCarbonEnergyEA@dillon.ca**.



Please visit us online:

enbridgegas.com **@enbridgegas**

If you have a natural gas emergency, please call: **1-866-763-5427**



Join us and enter to win an Ecobee
(Valued at $300)

ENBRIDGE
Life Takes Energy®

邀请您参加宣讲会

关于提案的万锦市低碳能源项目，我们将再次举办宣讲会，敬请参加。 了解氢气混合技术、为什么 Enbridge Gas 支持这种技术、为什么它对我们的顾客有好处、以及为什么它对环境有好处。

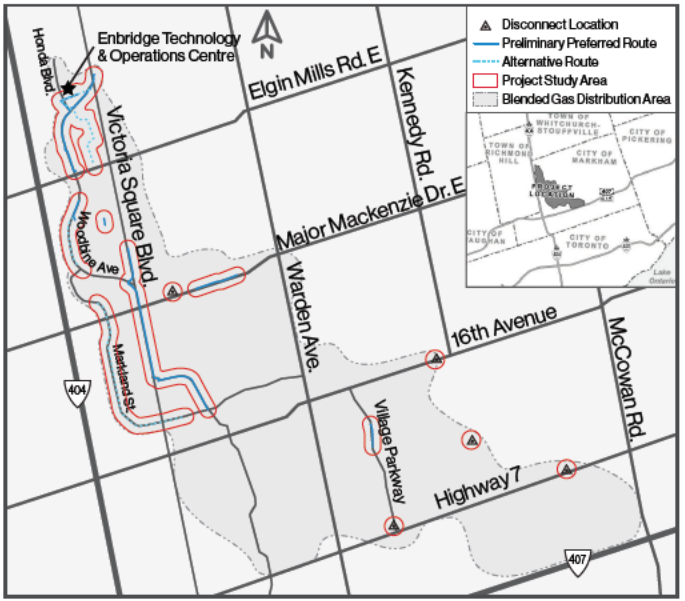
Enbridge Gas 提案了一个项目，将少量氢气混入我们的现有天然气管网，以减少温室气体排放。如果该项目得到批准，Enbridge Gas 有设施将电力转换为氢气，再将氢气注入现有天然气管网。

混合气体将在地图上所示区域内输配。作为该项目的一部分，Enbridge Gas 将在项目一期铺设约1.3公里的管道，项目二期铺设约5.5公里的管道。

氢气混合宣讲会

日期： 2019 年7月9日星期二
时间： 下午5点至7点间欢迎光临
地点： Enbridge Technology and Operations Centre
101 Honda Blvd, Markham, Ontario

请浏览 **http://enbridgegas.com/LowCarbonEnergyProject**，了解提案项目和氢气混合的更多信息。如果您有任何疑问，请将您的疑问提交至 **LowCarbonEnergyEA@dillon.ca**。



请访问我们的社交媒体：

enbridgegas.com **@enbridgegas**

如果您有天然气紧急情况，请致电 **1-866-763-5427**



ENBRIDGE
Life Takes Energy®

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

Fwd: Power to Gas Stage 2 Surveys

1 message

[redacted] <[redacted]@enbridge.com> Thu, Aug 15, 2019 at 6:06 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

Begin forwarded message:

From: <[redacted]@enbridge.com>
Date: August 15, 2019 at 11:45:31 AM GMT+2
To: [redacted] <[redacted]@alderville.ca>
Subject: Power to Gas Stage 2 Surveys

Hi [redacted]

I hope you are doing well and enjoying the last bit of summer remaining. As a follow up to the Enbridge Power to Gas Project, I would like to provide you with some advance notice regarding the Stage 2 Archaeological assessment field work. Enbridge is planning to begin the field work sometime in the first half of September pending weather and successfully securing locates.

I will be in touch a week prior to commencing the field work to confirm the details but in the meantime, can you please let me know if you are planning to send an Alderville First Nation monitor ? I think it would be great to have a community member participate in the field work.

I look forward to hearing back from you at your earliest convenience.

Regards

[redacted]

Sr. Advisor, Municipal & Indigenous Affairs

Enbridge Gas Inc

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Gas Low Carbon Report

1 message

[redacted] <[redacted]@enbridge.com> Thu, Oct 3, 2019 at 12:50 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted] <[redacted]@enbridge.com>
Sent: Thursday, October 3, 2019 12:50 PM
To: [redacted] ([redacted]@alderville.ca) <[redacted]@alderville.ca>
Subject: Enbridge Gas Low Carbon Report

Hi [redacted]

I hope you are doing well! Please find attached a copy of the Environmental Report for the Enbridge Low-Carbon Energy Project also knows as the Power to Gas Project. Please let me know if you have any questions regarding the report and the project overall.

https://www.enbridgegas.com/-/media/Extranet-Pages/Projects-tab-links/Low-Carbon-Energy-Project/EGI_LCEP_Redacted_Secured_13-May-2019.ashx?la=en&hash=DBBBCDF7CF53E778FD5627D1858AA00610ED7DD1

Many thanks,

[redacted]

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

Integrity. Safety. Respect.

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Gas Low Carbon Project

[redacted] <[redacted]@enbridge.com> Tue, Jan 21, 2020 at 11:43 AM
To: "lowcarbonenergyea@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted] <[redacted]@enbridge.com>
Sent: Tuesday, January 21, 2020 11:35 AM
To: consultation@alderville.ca
Cc: [redacted]@alderville.ca
Subject: Enbridge Gas Low Carbon Project

Hi [redacted] (and Chief Mowat)!

So great to connect with you this morning! As promised, please find attached some information regarding the Enbridge Gas Low Carbon Project (also known as the Power to Gas Project) located in Markham, Ontario.

I'd love to see you and Chief Mowat again and look forward to catching up over lunch. Please let me know what your and the Chief's availability looks like and we'll set something up in our schedules.

Chi Miigwech

[redacted]

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

---------- Forwarded message ----------
From: [redacted] <[redacted]@enbridge.com>
To: "[redacted]@alderville.ca" <[redacted]@alderville.ca>
Cc: "[redacted] (ENERGY) ([redacted]@ontario.ca)" <[redacted]@ontario.ca>
Bcc:
Date: Fri, 8 Mar 2019 20:31:21 +0000
Subject: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

Hi [redacted]

How are you? I hope you are doing well.

I'm emailing to provide some advance materials about our proposed Power to Gas Pipeline Project in the City of Markham. Please find attached the Project Notification letter, Notice of Commencement, map of the proposed location and a copy of the Duty to Consult letter issued by the Ministry of Energy, Northern Development & Mines for your information and reference.

Please don't hesitate to contact me with any questions you may have regarding the proposed project.

I look forward to connecting with you soon.

Regards,

[redacted]

[redacted]
Sr. Advisor, Community Engagement, Eastern Region

Public Affairs and Communications

—

ENBRIDGE PIPELINES INC.
TEL: 416-753-6962 | CELL: 416-525-2497
2225 Sheppard Avenue East, Atria III, 17th Floor

North York, ON M2J 5C2

enbridge.com

Integrity. Safety. Respect.

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5 attachments

Alderville FN Notification Letter_March 8.pdf
394K

EGI-LCEP-NOC_Mar-2019_Admail.pdf
543K

Fig1_ProjectLayout_Feb21.pdf
12427K

Power to Gas Delegation Letter.pdf
1560K

Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham.eml
20433K

March 8, 2019

[redacted] Lands & Resources Communications Officer
Alderville First Nation
11696 Second Line
Roseneath, ON
K0K 2X0

RE: Enbridge Gas Inc. Low-Carbon Energy Project City of Markham, Ontario
Notice of Project

Dear [redacted]

Enbridge Gas Inc. (Enbridge) has retained Dillon Consulting Limited (Dillon) to undertake an environmental and cumulative effects assessment and route selection study for approximately 6.8 kilometers (km) of natural gas pipeline and associated facilities in Markham, Ontario. The project objective is to create a network supplying blended natural gas with a small amount of hydrogen gas within Enbridge's existing natural gas pipeline infrastructure (the Project). The study is being conducted in accordance with the Ontario Energy Board's (OEB) *Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition, August 2016*. Once the study is complete, Enbridge may apply to the OEB for approval to construct the new pipeline. If approved, construction would be completed in two phases in 2020 and 2021.

Enbridge has an operating electrolyzer at its Training and Operations Centre located at 101 Honda Boulevard in Markham, Ontario. The electrolyzer converts surplus electricity into hydrogen gas and oxygen. The hydrogen gas can have multiple uses. Enbridge is proposing to blend a low concentration of hydrogen (up to 2% by volume) into an isolated area of the gas distribution network in an effort to reduce greenhouse emissions. This blended gas will remain within Enbridge's natural gas specifications. It can be utilized in the same way traditional natural gas is used, for example, to heat homes and water. As is the case with any other project, Enbridge will take all necessary measures to ensure that the safety of the gas distribution system is maintained at all times.

A Preliminary Preferred Route (PPR) for the proposed natural gas pipeline has been identified. The PPR follows portions of Woodbine Ave., as well as existing residential roads located in subdivisions, generally located south of Honda Blvd. and north of Highway 7 in the City of Markham. Phase 1 of the Project includes the installation of approximately 1 km of nominal pipe size (NPS) 6-inch steel Extra High Pressure (XHP) natural gas pipe, 250 m of NPS 6-inch steel High Pressure (HP) pipe and 75 m of NPS 8-inch Intermediate Pressure (IP) polyethylene (PE) natural gas pipeline. Phase 2 of

Continued . . .

DILLON CONSULTING

51 Breithaupt Street
Suite 200
Kitchener, Ontario
Canada
N2H 5G5
Telephone
519.571.9833
Fax
519.571.7424

Dillon Consulting Limited

the Project is comprised of multiple segments of pipeline which will convey blended hydrogen and natural gas, and includes the installation of 1.2 km of NPS 8-inch IP PE pipe, 2.9 km of NPS 8-inch and NPS 6-inch IP PE pipe, 350 m of NPS 6-inch IP PE pipe, 60 m of NPS 6-inch IP PE pipe, 10 m of NPS 4-inch IP PE pipe, 350 m of NPS 4-inch IP PE pipe, and 600 m of NPS 2-inch IP PE pipe. An alternative route is also being considered as part of the study, and is located in the same general area as the PPR. Locations requiring both temporary and permanent disconnection points of gas pipelines have been identified as well for both routes. A map showing both the PPR and alternative pipeline route is enclosed (**Figure 1**).

In order to undertake a successful consultation program, Indigenous engagement will play a key role in the Project. As noted in the attached Notice of Study Commencement, Enbridge will be hosting Open House meetings as part of the study.

As part of the initial phase of the study, we are collecting information on the natural environment, archaeological features and socio-economic features for both the PPR and alternative route described above. Examples of data being collected include information on terrestrial and aquatic vegetation and wildlife, archaeological and heritage resources, community parks and picnic areas, community facilities, nature trails, bus routes and other utilities such as water, sewage, industrial and commercial utilities.

Enbridge is committed to meaningful engagement with Indigenous groups and the satisfaction of the duty to consult. Enbridge looks forward to engaging with your Nation to ensure your community's interests are being represented. Your Nation is invited to provide comments regarding the proposed project. Specifically, Enbridge is seeking information about any potential impacts that the project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts.

We invite your community to be involved in the engagement and consultation process. Kindly indicate whether your community is interested in participating in the engagement activities on or before **March 31, 2019.** If you are unable to respond by the above date and are intending to do so, please provide an alternative date for when the Project Team may expect a response.

Enbridge would also be interested in meeting with your Nation to share project related information should you wish. Alternatively, please advise if you do not wish to meet individually but would prefer to be kept informed of the project.

On behalf of the Project Team, thank you in advance for your consideration regarding the initial phases of the project. Please do not hesitate to contact me with any questions you may have.

Continued . . .

Sincerely,

S[redacted]
Sr. Advisor, Community Engagement
Enbridge Gas Inc.
O: 416-753-6962
C: 416-525-2497
[redacted]@enbridge.com

Encls. Notice of Study Commencement and Open House
Figure 1 – Project Layout and Location
MOENDM Delegation Letter

PROPOSED ENBRIDGE LOW-CARBON ENERGY PROJECT
NOTICE OF STUDY COMMENCEMENT AND OPEN HOUSE
CITY OF MARKHAM, ONTARIO
ENBRIDGE GAS INC.

The Study

Enbridge Gas Inc. (Enbridge) has retained Dillon Consulting Limited (Dillon) to begin an environmental and route selection study for approximately 6.8 kilometers (km) of natural gas pipeline and associated facilities. The objective of the project is to blend a small amount of hydrogen gas into our existing natural gas network, to reduce greenhouse gas emissions. Enbridge operates a facility which converts surplus electrical energy to hydrogen gas, which would be injected into the existing natural gas network. The blended gas would be distributed within the area outlined on the map below. Once the study is complete, Enbridge may apply to the Ontario Energy Board (OEB) for approval to construct the new pipeline. If approved, construction may begin in 2020.

The preferred route for Phase 1 of the project would involve the installation of approximately 1,325 m of 6-inch and 8-inch pipe primarily along Woodbine Ave. and Honda Blvd., ending at Enbridge's Technology and Operations Centre. Phase 2 of the project would involve multiple pipeline segments of various lengths and sizes ranging from 2-inch to 8-inch pipe along Victoria Square Blvd., Woodbine Ave., Rodick Rd., Prince Regent St., Major Mackenzie Dr. E, Village Pkwy., Elgin Mills, Honda Blvd., and Victoria Square Blvd.

An alternative route is also being considered as part of the study. The alternative route for Phase 1 of the project would involve the installation of 450 m of 6-inch pipe along Victoria Square Blvd. and an unnamed street. Phase 2 of the project will involve multiple pipeline segments of various lengths and sizes ranging from 6-inch to 8-inch pipe along Honda Blvd., Bishop's Gate, Livante Ct., Helford St., Prince of Wales Dr., Duke of York St., Woodbine Ave., Betty Roman Blvd., Markland St., and Calvert Rd. The preliminary preferred and alternative routes are identified on the map below.

The Process

The study is being conducted in accordance with the OEB's Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario. The study will review the need and justification for the pipeline, describe the natural and socio-economic environment, evaluate the potential facilities from a social and environmental perspective, outline safety measures, and describe appropriate measures for impact mitigation and monitoring.

Invitation to the Community

Stakeholder consultation is a key component of this study. Members of the general public, agencies, Indigenous communities and interest group representatives are invited to participate in the study. We will be hosting Open Houses to provide you with an opportunity to review the project and provide input. Details on the Open Houses are as follows:

Location: Monte Carlo Inn (8990 Woodbine Ave., Markham)
Date: March 19, 2019 (Tuesday)
Time: 5 PM to 8 PM

Location: Enbridge Technology & Operations Centre
(101 Honda Blvd., Markham)
Date: March 23, 2019 (Saturday)
Time: 9 AM to 12 PM
Free pancake breakfast will be served!

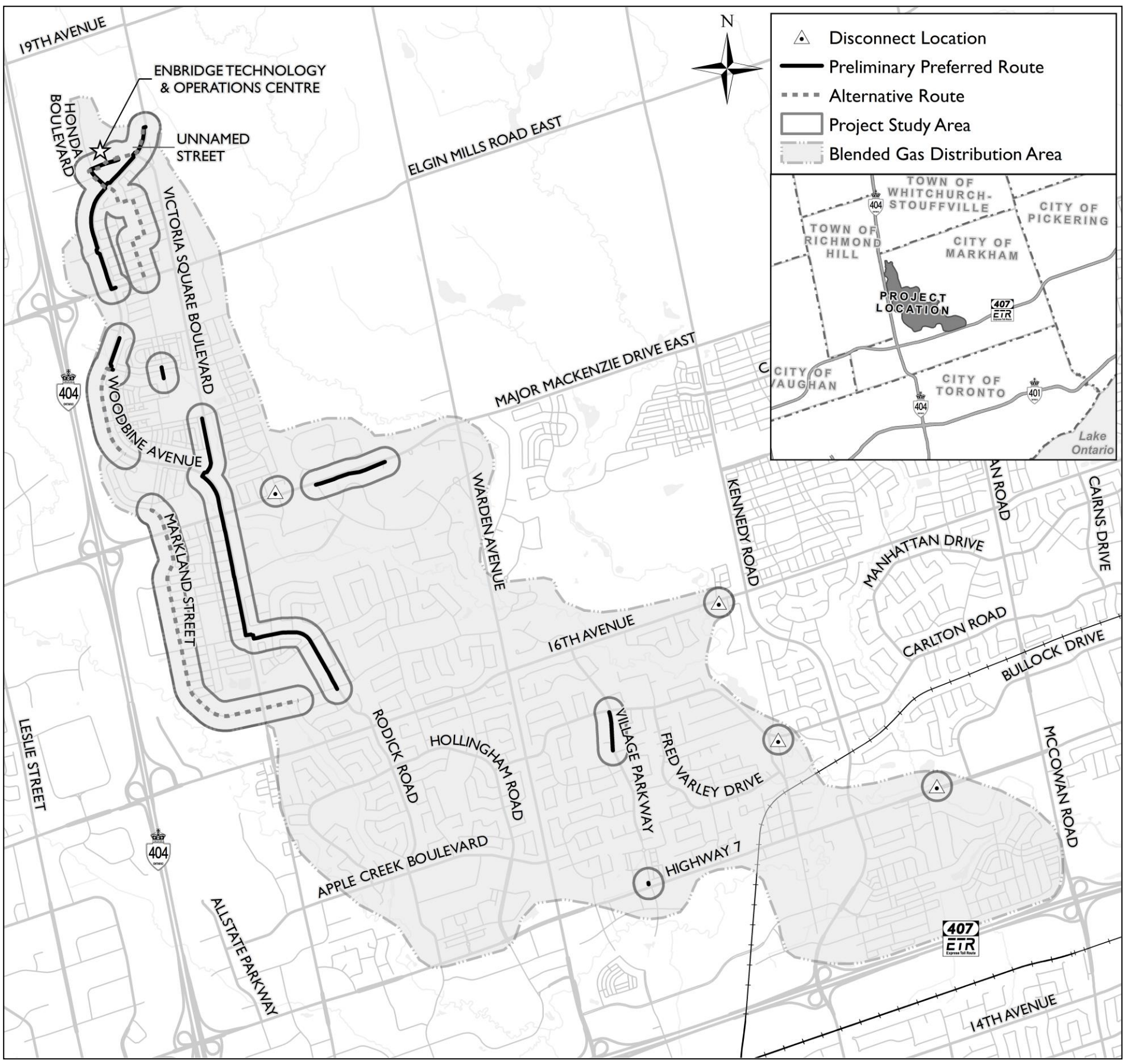
Win an Ecobee (valued at $300)

Enter for a chance to win an Ecobee smart thermostat at one of the Open Houses.

Representatives from Enbridge and Dillon will be in attendance to discuss the project and answer questions. Your input will be used to confirm the preferred route and create mitigation plans to be implemented during construction. If you are interested in participating, or would like to provide comments, please come to one of the Open Houses or contact one of the individuals listed as soon as possible. For more information about the proposed project and hydrogen blending, please visit http://enbridgegas.com/LowCarbonEnergyProject.

Tanya Turk
Sr Environmental Advisor
Enbridge Gas Inc.
101 Honda Blvd., Markham, ON L6C 0M6
(416) 495-3103
tanya.turk@enbridge.com

Tristan Lefler
Environmental Assessment Project Manager
Dillon Consulting Limited
51 Breithaupt St., Suite 200, Kitchener, ON
N2H 5G5
(519) 571-9833
LowCarbonEnergyEA@dillon.ca



ENBRIDGE

ENBRIDGE

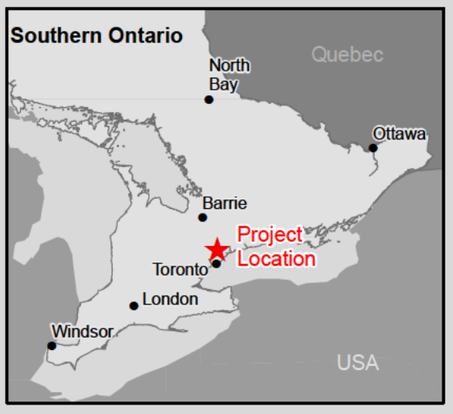
ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

PROJECT LAYOUT

FIGURE 1

- Disconnect Location
- Preliminary Preferred Route
- Alternative Route
- Rail
- Project Study Area
- Blended Gas Distribution Area
- Municipal Boundary



0 125 250 500 m

SCALE 1:28,000

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: NT / TL
MAP PROJECTION: NAD 1983 UTM Zone 17N

DILLON CONSULTING

PROJECT: 18-9005

DATE: 2019-02-21

© The Regional Municipality of York

FILE LOCATION: I:\GIS\189005 - Enbridge Power2Gas\MXD\Fig1_ProjectLayout_Feb21.mxd

Ministry of Energy, Northern Development and Mines

77 Grenville Street
6th Floor
Toronto ON M7A 2C1

Tel: (416) 314-2599

Ministère de l'Énergie, Développement du Nord et Mines

77 rue Grenville
6e étage
Toronto ON M7A 2C1

Tél: (416) 314-2599

Ontario

Indigenous Energy Policy

VIA EMAIL

March 1, 2019

[redacted]
Technical Manager, Regulatory Applications
Enbridge Gas Distribution Inc.
500 Consumers Road
North York, Ontario M2J 1P8

Re: Power to Gas Pipeline Project

Dear [redacted]

Thank you for your email dated January 4, 2019 notifying the Ministry of Energy, Northern Development and Mines of Enbridge's proposal for the Power to Gas Pipeline Project and requesting clarification on Duty to Consult requirements.

We understand that Enbridge is proposing to construct approximately 6.8 kilometers of natural gas pipeline in the City of Markham to isolate a small portion of Enbridge's existing distribution system to ensure that only blended natural gas is utilized in that isolated section. The project is associated with Enbridge's operating electrolyzer at its Training and Operations Center at 101 Honda Boulevard in Markham. The project, as outlined in the project description from Enbridge, consists of two phases with varying diameter and length of pipeline.

Phase 1 of the project consists of approximately 750 meters of NPS 6 steel extra high-pressure natural gas pipeline. The expected route will begin approximately 40 meters south of 11182 Woodbine Avenue in Markham, that will travel south on Woodbine Avenue and turn west onto Honda Boulevard. The pipeline will terminate at the Training and Operating Centre. Phase 2 will require the construction of multiple segments of varying diameter and length of pipeline. These segments will be required to provide system support when the project is isolated from the rest of the distribution system. Phase 2 will originate at the Training and Operating Centre and terminate at Major Mackenzie Drive.

The Ministry has reviewed the information provided relative to its current understanding of the interests of First Nation and Métis communities in the area and has determined that it may have the potential to affect First Nation and Métis communities who hold or claim Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982.

As you are aware, the Government of Ontario (the "Crown") has a constitutional duty to consult and accommodate First Nation and Métis communities when Crown project approvals may lead to an appreciable adverse impact on established or asserted Aboriginal or treaty rights. While the legal duty to consult falls on the Crown, the Crown may delegate the day-to-day, procedural aspects of consultation to project proponents. The Ministry of the Energy, Northern Development and Mines is delegating the procedural aspects of consultation to Enbridge through this letter.

Based on the Crown's preliminary assessment of First Nation and Métis community rights and project impacts, the following Aboriginal communities should be consulted on the basis that they have or may have constitutionally protected Aboriginal or treaty rights that may be adversely affected by the Project:

Community	**Mailing Address**
Alderville First Nation	11696 Line Road 2 Roseneath, ON K0K 2X0
Curve Lake First Nation	22 Winookeedaa Road Curve Lake, ON K0L1R0
Hiawatha First Nation	123 Paudash Street Hiawatha, ON K9J 0E6
Huron Wendat First Nation *	255, place Chef Michel Laveau Wendake, QC G0A 4V0
Mississaugas of the Credit First Nation	2789 Mississauga Road R.R. #6 Hagersville, ON N0A 1H0
Mississaugas of Scugog Island First Nation	Administration Building 22521 Island Road Port Perry, ON L9L 1B6

Note: * interests are specific to archeological resources

This rights-based consultation list is based on information that is subject to change. First Nation and Métis communities may make new rights assertions at any time, and other developments (e.g. the discovery of Aboriginal archaeological sites) can occur that may require additional First Nation and/or Métis communities to be notified and/or consulted. If you become aware of potential rights impacts on communities that are not listed above at any stage of the consultation and approval process, kindly bring this to the attention of the Ministry with any supporting information regarding the claim. The Ministry will then assess whether it is necessary to include the community on the rights-based consultation list above.

It is the Ministry's expectation that Enbridge will communicate directly with the communities listed above, and that Enbridge will:

- Notify the communities that Enbridge has been delegated the procedural aspects of consultation by the Ministry of Energy, Northern Development and Mines on behalf of Ontario.
- Notify the communities that they may contact the Crown directly should they have any questions or concerns.
- Provide the communities with the following contact information should they wish to communicate directly with the Ministry:

  Raina Crasto
  Policy Advisor, Indigenous Energy Policy
  Ministry of Energy, Northern Development and Mines
  416-326-4571 / Raina.crasto@ontario.ca

- Please copy the Ministry contact when communicating the above information.

The Ministry relies on consultation conducted by proponents when it assesses the Crown's obligations and directs proponents during the regulatory process. Enbridge's responsibilities for procedural aspects of consultation include:

- Providing the Indigenous communities with timely notice of the project for the purposes of considering possible impacts on their Aboriginal and/or treaty rights;

- In that notice, clearly stating that Enbridge has been delegated the procedural aspects of consultation by the Ministry of Energy, Northern Development and Mines on behalf of Ontario for the project.

- Providing Indigenous communities with information about the project including anticipated impacts, and information on project timelines;

- Following up with the Indigenous communities to ensure they have received project information and that they are aware of the opportunity to express comments and concerns about the project;

- Explaining the regulatory and approval processes that apply to the project;

- Gathering information about how the project may adversely impact the relevant Aboriginal and/or treaty rights (for example, hunting, fishing) or sites of cultural significance (for example, burial grounds, archaeological sites);

- Considering the comments and concerns raised by Indigenous communities and providing responses;

- Where appropriate, discussing accommodation, including mitigation or other measures to address potential adverse impacts on Aboriginal and/or treaty rights;

- Where appropriate, developing and discussing with the Crown appropriate accommodation measures;
- Taking reasonable steps to foster positive relationships with the Indigenous communities;
- Bearing the reasonable costs associated with these procedural aspects of consultation; and
- Maintaining records of activities in relation to carrying out the delegated procedural aspects of consultation and providing information to the Ministry.

If you have any questions about this letter or require any additional information, please contact Raina Crasto at 416-326-4571 or Raina.crasto@ontario.ca

Sincerely,

[redacted]

A/Manager
Indigenous Energy Policy

C: Ontario Pipeline Coordinating Committee (OPCC)

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Gas Low Carbon Project

[redacted] <[redacted]@enbridge.com> Tue, Jan 21, 2020 at 12:46 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

Integrity. Safety. Respect.

From: Dave Mowat <dmowat@alderville.ca>
Sent: Tuesday, January 21, 2020 12:40 PM
To: Sonia Fazari <Sonia.Fazari@enbridge.com>; Dave Simpson <consultation@alderville.ca>
Subject: [External] RE: Enbridge Gas Low Carbon Project

EXTERNAL: PLEASE PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe.

Hey Sonia … great to hear from you. Sounds good ….. Dave and I will furnish you with some dates.

Dave

From: [redacted] <[redacted]@enbridge.com>
Sent: January 21, 2020 11:35 AM
To: [redacted] <consultation@alderville.ca>
Cc: [redacted] <[redacted]@alderville.ca>
Subject: Enbridge Gas Low Carbon Project

Hi [redacted] (and Chief Mowat)!

So great to connect with you this morning! As promised, please find attached some information regarding the Enbridge Gas Low Carbon Project (also known as the Power to Gas Project) located in Markham, Ontario.

I'd love to see you and Chief Mowat again and look forward to catching up over lunch. Please let me know what your and the Chief's availability looks like and we'll set something up in our schedules.

Chi Miigwech

[redacted]

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

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500 Consumers Road

North York, ON M2J 1P8

enbridge.com

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Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Meeting & Lunch?

[redacted] <[redacted]@enbridge.com> Wed, Feb 19, 2020 at 1:38 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

Please record under the Power to Gas project under alderville first nation.

From: [redacted] <[redacted]@enbridge.com>
Sent: Wednesday, February 19, 2020 1:38 PM
To: [redacted] <[redacted]@alderville.ca>; [redacted] <consultation@alderville.ca>
Subject: Meeting & Lunch?

Hi Chief Mowat and [redacted]

I hope you are both doing well! I just wanted to follow up and confirm what your availably looks like to meet and catch up over lunch? I look forward to connecting with you both soon!

Miigwech

[redacted]

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

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TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

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Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Follow Up

[redacted] <[redacted]@enbridge.com> Fri, Mar 13, 2020 at 12:45 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]
Sent: Friday, March 13, 2020 11:59 AM
To: [redacted] <[redacted]@alderville.ca>; [redacted] <consultation@alderville.ca>
Subject: RE: Follow Up
Importance: High

Hi Chief Mowat and [redacted]

Happy Friday!! I hope you are both doing well.

I wanted to let you know that as of yesterday evening, Enbridge has issued a travel ban across North America due to the COVID-19 virus and starting next Tuesday, employees are being asked to work from home for the next couple of weeks or until further notice. In light of all this, I regrettably have to cancel our meeting and lunch. I'm not pleased about this as I was really looking forward to catching up over good conversation, good laughs with good friends.

I'm thinking when all this dies down, lets reschedule. Again we are really sorry for the last minute notice. In the meantime, I've asked my colleague Melanie Book to reach out and introduce herself via telephone.

Chief, if you are ever at MSIFN, please let me know and I'll pop by to say hello. With construction starting on Hwy 7A, we've set up a construction office in the community so I'll be spending a lot of time there.

Have a great weekend and be safe. Chi Miigwech,

[redacted]

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

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From: [redacted] <[redacted]@alderville.ca>
Sent: Friday, February 28, 2020 9:43 AM
To: [redacted] <[redacted]@enbridge.com>; [redacted] <consultation@alderville.ca>
Subject: [External] RE: Follow Up

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Buongiorno Sonia! 11 am March 19th confirmed.

[redacted]

From: [redacted] <[redacted]@enbridge.com>
Sent: February 28, 2020 8:30 AM
To: [redacted] <consultation@alderville.ca>; [redacted] <dmowat@alderville.ca>
Subject: RE: Follow Up

That's fantastic, Dave! You'll need to teach me how to hoola dance 😉 just kidding..

I'm so looking forward to seeing you both. Does 11:00 a.m. work followed by lunch?

Miigwech

[redacted]

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

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From: [redacted] <consultation@alderville.ca>
Sent: Friday, February 28, 2020 8:27 AM
To: [redacted] <[redacted]@alderville.ca>; [redacted] <[redacted]@enbridge.com>
Subject: [External] RE: Follow Up

EXTERNAL: PLEASE PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe.

March 19th is ok with me as well, looking forward to seeing you again Sonia.

[redacted]

From: [redacted] <[redacted]@alderville.ca>
Sent: February 27, 2020 11:52 PM
To: [redacted] <[redacted]@enbridge.com>; [redacted] <consultation@alderville.ca>
Subject: RE: Follow Up

HI [redacted]

I'm seeing that March 19th works best for me. We can wait for Dave S to weigh in but he's hoola dancing as we speak down around the equator somewhere!

I'll mark that as a tentative date in my Council calendar.

[redacted]

Office 905-352-3000

Cell 905-376-8773

From: [redacted] <[redacted]@enbridge.com>
Sent: February 27, 2020 2:25 PM
To: [redacted] <[redacted]@alderville.ca>; [redacted] <[redacted]@alderville.ca>
Subject: Follow Up

Aaniin Chief Mowat and [redacted]

I hope you are both doing well! I was wondering if March 12, 13, 16, 19 or the 20th works for the both you to meet? I would also like to introduce you to my colleague Melanie Book who is new to the team. We can also grab lunch after our meeting if your schedule permits?

I look forward to connecting with you soon!

Miigwech,

[redacted]

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

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TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

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DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: LCEP Notice of Project Change and Environmental Report Amendment

[redacted] <[redacted]@enbridge.com> Fri, Feb 28, 2020 at 7:20 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]
Sent: Friday, February 28, 2020 7:18 AM
To: 'consultation@alderville.ca' <consultation@alderville.ca>
Subject: LCEP Notice of Project Change and Environmental Report Amendment

Good Morning [redacted]

Please find the Notice of Project Change and Environmental Report Amendment for Enbridge Gas' proposed *Low-Carbon Energy Project (2019)*, attached.

Change Summary

Enbridge has made changes to the scope of the *Low-Carbon Energy Project* in Markham, Ontario that require additional study and review. Dillon is preparing an Amendment to the Environmental Report (the Amendment) in consideration of Enbridge's proposed changes to the Project. These proposed Project changes include: (1) the selection of the Phase 1 Alternative Route as the Preferred Route; and, (2) the addition of three small facilities on Enbridge-owned property at 101 Honda Boulevard into the Environmental Report scope.

We are seeking your community's feedback or shared knowledge by **Friday, March 27th, 2020.**

Should you have any questions or concerns please feel free to contact me directly. We look forward to engaging with your community to ensure your interests are being considered and represented in this project change process.

Meegwetch/Wela'lin,

[redacted]

[redacted]
Senior Advisor, Community & Indigenous Engagement, Eastern Region

Conseillère principale, engagement communautaire et autochtone, région de l'est

Public Affairs, Communications & Sustainability

Affaires publiques, communications et développement durable

Enbridge Pipelines Inc.
Cell: 613-355-6561

Email: melanie.book@enbridge.com

400 Coventry Rd, Ottawa, ON K1K 2C7

enbridge.com
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---

3 attachments

EGI_LCEP_NoticeProjectChange_Final_2020Feb20.pdf
298K

EGI_LCEP_ER_Amendment_Draft_2020Feb20.pdf
5137K

2020 02 27- LCEP Change Notice- Aldervile V01.pdf
97K

Enbridge
400 Coventry Rd
Ottawa, ON K1K 2C7
Canada

February 28, 2020

Re: Notice of Project Change and Draft Environmental Report Amendment- Low Carbon Energy Project (LCEP)

David Mowat
Chief, Alderville First Nation
PO Box 46,
Roseneath, ON
K0K 2X0

Dear Chief Mowat,

I am writing to advise you of a project change and draft Environmental Report Amendment on the proposed 2019 Low Carbon Energy Project (LCEP). Enbridge Gas Inc. (Enbridge) retained Dillon Consulting Limited (Dillon) to undertake an environmental and socio-economic effects assessment and amended report (Environmental Report) for the proposed Low Carbon Energy Project (the Project).

Enbridge filed a Leave-to-Construct (LTC) application with the Ontario Energy Board (OEB) on December 20, 2019. The application included the Environmental Report (completed in May 2019), as well as two Addendums. Addendum #1 was completed in September 2019 and addressed comments from the Toronto and Region Conservation Authority. Addendum #2 was completed in December 2019 and provided updated Project mapping depicting only Phase 1 of the Project, as Phase 2 was removed from the Project scope.

Since the completion of the Environmental Report and the Addendums, Enbridge has made changes to the scope of the Project that require additional study and review. As such, Dillon has prepared an Amendment to the Environmental Report (draft version enclosed), which documents the results of Dillon's review of Enbridge's proposed changes to the Project. These proposed Project changes include: (1) the selection of the Phase 1 Alternative Route as the new Preferred Route; and, (2) the addition of three small facilities on Enbridge owned property into the Environmental Report scope.

Alderville First Nation is invited to provide comments in relation to this Project change. Specifically, Enbridge and Dillion are seeking information about any adverse impacts that the proposed project change may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts. Please send any comments to the attention of the undersigned, or by email to LowCarbonEnergyEA@dillon.ca at your earliest convenience. We would appreciate your shared knowledge or comments for consideration regarding this Project change by March 27, 2020.

If you have questions or concerns regarding the proposed Project change, please do not hesitate to contact me at any time. I appreciate your attention to this matter and look forward to our ongoing collaboration on this project.

Sincerely,



Senior Advisor, Community & Indigenous Engagement, Eastern Region
Conseillère principale, engagement communautaire et autochtone, région de l'est
Public Affairs and Communications
400 Coventry Rd, Ottawa, ON K1K 2C7
Cell: 613-355-6561
[redacted]@enbridge.com

Enclosures Amendment to the Environmental Report

PROPOSED ENBRIDGE LOW-CARBON ENERGY PROJECT

NOTICE OF PROJECT CHANGE

CITY OF MARKHAM, ONTARIO

ENBRIDGE GAS INC.

Last year, Enbridge Gas Inc. (Enbridge) retained Dillon Consulting Limited (Dillon) to undertake a route selection and environmental and socio-economic impact study and report (Environmental Report) for the proposed Low-Carbon Energy Project (the Project). The Environmental Report was completed according to the Ontario Energy Board (OEB) Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016). Following completion of the Environmental Report, Enbridge provided additional information regarding the Project in two Addendums. Addendum #1 was completed in September 2019 and addressed comments from the Toronto and Region Conservation Authority. Addendum #2 was completed in December 2019 and provided updated Project mapping depicting only Phase 1 of the Project, as Phase 2 was removed from the Project scope. Enbridge filed a Leave-to-Construct (LTC) application with the OEB on December 20, 2019.

Since the completion of the Environmental Report and the Addendums, Enbridge has made changes to the scope of the Project that require additional study and review. Dillon is preparing an Amendment to the Environmental Report (the Amendment) in consideration of Enbridge's proposed changes to the Project. These proposed Project changes include: (1) the selection of the Phase 1 Alternative Route as the Preferred Route; and, (2) the addition of three small facilities on Enbridge-owned property at 101 Honda Boulevard into the Environmental Report scope. The objective of the Amendment is to determine if there are any additional potential environmental or socio-economic impacts as a result of the proposed changes that were not captured in the assessment already completed in the Environmental Report.

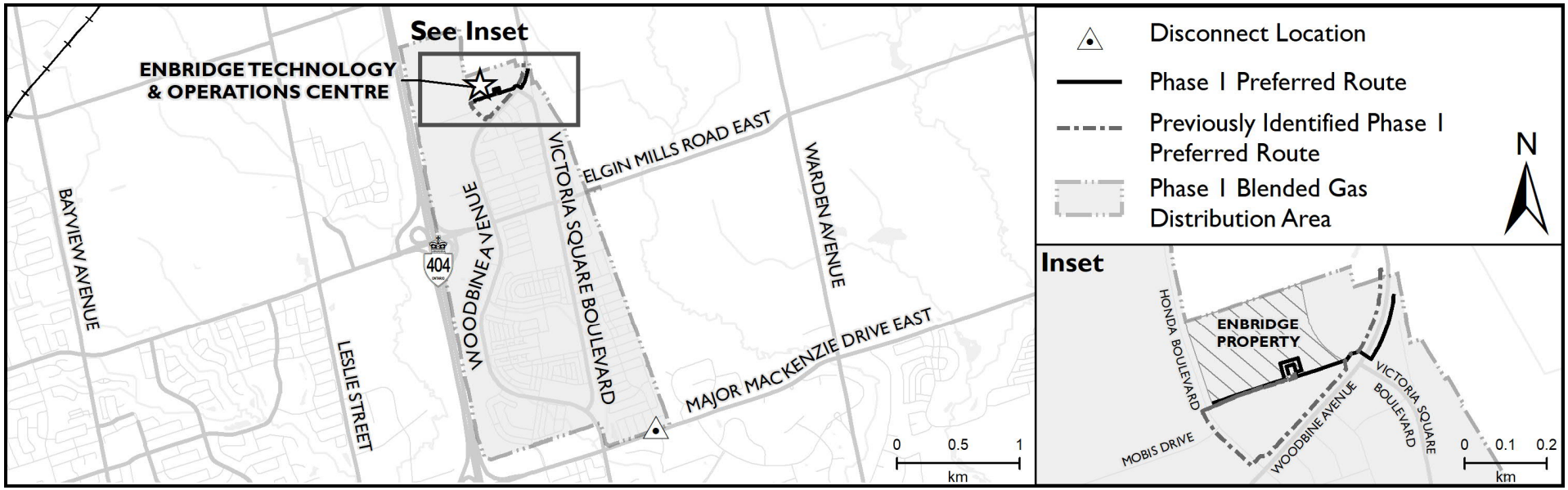
The Amendment to the Environmental Report is planned to be completed by March 31, 2020, after which Enbridge will file the Amendment with the OEB. The OEB's review and approval is required before the Project can proceed. If approved, construction of the Project is currently anticipated to begin by January 2021, at the earliest.

Stakeholder consultation and Indigenous engagement continue to be key components of the Project. We are interested in hearing from you regarding issues/concerns that you may have in relation to the proposed changes to this Project. Please provide feedback to the Project email at LowCarbonEnergyEA@dillon.ca or by contacting one of the individuals listed in this Notice by March 22, 2020.

Tanya Turk
Environmental Advisor
Enbridge Gas Inc.
101 Honda Boulevard
Markham, ON L6C 0M6
(416) 495-3103

Tristan Lefler
Environmental Assessment
Project Manager
Dillon Consulting Limited
51 Breithaupt Street, Suite 200
Kitchener, ON N2H 5G5
(519) 571-9833
LowCarbonEnergyEA@dillon.ca

Project website:
https://www.enbridgegas.com/about-us.
Click on the "Projects" tab and select "Low-Carbon Energy Project"



Enbridge Gas Inc.
Low-Carbon Energy Project
Environmental Report Amendment

Prepared for:

Enbridge Gas Inc.
101 Honda Blvd.
Markham, Ontario
L6C 0M6

Prepared by:

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February 2020



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LIST OF APPENDICES

A Consultation Update – Summary and Logs

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LIST OF ACRONYMS AND ABBREVIATIONS

Dillon	Dillon Consulting Limited
ECA	Environmental Compliance Approval
Enbridge	Enbridge Gas Inc.
HP	high pressure
IP	intermediate pressure
km	kilometre(s)
LTC	Leave-to-Construct
m	metre(s)
MECP	Ontario Ministry of the Environment, Conservation and Parks
N/A	not applicable
NPS	nominal pipe size
OEB	Ontario Energy Board
psig	pounds per square inch gauge
the Project	Low-Carbon Energy Project
TOC	Technology and Operations Centre

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1.0 INTRODUCTION

Enbridge Gas Inc. (Enbridge) retained Dillon Consulting Limited (Dillon) to undertake a route selection and environmental and socio-economic impact study and report (Environmental Report) for the proposed Low-Carbon Energy Project (the Project).

The Environmental Report (Dillon, 2019a) for the Project was completed in May 2019. Following completion of the Environmental Report, Enbridge provided additional information regarding the Project in two Addendums. Addendum #1 (Dillon, 2019b) was completed in September 2019 and addressed comments from the Toronto and Region Conservation Authority. Addendum #2 (Dillon, 2019c) was completed in December 2019 and provided updated Project mapping depicting only Phase 1 of the Project, as Phase 2 was removed from the Project scope. Enbridge filed a Leave-to-Construct (LTC) application for the Project with the Ontario Energy Board (OEB) on December 20, 2019.

Since the completion of the Environmental Report and the Addendums (Dillon, 2019a; 2019b; 2019c), Enbridge has made changes to the scope of the Project that require additional study and review. This report constitutes an Amendment to the Environmental Report (Amendment #1) and provides the results of Dillon's review of Enbridge's proposed changes to the Project. These proposed Project changes include:

- The selection of the Phase 1 Alternative Route as the Preferred Route; and,
- The addition of three small facilities on Enbridge-owned property into the Environmental Report scope.

The proposed Project changes are illustrated on **Figure 1** and are described in further detail in **Section 3**.

The objective of this Amendment is to determine if there are any additional potential environmental or socio-economic impacts as a result of the proposed changes that were not captured in the assessment already provided in the Environmental Report.

Stakeholder consultation and Indigenous engagement continue to be key components of the study. This draft Amendment is being shared with interested parties to identify any issues and concerns related to the proposed Project changes. Following the provision of this draft Amendment, interested parties are invited to provide comments, questions, or concerns to the Project Team within a 30-day period. This feedback will be documented as a component of the final Amendment that will be filed with the OEB (see **Section 6** for further details).

This Amendment is to be read in conjunction with the Environmental Report and the Addendums (Dillon, 2019a; 2019b; 2019c). Information from the Environmental Report and the Addendums is not repeated in this Amendment, except where required to provide context.

The Environmental Report and the Addendums are available for review by interested stakeholders on the Enbridge Project website at <https://www.enbridgegas.com/about-us>. Click on the "**Projects**" tab and select "**Low-Carbon Energy Project**".

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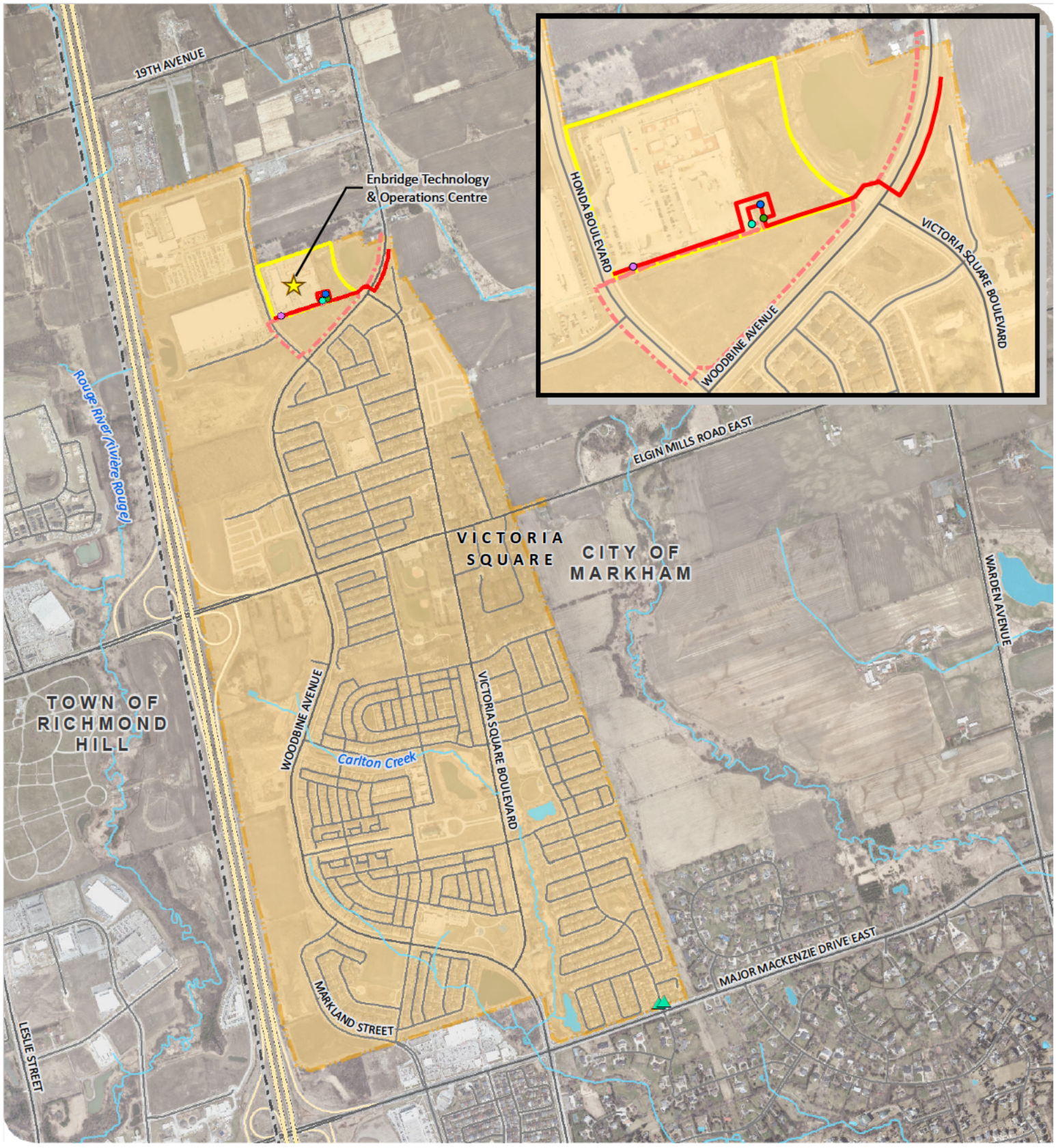

ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

PROPOSED PIPELINE ROUTES

FIGURE 1

- Phase 1 Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Phase 1 Blended Gas Distribution Area
- Enbridge Property
- Watercourse
- Waterbody
- Municipal Boundary

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION
MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:20,000

0 0.125 0.25 0.5 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12

2.0 PROJECT BACKGROUND

The Project was initially proposed as a two-phase installation of approximately 6.7 kilometres (km) of natural gas pipeline in the City of Markham. Addendum #2 to the Environmental Report resulted in the removal of Phase 2 from the Project scope. As such, the Project scope was reduced to Phase 1 only, which would involve the installation of approximately 1.3 km of nominal pipe size (NPS) 6-inch and NPS 8-inch pipe, primarily along Woodbine Avenue and Honda Boulevard, ending at Enbridge's Technology and Operations Centre (see **Figure 1**).

The objective of the Project is to blend a small amount of hydrogen gas (up to 2% by volume) into a small, carefully selected portion of Enbridge's existing natural gas network in order to reduce greenhouse gas emissions. An affiliate of Enbridge Gas Inc. operates a Power-to-Gas facility at the Technology and Operations Centre, which uses surplus electricity to 'split' water molecules into hydrogen and oxygen using electrolyzer technology. The hydrogen gas would be injected into the existing natural gas network and blended gas would be distributed to the Victoria Square neighbourhood, as illustrated on **Figure 1**.

The Environmental Report (Dillon, 2019a) was completed by Dillon in May 2019 and conforms to the OEB *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition* (2016).

The Environmental Report involved undertaking an inventory of physical, natural and socio-economic features within identified Study Areas (see Section 3, Physical, Natural and Socio-Economic Environment Setting in the Environmental Report). Potential alternative routes were identified and then evaluated against one another to select Preferred Routes for each Project Phase. The route selection evaluation process is detailed in Section 5 of the Environmental Report. Public involvement played an important role in this process.

In accordance with the OEB Guidelines, Enbridge carried out a comprehensive stakeholder consultation program to consult and communicate with federal, provincial, and municipal government agencies, Indigenous communities, directly and indirectly affected landowners, residents, and interested members of the public. The stakeholder consultation program methods and results are detailed in Section 4 of the Environmental Report.

Potential environmental and socio-economic impacts and associated mitigation measures are detailed in Section 6 of the Environmental Report. Mitigation measures were recommended to avoid or reduce potential negative impacts to environmental and socio-economic features. Based on the original Project scope and the adoption of mitigation measures recommended in the Environmental Report, Dillon did not predict any long-term impacts from the construction and operation of the Project.

Following the completion of the Environmental Report in May 2019, Enbridge has revised the scope of the Project as detailed in **Section 3**.

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3.0 PROPOSED PROJECT CHANGES

Enbridge is no longer proposing to construct the Phase 1 Preferred Route identified in the Environmental Report. A slight variation of the Phase 1 Alternative Route has now been identified as the Preferred Route (see **Figure 1**).

3.1 RATIONALE

The following provides the rationale for the proposed Project changes. Enbridge has identified these proposed changes as a result of the ongoing detailed engineering design process, the acquisition of new land adjacent to Enbridge's existing Technology and Operations Centre (TOC) property at 101 Honda Boulevard, and stakeholder consultation.

Proceeding with the Phase 1 Preferred Route as described in the Environmental Report would have resulted in added congestion within the TOC Operations Compound, with added safety concerns. The Operations Compound currently has live traffic from operational vehicles, and it houses the Power-to-Gas facilities, the refuelling facilities for compressed natural gas vehicles, and an inventory of materials to support raw material for operations, which are accessed multiple times per day. As part of the long-term plan for the TOC, Enbridge recently acquired new land adjacent to the TOC property, which will now better accommodate the hydrogen-blending facilities required for the Project.

At the Project open houses held in 2019, concerns were raised regarding disruptions to the community due to construction along Woodbine Avenue, including traffic congestion, noise, dust, and accessibility. The new Preferred Route addresses construction concerns, as it results in a reduced duration of construction on Woodbine Avenue, thereby reducing effects such as traffic disruptions dust, and noise. In addition, selecting the new Preferred Route would further add efficiencies to the Project as it would reduce the length of the pipe needed by approximately 40%, resulting in a reduced cost for the Project. Hosting the facilities in the new location also enhances safety at the current site as it reduces the impact of construction and has the added benefit of eliminating the need for construction on Honda Boulevard.

3.2 DESCRIPTION OF THE NEW PREFERRED ROUTE

The new Preferred Route would consist of the installation of approximately 755 metres (m) of new pipeline, including approximately 25 m of NPS 8-inch intermediate pressure (IP) plastic pipe, 380 m of NPS 6-inch extra high pressure (HP) steel pipe, and 350 m of NPS 6-inch HP steel pipe.

The new Preferred Route would begin at a tie-in point along an existing Enbridge pipeline located on the east side of Woodbine Avenue, approximately 300 m northeast of the Enbridge Technology and Operations Centre. It would travel south to the intersection of Woodbine Avenue and Victoria Square Boulevard where it would then turn west and cross under Woodbine Avenue and continue along the southern edge of the Enbridge property at 101 Honda Boulevard. The pipeline would be connected to the proposed hydrogen-blending facilities on the Enbridge property and would continue west to Honda Boulevard where it would tie into another existing Enbridge pipeline (see **Figure 1**).

3.3 DESCRIPTION OF PROPOSED HYDROGEN-BLENDING FACILITIES

The facilities described here are a component of the current LTC application to the OEB that was submitted in December 2020, however, they were not within the scope of the Environmental Report at that time. Their new proposed location has resulted in them being added to the scope of the Environmental Report, and thus they are being assessed in this Amendment.

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The proposed Hydrogen Station and Hydrogen Blending Station, as well as a Remote Terminal Unit (RTU) building, will be located on a concrete pad within a fenced and gravelled compound on Enbridge's existing property at 101 Honda Boulevard. The purpose of this facility is to regulate the pressures of the natural gas and hydrogen prior to mixing and controlling the amount of hydrogen that is injected based on the measured flow of natural gas. The fenced compound will measure approximately 13 m × 25 m and the maximum height of the buildings will be 3.5 m.

The proposed District Station will also be located on Enbridge's existing property at 101 Honda Boulevard and will be nested inside an aluminum box measuring approximately 2 m × 2 m × 2 m. The purpose of the District Station is to reduce the gas pressure from the HP (175 psig) steel pipeline to the IP (55 psig) plastic pipeline for distribution.

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4.0 STUDY PROCESS AND PROJECT SETTING

Section 2 of the Environmental Report describes the study methods used in the Environmental Report, as well as the objectives and methods of stakeholder and Indigenous consultation. The same methods are applied in this Amendment.

Section 3 of the Environmental Report describes the environmental and socio-economic setting of the Project. There is no change to the setting information as a result of the proposed Project changes described in this Amendment, as the location of the Project remains the same (see **Figure 2** and **Figure 3** for mapped natural environment and socio-economic features, respectively). The footprint of the new Preferred Route and proposed hydrogen-blending facilities was covered by desktop and field studies conducted for the Environmental Report. Similarly, the Study Area identified for the Project (120 m buffer on each side of the proposed route for a total width of 240 m) remains the same as identified in the Environmental Report (see **Figure 4**).

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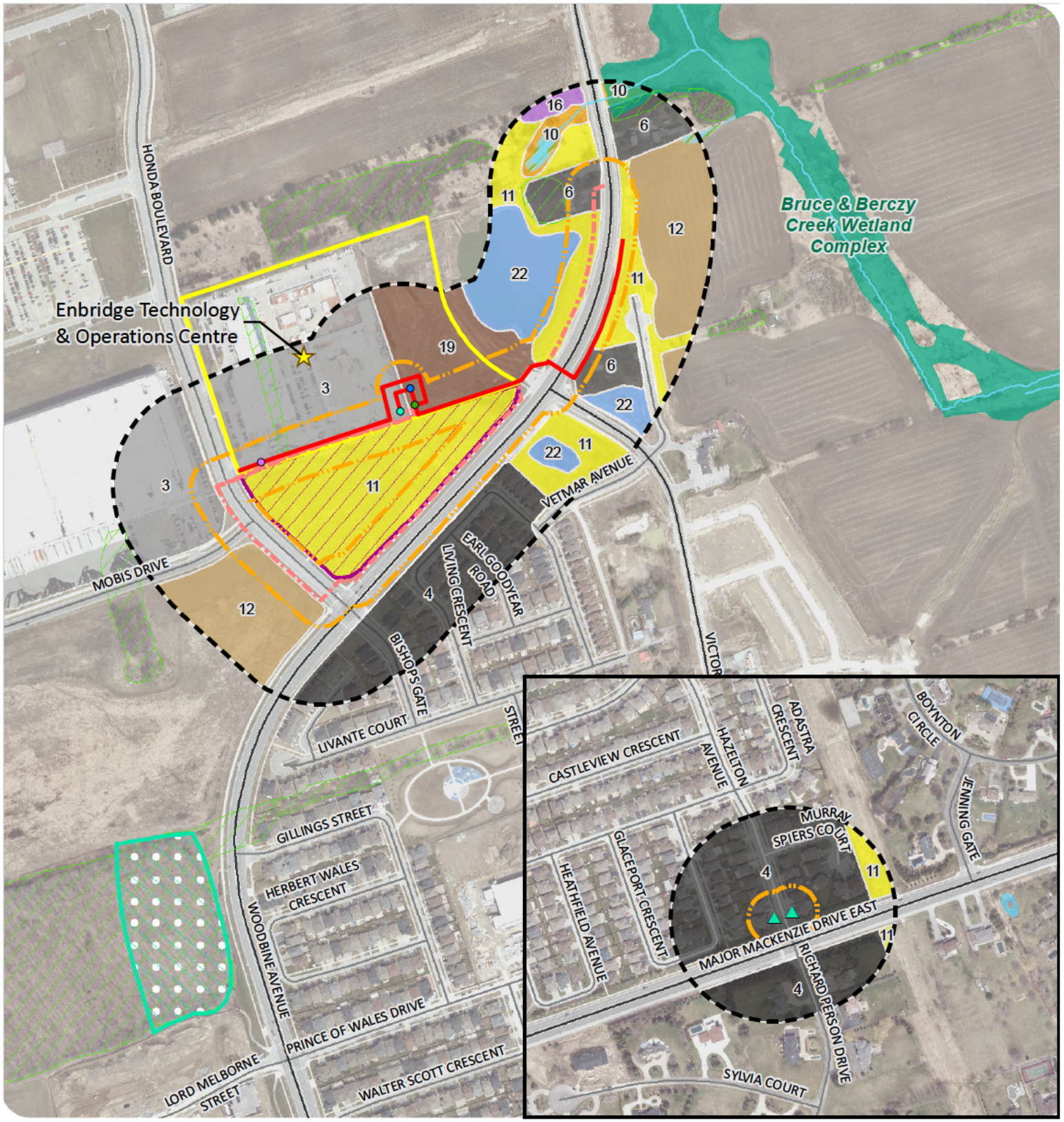

ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

NATURAL ENVIRONMENT FEATURES

FIGURE 2

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Study Area (120 m)
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody
- Unevaluated Wetland
- Provincially Significant Wetland
- Wooded Area (MNRF)
- Candidate Habitat Species of Conservation Concern
- Candidate SAR Bat Habitat and Significant Wildlife for Bat Maternity Colonies
- Potential Grassland Breeding Bird Habitat

Ecological Land Classification

- 3. CVC: Commercial and Institutional
- 4. CVR_1: Low Density Residential
- 6. CVR_4: Rural Property
- 10. MAM: Meadow Marsh
- 11. MEM: Mixed Meadow
- 12. OAGM1: Annual Row Crop
- 16. THD: Deciduous Thicket
- 19. Disturbed Ground
- 22. Stormwater Management Facility

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MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N
FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:6,000

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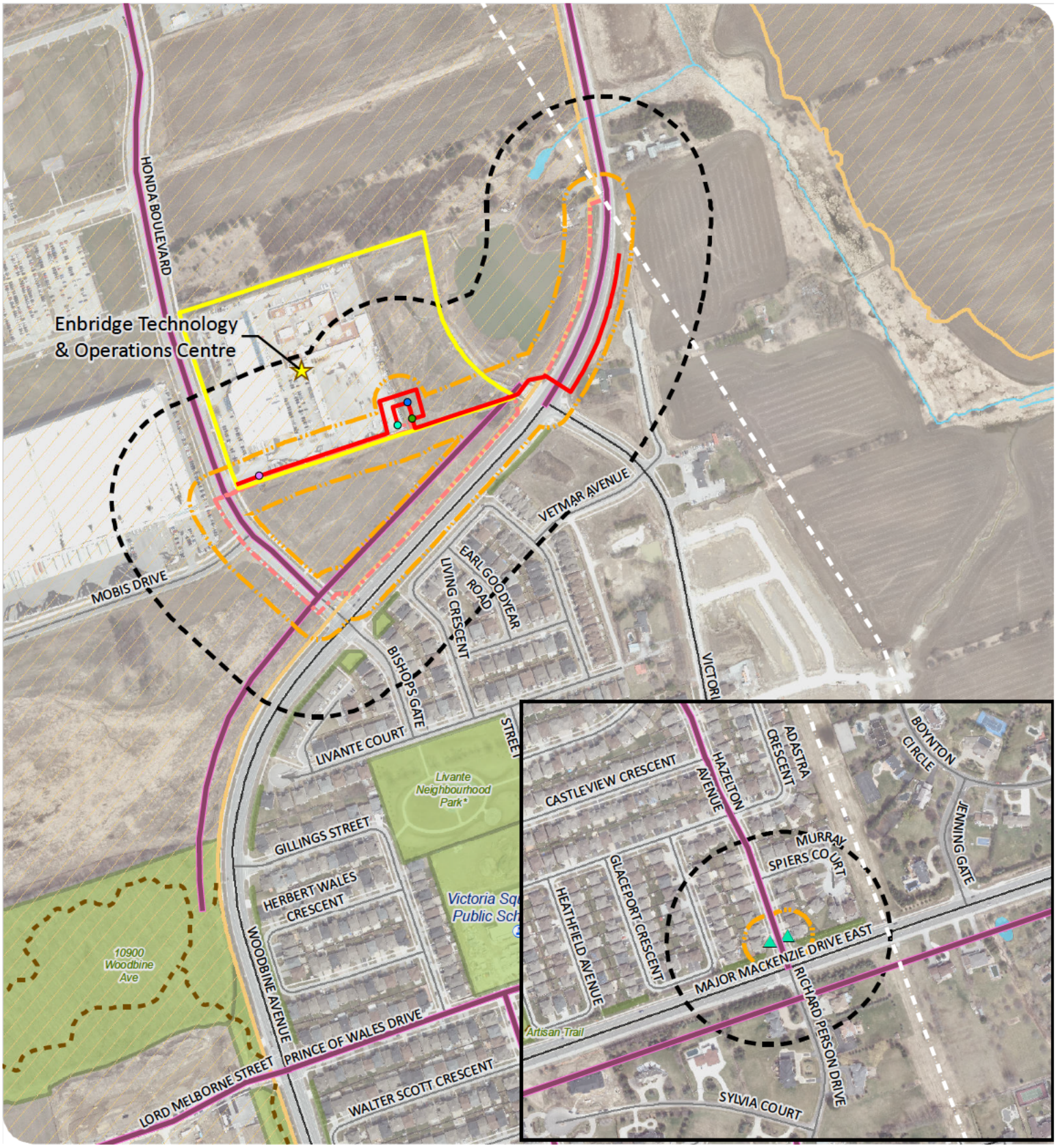
PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12



ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

SOCIO-ECONOMIC FEATURES

FIGURE 3

ENBRIDGE

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Study Area (120 m)
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody
- Educational Facility
- Hydro Line
- Trail
- Bicycle Route
- Business Park
- Park

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MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

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MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N
FILE LOCATION: I:\GIS\189005 - Enbridge

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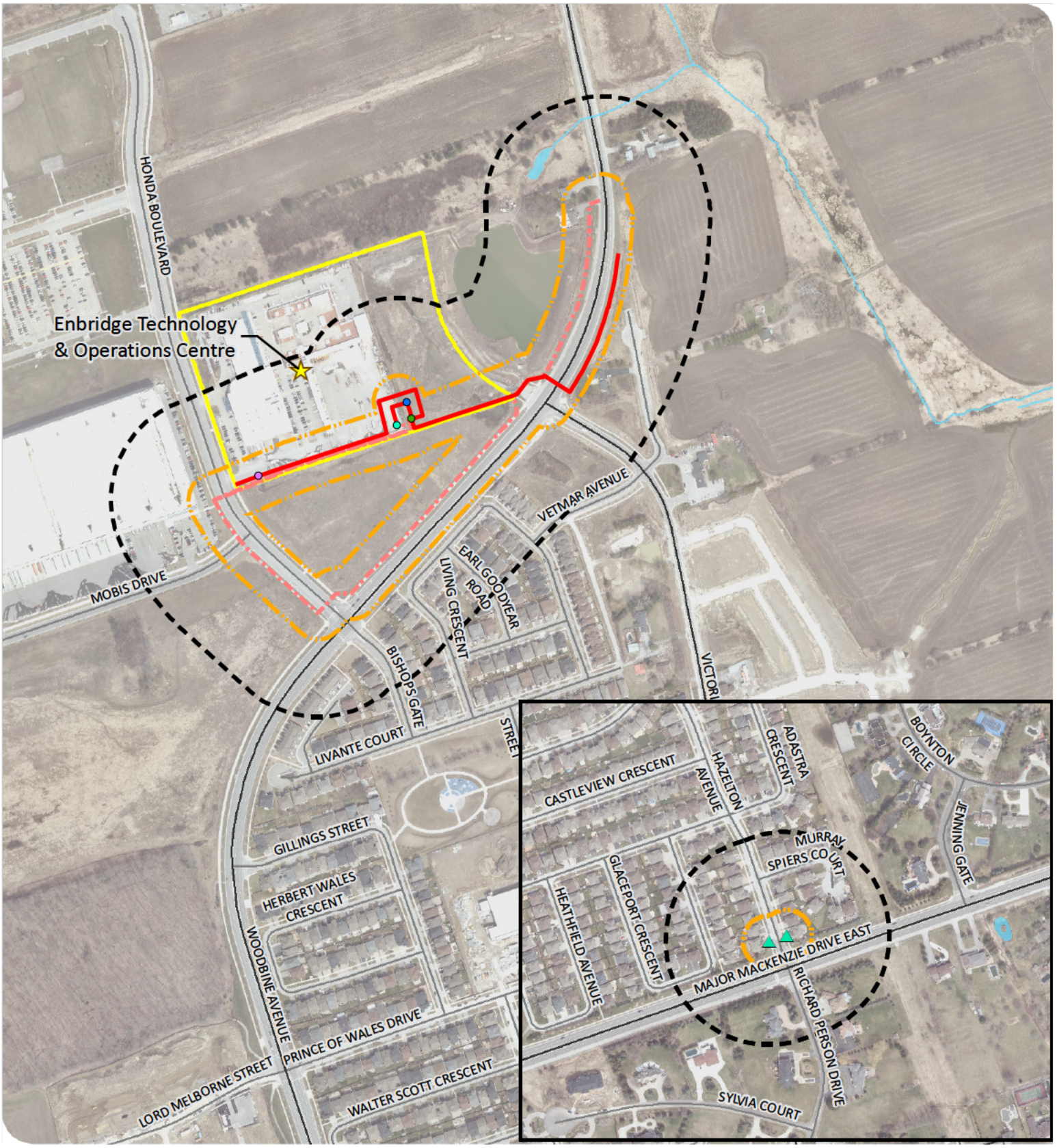

ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

STUDY AREAS
FIGURE 4

ENBRIDGE

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Study Area (120 m)
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody

DILLON CONSULTING

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SCALE 1:6,000

0 0.04 0.08 0.16 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12

5.0 POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

Section 6 of the Environmental Report includes a detailed mitigation strategy based on potential impacts of the Project. This Amendment assesses the potential for previously unassessed/new impacts as a result of the proposed Project changes, and, where necessary, recommends additional mitigation measures. Select mitigation measures are illustrated on **Figure 5**.

This Amendment also considers potential changes in cumulative effects. Proposed developments within 1 km of the Project are listed in Section 7.3 of the Environmental Report, and additional developments identified by the Toronto and Region Conservation Authority are listed in Addendum #1. These proposed developments were reviewed to identify any potential changes to cumulative Project interactions as a result of the proposed Project changes.

5.1 NEW PREFERRED ROUTE

Since the new Preferred Route was previously evaluated as the Phase 1 Alternative Route in the Environmental Report, a new effects assessment is not deemed warranted and, instead, a comparison of constraints between the previously identified Phase 1 Preferred Route and the new Preferred Route is provided in the following subsections.

Considering the criteria used to evaluate the Phase 1 Preferred and Alternative Routes in Section 5 of the Environmental Report, there are few differences between the proposed changes in this Amendment relative to the original Project scope included in the Environmental Report.

BIOPHYSICAL CONSTRAINTS

There are no previously unidentified biophysical constraints associated with the new Preferred Route.

Neither the previously identified Phase 1 Preferred Route, nor the new Preferred Route, cross any waterbodies, watercourses, wetlands/wetland complexes, Special Policy Areas (i.e., Greenbelt), or Areas of Natural or Scientific Interest.

The new Preferred Route is located entirely within municipal road rights-of-way and on previously disturbed land owned by Enbridge.

SOCIO-ECONOMIC CONSTRAINTS

There are no previously unidentified socio-economic constraints associated with the new Preferred Route.

The new Preferred Route will have fewer impacts on the neighbourhood/residences to the south of Woodbine Avenue, as it crosses to the west side of Woodbine Avenue just north of Victoria Square Boulevard, before the commencement of the housing subdivisions. In comparison, the previously identified Phase 1 Preferred Route would have run parallel to Woodbine Avenue from the north tie-in point southwest to Honda Boulevard and would have resulted in a larger footprint adjacent to the residential area.

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TECHNICAL CONSTRAINTS

There are no previously unidentified technical constraints associated with the new Preferred Route.

The new Preferred Route has a shorter overall length (approximately 755 m as opposed to 1.3 km) and has only one road crossing (in comparison to three crossings associated with the previously identified Phase 1 Preferred Route).

SUMMARY

The new Preferred Route does not result in any material change to the biophysical, socio-economic, or technical constraints considered in the Environmental Report. There are minor advantages to the new Preferred Route over the previously identified Phase 1 Preferred Route including lesser impact on nearby residences (south of Woodbine Avenue), shorter overall length, and fewer road crossings.

The assessment of potential Project effects, cumulative effects, and recommended mitigation measures presented in the Environmental Report in regard to the Phase 1 Preferred Route remains unchanged as a result of the new Preferred Route. Consequently, no additional mitigation measures beyond those recommended in the Environmental Report are required.

5.2 PROPOSED HYDROGEN-BLENDING FACILITIES

As noted in **Section 3**, the proposed hydrogen-blending facilities will be located entirely within Enbridge's property at 101 Honda Boulevard on previously disturbed land.

Given the setting of the proposed hydrogen-blending facilities in relation to the previously evaluated Phase 1 Preferred and Alternative Routes, there are no additional constraints (biophysical, socio-economic, or technical) anticipated as a result of the proposed hydrogen-blending facilities, as they are located within the Study Area that was reviewed and assessed in the Environmental Report.

Enbridge will be applying for an Environmental Compliance Approval (ECA) from the Ontario Ministry of the Environment, Conservation and Parks (MECP) that will permit air and noise emissions associated with the proposed hydrogen-blending facilities. As part of the ECA application to MECP, Enbridge will complete all necessary studies to determine the potential impact of the air and noise emissions from the proposed hydrogen-blending facilities.

The following subsections provide an assessment of potential effects and cumulative effects associated with the proposed hydrogen-blending facilities, and recommends additional mitigation measures, where necessary.

POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

Table 1 provides the assessment of potential impacts associated with the proposed hydrogen-blending facilities on the physical, natural, and socio-economic environment, as well as recommended mitigation measures.

The assessment provided in **Table 1** was only conducted for the proposed hydrogen-blending facilities described in this Amendment that were not previously evaluated in the Environmental Report. Effects and mitigation measures considered in the Environmental Report are not repeated below.

The proposed hydrogen-blending facilities do not result in a change to the effects assessment for most of the components; however, new potential interactions have been identified for the Physiography, Topography, and Surficial Geology; Atmospheric Environment; Noise; and Access Modifications and Restrictions components.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
PHYSICAL ENVIRONMENT			
Physiography, Topography, and Surficial Geology	***Construction*** The topography at the proposed facility sites is generally level and no unique physical features are present. The footprint of the proposed hydrogen-blending facilities will be graded, if required, and the facilities will be constructed on concrete pads. The area within the fenced compound will be gravelled. There is potential for a minor, localized change in topography as a result of grading and the installation of permanent components that may alter natural surface drainage patterns. ***Operation*** No effects on physiography, topography, and surficial geology are anticipated during operation of the proposed hydrogen-blending facilities.	• Pre-construction contours and drainage patterns should be re-established around the facilities, to the extent feasible, following construction. • Maintain site drainage during all phases of construction. Ensure construction activities do not cause the ponding of water or unintentional channelization of surface water flow. • Following the completion of construction activities, regrade areas with vehicle ruts or erosion gullies if required.	No significant net effect is anticipated following implementation of the recommended mitigation measures.
Groundwater	***Construction*** The proposed hydrogen-blending facilities will be located above-ground and no interaction with groundwater is anticipated during construction. ***Operation*** No effects on groundwater are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	Not applicable (N/A) – no new potential effects are anticipated.
Bedrock	***Construction*** The proposed hydrogen-blending facilities will be located above-ground and no interaction with bedrock is anticipated during construction. ***Operation*** No effects on bedrock are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Seismicity	***Construction*** No effects of seismic activity are anticipated during construction of the proposed hydrogen-blending facilities. ***Operation*** Impacts to the proposed hydrogen-blending facilities as a result of seismic activity are not anticipated at this time. The facilities will be designed in accordance with low to moderate levels of seismicity and comply with Canadian Geological Survey data and National Building Code minimum standards.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
NATURAL ENVIRONMENT			
Atmospheric Environment	***Construction*** Effects on the atmospheric environment from construction were previously assessed in the Environmental Report and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** There will be venting of natural gas for token relief at the proposed hydrogen-blending facilities during operations. Details on the venting will be provided in Enbridge's ECA permit application to MECP.	• For construction, no additional mitigation measures are recommended beyond the measures provided in the Environmental Report. • During operations, implement requirements/conditions of the ECA permit from MECP.	No significant net effect is anticipated following implementation of the recommended mitigation measures.
Wetlands	***Construction*** There are no wetlands located within 30 m of the proposed hydrogen-blending facilities and no interaction with wetlands is anticipated during construction. ***Operation*** No effects on wetlands are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Surface Water, Fish and Aquatic Habitat	***Construction*** There are no watercourses located within 30 m of the proposed hydrogen-blending facilities and no interaction with surface water, fish, and aquatic habitat is anticipated during construction. ***Operation*** No effects on surface water, fish, and aquatic habitat are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Terrestrial Habitat and Vegetation	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land adjacent to manicured lawns, sidewalks, and major roads (Woodbine Avenue and Honda Boulevard). Vegetation encountered will consist of common roadside vegetation of minor ecological value (vegetation capable of colonizing new roadside edges). Effects on terrestrial habitat and vegetation were previously assessed in the Environmental Report and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects on terrestrial habitat and vegetation are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Wildlife, Significant Wildlife Habitat and Species at Risk	***Construction*** No effects on wildlife, significant wildlife habitat, and species at risk are anticipated during construction of the proposed hydrogen-blending facilities. ***Operation*** No effects on wildlife, significant wildlife habitat, and species at risk are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Agriculture and Soils	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land adjacent to manicured lawns, sidewalks, and major roads (Woodbine Avenue and Honda Boulevard). Topsoil will be removed within the footprint of the facilities to accommodate site preparation and installation of the concrete pad. No interaction with agricultural soils is anticipated during construction. ***Operation*** No effects on agriculture and soils are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
SOCIO-ECONOMIC ENVIRONMENT			
Noise	***Construction*** Construction activities have the potential to disturb residents south of Woodbine Avenue in the Victoria Square neighbourhood. Construction-related noise effects are expected to be minor, temporary, and localized, particularly given the existing acoustic environment which includes regular traffic noise on Woodbine Avenue. ***Operation*** There may be some noise from the facilities during operations, however, this will be permitted through the MECP ECA process.	• For construction, no additional mitigation measures are recommended beyond the measures provided in the Environmental Report. • During operations, implement requirements/conditions of the ECA permit from MECP.	No significant net effect is anticipated following implementation of the recommended mitigation measures.
Access Modifications and Restrictions	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge, however, there is the potential that construction of the District Station may require some workspace that extends into the sidewalk along Honda Boulevard, temporarily disrupting pedestrian traffic. Access restrictions on road traffic are not anticipated. ***Operation*** No effects on access will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are recommended beyond the measures provided in the Environmental Report.	No significant net effect is anticipated following implementation of the recommended mitigation measures.

Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Traffic Disruption	***Construction*** Effects on traffic as a result of construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects on traffic will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Vibration	***Construction*** Effects of vibration during construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects of vibration will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Construction Waste	***Construction*** Effects of construction wastes were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects of construction waste will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Bentonite Slurry	***Construction*** Bentonite slurry is generated during trenchless pipeline construction and, therefore, will not be generated during facility construction. ***Operation*** No effects of bentonite slurry will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Hydrostatic Test Water	***Construction*** Hydrostatic test water is not required for construction of the proposed hydrogen-blending facilities. ***Operation*** No effects of hydrostatic test water will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Aesthetics	***Construction*** Effects on aesthetics as a result of construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** The proposed hydrogen-blending facilities will be permanent and will alter the current aesthetics of the area; however, in the context of the existing setting, including the existing Enbridge and Mobis Parts Canada buildings, and the presence of Woodbine Avenue, a busy thorough-fare immediately adjacent to the property, the change in aesthetics is anticipated to be minor.	• No additional mitigation measures are required.	No significant net effect is anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Existing and Planned Land Use	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge. As such, there will be no effects on existing and planned land use at the proposed facility locations. ***Operation*** No effects on existing and planned land use will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Existing Linear Infrastructure Corridors and Other Infrastructure	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge that is currently vacant. No interaction with existing linear infrastructure corridors and other infrastructure is anticipated. ***Operation*** No effects on existing linear infrastructure corridors and other infrastructure will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Population and Demographics	***Construction*** No effects on population and demographics will occur during construction of the proposed hydrogen-blending facilities. ***Operation*** No effects on population and demographics will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Economic Activities, Employment and Labour Force	***Construction*** Effects on economic activities, employment, and labour force as a result of construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects on economic activities, employment and labour force will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Tourism and Recreation	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge. No interaction with tourism and recreation is anticipated. ***Operation*** No effects on tourism and recreation will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Indigenous Communities	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge. No interaction with Indigenous communities is anticipated. ***Operation*** No effects on Indigenous communities will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Archaeological and Heritage Resources	***Construction*** The Stage 1 Archaeological Assessment conducted for the Project concluded that the Phase 1 Study Area be considered free of archaeological concern and no further assessment was recommended. As such, no interaction with archaeological and heritage resources is anticipated during construction. ***Operation*** No effects on archaeological and heritage resources will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Community Services	***Construction*** No effects on community services will occur during construction of the proposed hydrogen-blending facilities. ***Operation*** No effects on community services will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Contaminated Sites	***Construction*** There is limited potential to encounter contaminated sites during construction. Effects of contaminated sites discovered during construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects of contaminated sites will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Planning Policies	***Construction*** The Project will need to conform to applicable provincial and municipal planning policies. No new interactions have been identified as a result of the proposed hydrogen-blending facilities ***Operation*** No effects on planning policies will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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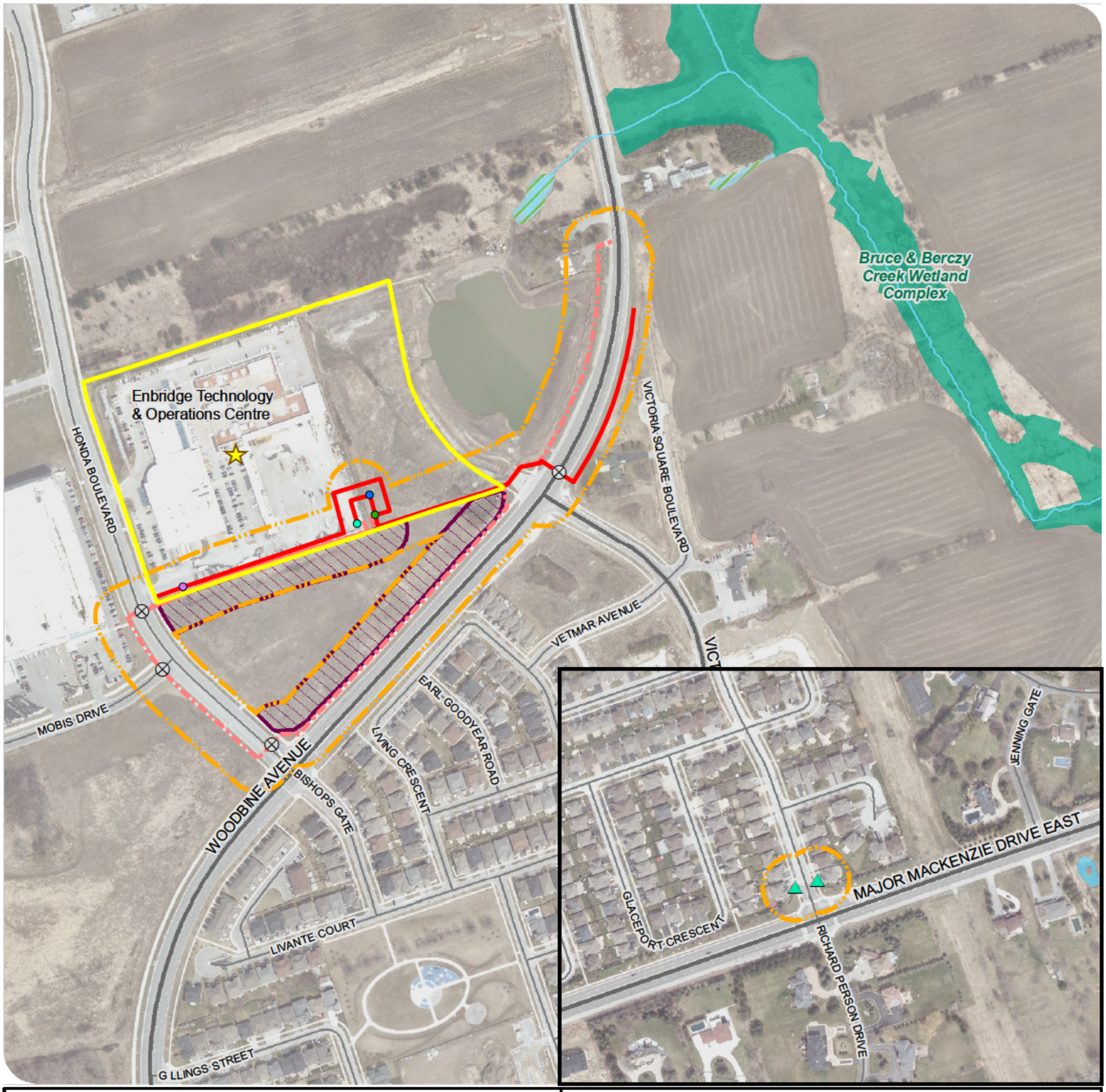

⊗ **Potential Road or Rail Crossing.** For minor road crossings, open-cut or trenchless crossings will be applied. Contact the local region or municipality. Enbridge to develop a Traffic Management Plan to ensure that traffic is maintained while the crossing is conducted. Flag persons will be provided as required. Refer to Section 18.0 of the Enbridge Environmental Construction and Maintenance Manual, 2019.

Candidate Significant Wildlife Habitat. These areas are known to contain Significant Wildlife Habitat. Abide by restricted activity periods and mitigation measures in Table 7.

ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

MITIGATION

FIGURE 5

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody
- Unevaluated Wetland
- Provincially Significant Wetland

*As identified in the TRCA's 2010 Draft Rouge River Watershed Management Plan.

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N
FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:5,000

0 0.0325 0.065 0.13 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12

CUMULATIVE EFFECTS ASSESSMENT

Cumulative effects to the physical and natural environment are anticipated to be negligible given the land for the proposed hydrogen-blending facilities has been previously disturbed and the permanent facility footprints will be minimal in an area of existing high anthropogenic disturbances. Residual air and noise emissions are anticipated to be well within regulatory standards and will be in compliance with the MECP ECA permit.

There is a possibility of cumulative effects on the socio-economic environment related to construction traffic, noise, and dust; however, as described in Section 7 of the Environmental Report, the use of appropriate mitigation techniques and the short timeframe for construction will mitigate any cumulative impacts to a low magnitude. Consequently, no significant cumulative effects are anticipated as a result of the addition of the proposed hydrogen-blending facilities to the scope of the Environmental Report.

SUMMARY

The assessment of potential Project effects, cumulative effects, and recommended mitigation measures presented in the Environmental Report remains largely unchanged as a result of the proposed hydrogen-blending facilities.

The proposed hydrogen-blending facilities will result in a minor, localized alteration of topography, some air and noise emissions during operations, a minor alteration of visual aesthetics, and potential temporary pedestrian access restrictions; however, no significant net effects are anticipated with the implementation of mitigation measures. The mitigation measures recommended in the Environmental Report are considered adequate to address these potential minor effects in conjunction with the implementation of any requirements/conditions of the MECP ECA permit for air and noise emissions.

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6.0 STAKEHOLDER AND INDIGENOUS CONSULTATION UPDATE

This draft Amendment is being circulated to all individuals on the Project contact list developed for the Environmental Report. In addition, a Notice of Project Change is being circulated to all individuals who participated in the consultation process either by attending the Open Houses, sending emails to the Project email inbox, or who otherwise provided their contact details to a Project Team Member with an interest in staying informed of Project updates. The Notice of Project Change will also be circulated to approximately 2,700 residents and businesses located within the Phase 1 Study Area (see **Figure 4**). The Notice of Project Change requests public comment on the proposed changes and provides Project contact information.

A 30-day public comment period will be observed following the release of this draft Amendment. Any comments received as a result of consultation relating to the Amendment will be tracked and responses will be provided, as required. Meetings will be held with applicable agencies, Indigenous communities, and other stakeholders on an as-needed basis to review the proposed changes to the Project. A summary of the consultation results, as well as the consultation logs, will be provided in **Appendix A** of the finalized Amendment to be submitted to the OEB.

The final Amendment will be available for review by interested stakeholders on the Enbridge Project website at <https://www.enbridgegas.com/about-us>, following submission to the OEB (anticipated by March 31, 2020).

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7.0 CONCLUSIONS

This Amendment provides the results of Dillon's review of the proposed changes to the Project scope (as described in **Section 3**) since the completion of the Environmental Report in May 2019, as well as the Addendums in September and December 2019.

The new Preferred Route is similar to the Phase 1 Alternative Route evaluated in the Environmental Report. The setting and assessment of the previously identified Phase 1 Preferred Route can be applied to the new Preferred Route given their proximity to one another. The new Preferred Route results in some advantages over the previously identified Phase 1 Preferred Route, including a shorter overall length, fewer road crossings, and smaller overall construction footprint. The proposed hydrogen-blending facilities will be located entirely on Enbridge-owned property and will be subject to the MECP ECA process.

Based on this review, Dillon has determined that the proposed changes to the Project scope do not result in any material change to the assessment, recommended mitigation measures, or conclusions, as presented in the Environmental Report, and no further assessment is considered necessary.

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8.0 REFERENCES

Dillon Consulting Limited (Dillon). 2019a. *Low-Carbon Energy Project Environmental Report*. May 2019. Prepared for Enbridge Gas Inc. Markham, ON. ix + 100 pp. + Appendices. Available at: https://www.enbridgegas.com/about-us.

Dillon Consulting Limited (Dillon). 2019b. *Enbridge Gas Inc. Low-Carbon Energy Project Environment Report Addendum*. September 2019. Prepared for Enbridge Gas Inc. Markham, ON. ii + 5 pp. Available at: https://www.enbridgegas.com/about-us.

Dillon Consulting Limited (Dillon). 2019c. *Enbridge Gas Inc. Low-Carbon Energy Project Environmental Report Addendum #2*. December 2019. Prepared for Enbridge Gas Inc. Markham, ON. i + 8 pp. Available at: https://www.enbridgegas.com/about-us.

Ontario Energy Board (OEB). 2016. *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition*. 70 pp.

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APPENDIX A

Consultation Update – Summary and Logs

[Note: To be completed and included in Final Amendment for OEB submission]

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ATTACHMENTS
(5 – CLFN)

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

[redacted] <[redacted]@enbridge.com> Fri, Mar 8, 2019 at 3:25 PM
To: "[redacted]@curvelake.ca" <[redacted]@curvelake.ca>, "Consultation Clerk (ConsultationClerk@curvelake.ca)" <ConsultationClerk@curvelake.ca>
Cc: "[redacted] (ENERGY) ([redacted]@ontario.ca)" <[redacted]@ontario.ca>

Hi [redacted]

I'm emailing to provide some advance materials about our proposed Power to Gas Pipeline Project in the City of Markham. Please find attached the Project Notification letter, Notice of Commencement, map of the proposed location and a copy of the Duty to Consult letter issued by the Ministry of Energy, Northern Development & Mines for your information and reference.

Please don't hesitate to contact me with any questions you may have regarding the proposed project.

I look forward to connecting with you soon.

Regards,

[redacted]

[redacted]
Sr. Advisor, Community Engagement, Eastern Region

Public Affairs and Communications

—

ENBRIDGE PIPELINES INC.
TEL: 416-753-6962 | CELL: 416-525-2497
2225 Sheppard Avenue East, Atria III, 17th Floor

North York, ON M2J 5C2

enbridge.com

Integrity. Safety. Respect.

4 attachments

- **Curve Lake FN Notification Letter_March 8.pdf**
  395K
- **EGI-LCEP-NOC_Mar-2019_Admail.pdf**
  543K
- **Fig1_ProjectLayout_Feb21.pdf**
  12427K
- **Power to Gas Delegation Letter.pdf**
  1560K

ENBRIDGE

DILLON CONSULTING

March 8, 2019

Dr. [redacted] Lands & Resources Consultation Liaison
Curve Lake First Nation
22 Winookeedaa Road
Curve Lake, Ontario K0L1R0

RE: Enbridge Gas Inc. Low-Carbon Energy Project City of Markham, Ontario
Notice of Project

Dear [redacted]

Enbridge Gas Inc. (Enbridge) has retained Dillon Consulting Limited (Dillon) to undertake an environmental and cumulative effects assessment and route selection study for approximately 6.8 kilometers (km) of natural gas pipeline and associated facilities in Markham, Ontario. The project objective is to create a network supplying blended natural gas with a small amount of hydrogen gas within Enbridge's existing natural gas pipeline infrastructure (the Project). The study is being conducted in accordance with the Ontario Energy Board's (OEB) *Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition, August 2016*. Once the study is complete, Enbridge may apply to the OEB for approval to construct the new pipeline. If approved, construction would be completed in two phases in 2020 and 2021.

Enbridge has an operating electrolyzer at its Training and Operations Centre located at 101 Honda Boulevard in Markham, Ontario. The electrolyzer converts surplus electricity into hydrogen gas and oxygen. The hydrogen gas can have multiple uses. Enbridge is proposing to blend a low concentration of hydrogen (up to 2% by volume) into an isolated area of the gas distribution network in an effort to reduce greenhouse emissions. This blended gas will remain within Enbridge's natural gas specifications. It can be utilized in the same way traditional natural gas is used, for example, to heat homes and water. As is the case with any other project, Enbridge will take all necessary measures to ensure that the safety of the gas distribution system is maintained at all times.

A Preliminary Preferred Route (PPR) for the proposed natural gas pipeline has been identified. The PPR follows portions of Woodbine Ave., as well as existing residential roads located in subdivisions, generally located south of Honda Blvd. and north of Highway 7 in the City of Markham. Phase 1 of the Project includes the installation of approximately 1 km of nominal pipe size (NPS) 6-inch steel Extra High Pressure (XHP) natural gas pipe, 250 m of NPS 6-inch steel High Pressure (HP) pipe and 75 m of NPS 8-inch Intermediate Pressure (IP) polyethylene (PE) natural gas pipeline. Phase 2 of

Continued . . .

51 Breithaupt Street
Suite 200
Kitchener, Ontario
Canada
N2H 5G5
Telephone
519.571.9833
Fax
519.571.7424

the Project is comprised of multiple segments of pipeline which will convey blended hydrogen and natural gas, and includes the installation of 1.2 km of NPS 8-inch IP PE pipe, 2.9 km of NPS 8-inch and NPS 6-inch IP PE pipe, 350 m of NPS 6-inch IP PE pipe, 60 m of NPS 6-inch IP PE pipe, 10 m of NPS 4-inch IP PE pipe, 350 m of NPS 4-inch IP PE pipe, and 600 m of NPS 2-inch IP PE pipe. An alternative route is also being considered as part of the study, and is located in the same general area as the PPR. Locations requiring both temporary and permanent disconnection points of gas pipelines have been identified as well for both routes. A map showing both the PPR and alternative pipeline route is enclosed (**Figure 1**).

In order to undertake a successful consultation program, Indigenous engagement will play a key role in the Project. As noted in the attached Notice of Study Commencement, Enbridge will be hosting Open House meetings as part of the study.

As part of the initial phase of the study, we are collecting information on the natural environment, archaeological features and socio-economic features for both the PPR and alternative route described above. Examples of data being collected include information on terrestrial and aquatic vegetation and wildlife, archaeological and heritage resources, community parks and picnic areas, community facilities, nature trails, bus routes and other utilities such as water, sewage, industrial and commercial utilities.

Enbridge is committed to meaningful engagement with Indigenous groups and the satisfaction of the duty to consult. Enbridge looks forward to engaging with your Nation to ensure your community's interests are being represented. Your Nation is invited to provide comments regarding the proposed project. Specifically, Enbridge is seeking information about any potential impacts that the project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts.

We invite your community to be involved in the engagement and consultation process. Kindly indicate whether your community is interested in participating in the engagement activities on or before **March 31, 2019.** If you are unable to respond by the above date and are intending to do so, please provide an alternative date for when the Project Team may expect a response.

Enbridge would also be interested in meeting with your Nation to share project related information should you wish. Alternatively, please advise if you do not wish to meet individually but would prefer to be kept informed of the project.

On behalf of the Project Team, thank you in advance for your consideration regarding the initial phases of the project. Please do not hesitate to contact me with any questions you may have.

Continued . . .

Sincerely,



Sr. Advisor, Community Engagement
Enbridge Gas Inc.
O: 416-753-6962
C: 416-525-2497
[redacted]@enbridge.com

Encls. Notice of Study Commencement and Open House
Figure 1 – Project Layout and Location
MOENDM Delegation Letter

PROPOSED ENBRIDGE LOW-CARBON ENERGY PROJECT
NOTICE OF STUDY COMMENCEMENT AND OPEN HOUSE
CITY OF MARKHAM, ONTARIO
ENBRIDGE GAS INC.

The Study

Enbridge Gas Inc. (Enbridge) has retained Dillon Consulting Limited (Dillon) to begin an environmental and route selection study for approximately 6.8 kilometers (km) of natural gas pipeline and associated facilities. The objective of the project is to blend a small amount of hydrogen gas into our existing natural gas network, to reduce greenhouse gas emissions. Enbridge operates a facility which converts surplus electrical energy to hydrogen gas, which would be injected into the existing natural gas network. The blended gas would be distributed within the area outlined on the map below. Once the study is complete, Enbridge may apply to the Ontario Energy Board (OEB) for approval to construct the new pipeline. If approved, construction may begin in 2020.

The preferred route for Phase 1 of the project would involve the installation of approximately 1,325 m of 6-inch and 8-inch pipe primarily along Woodbine Ave. and Honda Blvd., ending at Enbridge's Technology and Operations Centre. Phase 2 of the project would involve multiple pipeline segments of various lengths and sizes ranging from 2-inch to 8-inch pipe along Victoria Square Blvd., Woodbine Ave., Rodick Rd., Prince Regent St., Major Mackenzie Dr. E, Village Pkwy., Elgin Mills, Honda Blvd., and Victoria Square Blvd.

An alternative route is also being considered as part of the study. The alternative route for Phase 1 of the project would involve the installation of 450 m of 6-inch pipe along Victoria Square Blvd. and an unnamed street. Phase 2 of the project will involve multiple pipeline segments of various lengths and sizes ranging from 6-inch to 8-inch pipe along Honda Blvd., Bishop's Gate, Livante Ct., Helford St., Prince of Wales Dr., Duke of York St., Woodbine Ave., Betty Roman Blvd., Markland St., and Calvert Rd. The preliminary preferred and alternative routes are identified on the map below.

The Process

The study is being conducted in accordance with the OEB's Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario. The study will review the need and justification for the pipeline, describe the natural and socio-economic environment, evaluate the potential facilities from a social and environmental perspective, outline safety measures, and describe appropriate measures for impact mitigation and monitoring.

Invitation to the Community

Stakeholder consultation is a key component of this study. Members of the general public, agencies, Indigenous communities and interest group representatives are invited to participate in the study. We will be hosting Open Houses to provide you with an opportunity to review the project and provide input. Details on the Open Houses are as follows:

Location: Monte Carlo Inn (8990 Woodbine Ave., Markham)
Date: March 19, 2019 (Tuesday)
Time: 5 PM to 8 PM

Location: Enbridge Technology & Operations Centre
(101 Honda Blvd., Markham)
Date: March 23, 2019 (Saturday)
Time: 9 AM to 12 PM
Free pancake breakfast will be served!

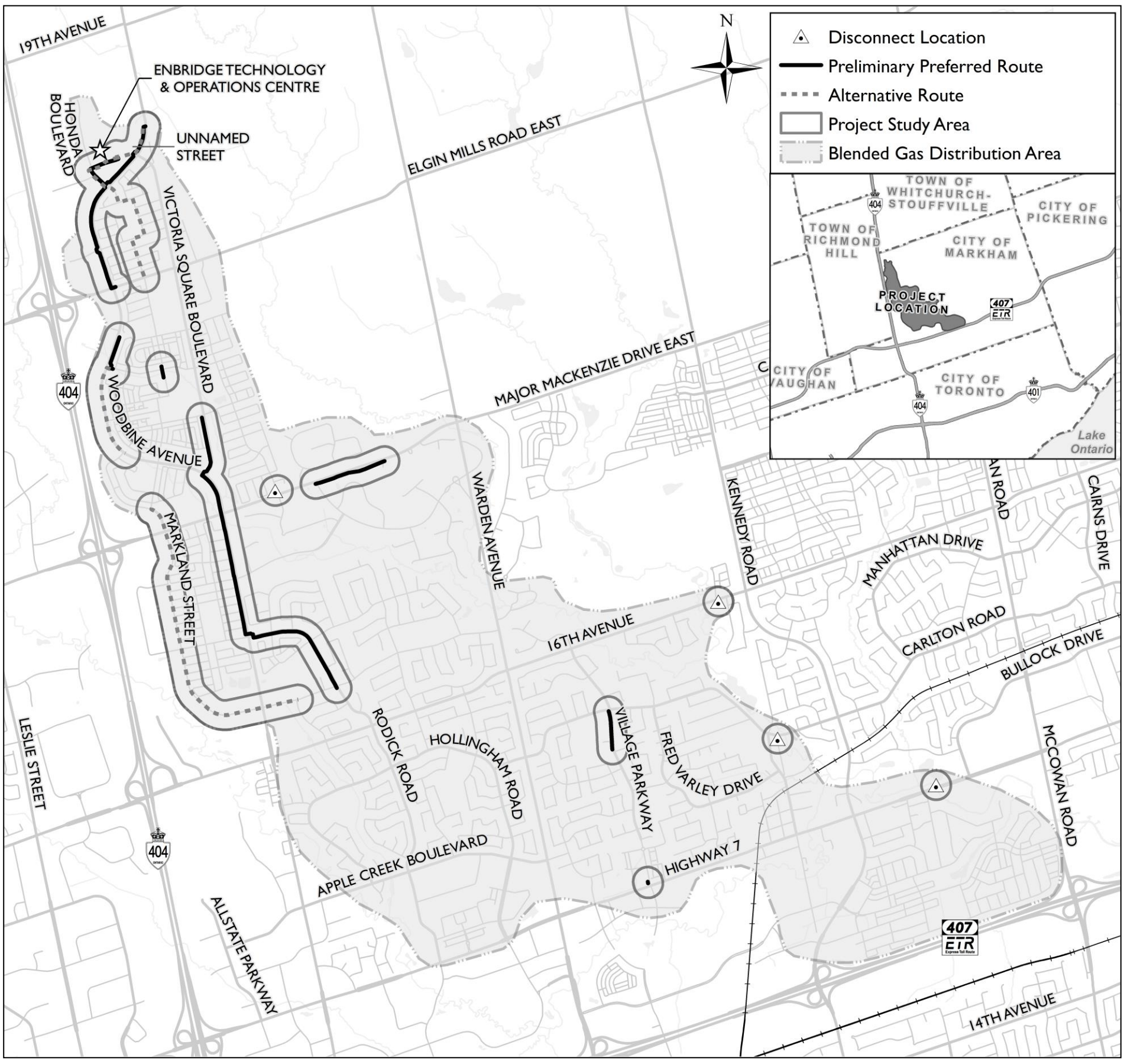
Win an Ecobee (valued at $300)

Enter for a chance to win an Ecobee smart thermostat at one of the Open Houses.

Representatives from Enbridge and Dillon will be in attendance to discuss the project and answer questions. Your input will be used to confirm the preferred route and create mitigation plans to be implemented during construction. If you are interested in participating, or would like to provide comments, please come to one of the Open Houses or contact one of the individuals listed as soon as possible. For more information about the proposed project and hydrogen blending, please visit http://enbridgegas.com/LowCarbonEnergyProject.

Tanya Turk
Sr Environmental Advisor
Enbridge Gas Inc.
101 Honda Blvd., Markham, ON L6C 0M6
(416) 495-3103
tanya.turk@enbridge.com

Tristan Lefler
Environmental Assessment Project Manager
Dillon Consulting Limited
51 Breithaupt St., Suite 200, Kitchener, ON
N2H 5G5
(519) 571-9833
LowCarbonEnergyEA@dillon.ca



ENBRIDGE

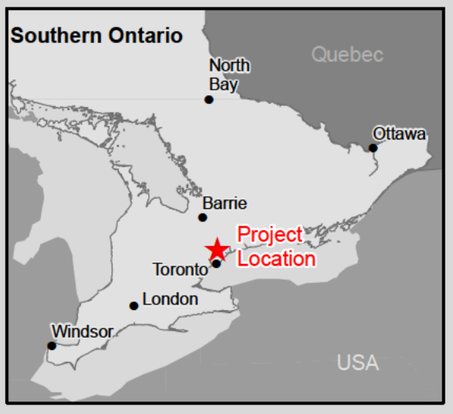
ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

PROJECT LAYOUT

FIGURE 1

- Disconnect Location
- Preliminary Preferred Route
- Alternative Route
- Rail
- Project Study Area
- Blended Gas Distribution Area
- Municipal Boundary



0 125 250 500 m

SCALE 1:28,000

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: NT / TL
MAP PROJECTION: NAD 1983 UTM Zone 17N

DILLON CONSULTING

PROJECT: 18-9005

DATE: 2019-02-21

© The Regional Municipality of York

FILE LOCATION: I:\GIS\189005 - Enbridge Power2Gas\MXD\Fig1_ProjectLayout_Feb21.mxd

Ministry of Energy, Northern Development and Mines

77 Grenville Street
6th Floor
Toronto ON M7A 2C1

Tel: (416) 314-2599

Ministère de l'Énergie, Développement du Nord et Mines

77 rue Grenville
6e étage
Toronto ON M7A 2C1

Tél: (416) 314-2599

Ontario

Indigenous Energy Policy

VIA EMAIL

March 1, 2019

[redacted]
Technical Manager, Regulatory Applications
Enbridge Gas Distribution Inc.
500 Consumers Road
North York, Ontario M2J 1P8

Re: Power to Gas Pipeline Project

Dear [redacted]

Thank you for your email dated January 4, 2019 notifying the Ministry of Energy, Northern Development and Mines of Enbridge's proposal for the Power to Gas Pipeline Project and requesting clarification on Duty to Consult requirements.

We understand that Enbridge is proposing to construct approximately 6.8 kilometers of natural gas pipeline in the City of Markham to isolate a small portion of Enbridge's existing distribution system to ensure that only blended natural gas is utilized in that isolated section. The project is associated with Enbridge's operating electrolyzer at its Training and Operations Center at 101 Honda Boulevard in Markham. The project, as outlined in the project description from Enbridge, consists of two phases with varying diameter and length of pipeline.

Phase 1 of the project consists of approximately 750 meters of NPS 6 steel extra high-pressure natural gas pipeline. The expected route will begin approximately 40 meters south of 11182 Woodbine Avenue in Markham, that will travel south on Woodbine Avenue and turn west onto Honda Boulevard. The pipeline will terminate at the Training and Operating Centre. Phase 2 will require the construction of multiple segments of varying diameter and length of pipeline. These segments will be required to provide system support when the project is isolated from the rest of the distribution system. Phase 2 will originate at the Training and Operating Centre and terminate at Major Mackenzie Drive.

The Ministry has reviewed the information provided relative to its current understanding of the interests of First Nation and Métis communities in the area and has determined that it may have the potential to affect First Nation and Métis communities who hold or claim Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982.

As you are aware, the Government of Ontario (the "Crown") has a constitutional duty to consult and accommodate First Nation and Métis communities when Crown project approvals may lead to an appreciable adverse impact on established or asserted Aboriginal or treaty rights. While the legal duty to consult falls on the Crown, the Crown may delegate the day-to-day, procedural aspects of consultation to project proponents. The Ministry of the Energy, Northern Development and Mines is delegating the procedural aspects of consultation to Enbridge through this letter.

Based on the Crown's preliminary assessment of First Nation and Métis community rights and project impacts, the following Aboriginal communities should be consulted on the basis that they have or may have constitutionally protected Aboriginal or treaty rights that may be adversely affected by the Project:

Community	**Mailing Address**
Alderville First Nation	11696 Line Road 2 Roseneath, ON K0K 2X0
Curve Lake First Nation	22 Winookeedaa Road Curve Lake, ON K0L1R0
Hiawatha First Nation	123 Paudash Street Hiawatha, ON K9J 0E6
Huron Wendat First Nation *	255, place Chef Michel Laveau Wendake, QC G0A 4V0
Mississaugas of the Credit First Nation	2789 Mississauga Road R.R. #6 Hagersville, ON N0A 1H0
Mississaugas of Scugog Island First Nation	Administration Building 22521 Island Road Port Perry, ON L9L 1B6

Note: * interests are specific to archeological resources

This rights-based consultation list is based on information that is subject to change. First Nation and Métis communities may make new rights assertions at any time, and other developments (e.g. the discovery of Aboriginal archaeological sites) can occur that may require additional First Nation and/or Métis communities to be notified and/or consulted. If you become aware of potential rights impacts on communities that are not listed above at any stage of the consultation and approval process, kindly bring this to the attention of the Ministry with any supporting information regarding the claim. The Ministry will then assess whether it is necessary to include the community on the rights-based consultation list above.

It is the Ministry's expectation that Enbridge will communicate directly with the communities listed above, and that Enbridge will:

- Notify the communities that Enbridge has been delegated the procedural aspects of consultation by the Ministry of Energy, Northern Development and Mines on behalf of Ontario.
- Notify the communities that they may contact the Crown directly should they have any questions or concerns.
- Provide the communities with the following contact information should they wish to communicate directly with the Ministry:

  Raina Crasto
  Policy Advisor, Indigenous Energy Policy
  Ministry of Energy, Northern Development and Mines
  416-326-4571 / Raina.crasto@ontario.ca

- Please copy the Ministry contact when communicating the above information.

The Ministry relies on consultation conducted by proponents when it assesses the Crown's obligations and directs proponents during the regulatory process. Enbridge's responsibilities for procedural aspects of consultation include:

- Providing the Indigenous communities with timely notice of the project for the purposes of considering possible impacts on their Aboriginal and/or treaty rights;

- In that notice, clearly stating that Enbridge has been delegated the procedural aspects of consultation by the Ministry of Energy, Northern Development and Mines on behalf of Ontario for the project.

- Providing Indigenous communities with information about the project including anticipated impacts, and information on project timelines;

- Following up with the Indigenous communities to ensure they have received project information and that they are aware of the opportunity to express comments and concerns about the project;

- Explaining the regulatory and approval processes that apply to the project;

- Gathering information about how the project may adversely impact the relevant Aboriginal and/or treaty rights (for example, hunting, fishing) or sites of cultural significance (for example, burial grounds, archaeological sites);

- Considering the comments and concerns raised by Indigenous communities and providing responses;

- Where appropriate, discussing accommodation, including mitigation or other measures to address potential adverse impacts on Aboriginal and/or treaty rights;

- Where appropriate, developing and discussing with the Crown appropriate accommodation measures;
- Taking reasonable steps to foster positive relationships with the Indigenous communities;
- Bearing the reasonable costs associated with these procedural aspects of consultation; and
- Maintaining records of activities in relation to carrying out the delegated procedural aspects of consultation and providing information to the Ministry.

If you have any questions about this letter or require any additional information, please contact Raina Crasto at 416-326-4571 or Raina.crasto@ontario.ca

Sincerely,

[redacted]

A/Manager
Indigenous Energy Policy

C: Ontario Pipeline Coordinating Committee (OPCC)

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Curve Lake's Response to Enbridge Gas Inc. Low-Carbon Energy Project City of Markham, Ontario.

1 message

[redacted] <[redacted]@enbridge.com> Thu, May 2, 2019 at 3:17 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted] [mailto:[redacted]@curvelake.ca]
Sent: Wednesday, March 20, 2019 3:43 PM
To: [redacted]
Cc: [redacted]
Subject: [External] Curve Lake's Response to Enbridge Gas Inc. Low-Carbon Energy Project City of Markham, Ontario.

Aaniin [redacted]

Please find attached a letter from Curve Lake First Nation in regard to Enbridge Gas Inc. Low-Carbon Energy Project City of Markham, Ontario. A hard copy has also been sent.

Miigwech,

[redacted]

[redacted]
Lands and Resources Consultation Liaison
Curve Lake First Nation
Government Services Building
22 Winookeeda Street, Curve Lake, ON K0L 1R0
P: 705.657.8045 ext 222 F: 705.657.8708
W: www.curvelakefirstnation.ca
E: [redacted]@curvelake.ca

Enbridge Gas Inc. Low-Carbon Energy Project City of Markham, Ontario..pdf
207K

Government Services
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www.curvelakefirstnation.ca

March 20, 2019

[redacted]
51 Breithaupt Street, Suite 200
Kitchener Ontario N2H 5G5

Dear [redacted]

RE: Enbridge Gas Inc. Low-Carbon Energy Project City of Markham, Ontario.

I would like to acknowledge receipt of your correspondence, which was received on 3/8/2019 the above noted project.

As you may be aware, the area in which your project is proposed is situated within the Traditional Territory of Curve Lake First Nation. Our First Nation's Territory is incorporated within the Williams Treaties Territory and was the subject of a claim under Canada's Specific Claims Policy, which has now been settled. All 7 First Nations within the Williams Treaties have had their harvesting rights legally re-affirmed and recognized through this settlement. We strongly suggest that you provide Karry Sandy-Mackenzie, Williams Treaty First Nation Claims Coordinator, 8 Creswick Court, Barrie, ON L4M 2S7, with a copy of your proposal as your obligation to consult may also extend to the other First Nations of the Williams Treaties.

Curve Lake First Nation is requiring a File Fee for this project in the amount of $250.00 as outlined in the Consultation and Accommodation Standards. This Fee includes project updates as well as review of standard material and project overviews. Depending on the amount of documents to be reviewed by the Consultation Department, additional fees may apply. **Please make this payment to Curve Lake First Nation Consultation Department and please indicate the project name or number on the cheque.**

If you do not have a copy of Curve Lake First Nation's Consultation and Accommodation Standards they are available at https://www.curvelakefirstnation.ca/services-departments/lands-rights-resources/consultation/. Hard copies are available upon request.

Based on the information that you have provided us with respect to Enbridge Gas Inc. Low-Carbon Energy Project City of Markham, Ontario. Curve Lake First Nation requires a Special Consultation Framework for this project. Information on this Framework can be found on page 9 of our Consultation and Accommodation Standards.

In order to assist us in providing you with timely input, it would be appreciated if you could provide a summary statement indicating how the project will address the following areas that are of concern to our First Nation within our Traditional and Treaty Territory: possible

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environmental impact to our drinking water; endangerment to fish and wild game; impact on Aboriginal heritage and cultural values; and to endangered species; lands; savannas etc.

After the information is reviewed it is expected that you or a representative will be in contacts to make arrangements to discuss this matter in more detail and possibly set up a date and time to meet with Curve Lake First Nation in person.

Although we have not conducted exhaustive research nor have we the resources to do so, there may be the presence of burial or archaeological sites in your proposed area. Please note, that we have particular concern for the remains of our ancestors. Should excavation unearth bones, remains, or other such evidence of a native burial site or any other archaeological findings, we must be notified without delay. In the case of a burial site, Council reminds you of your obligations under the *Cemeteries Act* to notify the nearest First Nation Government or other community of Aboriginal people which is willing to act as a representative and whose members have a close cultural affinity to the interred person. As I am sure you are aware, the regulations further state that the representative is needed before the remains and associated artifacts can be removed. Should such a find occur, we request that you contact our First Nation immediately.

Furthermore, Curve Lake First Nation also has available, trained Cultural Heritage Liaisons who are able to actively participate in the archaeological assessment process as a member of a field crew, the cost of which will be borne by the proponent. Curve Lake First Nation expects engagement at Stage 1 of an archaeological assessment, so that we may include Indigenous Knowledge of the land in the process. We insist that at least one of our Cultural Heritage Liaisons be involved in any Stage 2-4 assessments, including test pitting, and/or pedestrian surveys to full excavation.

Although we may not always have representation at all stakeholders meetings, it is our wish to be kept appraised throughout all phases of this project.

Should you have further questions or if you wish to hire a liaison for a project, please feel free to contact Julie Kapyrka or Kaitlin Hill, Lands and Resources Consultation Liaisons, at 705-657-8045 or via email at JulieK@Curvelake.ca and KaitlinH@Curvelake.ca .

Yours sincerely,

Chief Phyllis Williams
Curve Lake First Nation

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Follow Up

1 message

[redacted] <[redacted]@enbridge.com> Thu, May 2, 2019 at 3:16 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted] [mailto:[redacted]@curvelake.ca]
Sent: Wednesday, April 10, 2019 3:36 PM
To: [redacted]
Subject: [External] RE: Follow Up

Hi [redacted]

Yes! Great to speak with you too!

See you soon!

Dr. [redacted]
Lands and Resources Consultation Liaison
Curve Lake First Nation
Government Services Building
22 Winookeeda Street, Curve Lake, ON K0L 1R0
P: 705.657.8045 ext 239 F: 705.657.8708
W: www.curvelakefirstnation.ca
E: [redacted]@curvelake.ca

From: [redacted] [mailto:[redacted]@enbridge.com]
Sent: April-10-19 12:00 PM
To: [redacted] <[redacted]@curvelake.ca>
Subject: Follow Up

Hi [redacted]

It was great connecting with you over the phone yesterday. I'm looking forward to catching up in person on April 26th!

Have a great day,

[redacted]

[redacted]
Sr. Advisor, Community Engagement, Eastern Region

Public Affairs and Communications

ENBRIDGE PIPELINES INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

Integrity. Safety. Respect.

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Invoice for filing fee - Low-Carbon Energy Project

1 message

[redacted] <[redacted]@enbridge.com> Thu, May 2, 2019 at 3:17 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]
Sent: Thursday, May 02, 2019 3:16 PM
To: [redacted]
Cc: [redacted]
Subject: RE: Invoice for filing fee - Low-Carbon Energy Project

Thanks for this, [redacted]

I have sent the invoice for processing. Thank you so much for taking time out of your busy day to meet with me. It was great to finally meet you in person. I always learn so much from you! By all means, send me the second invoice when you have completed your review of the archaeological report.

On a separate note, I checked in with our integrity dig team regarding any digs taking place near Curve Lake First Nation and they have informed me that they have one starting as early as May 6, 2019. Please let me know if this timing works with you and your team when you have a moment and we can choose a date and time that works on your end.

Best regards!

[redacted]

Sonia Fazari
Sr. Advisor, Community Engagement, Eastern Region

Public Affairs and Communications

ENBRIDGE PIPELINES INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

From: [redacted] [mailto:[redacted]@curvelake.ca]
Sent: Monday, April 29, 2019 9:07 AM
To: [redacted]
Cc: [redacted]
Subject: [External] Invoice for filing fee - Low-Carbon Energy Project

Aaniin [redacted]

So great to catch up with you last week. Thank you for an excellent meeting!

Please find attached: Filing fee for the Low-Carbon Energy Project.

I will be sending another invoice for review and comments regarding the Archaeological Assessment – once I have completed that.

Miigwech and have a great day!

Best regards,

Dr. [redacted]
Lands and Resources Consultation Liaison
Curve Lake First Nation
Government Services Building
22 Winookeeda Street, Curve Lake, ON K0L 1R0
P: 705.657.8045 ext 239 F: 705.657.8708
W: www.curvelakefirstnation.ca
E: [redacted]@curvelake.ca

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

1 message

[redacted] <[redacted]@enbridge.com> Wed, Jul 3, 2019 at 5:58 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]
Sent: Wednesday, July 03, 2019 5:54 PM
To: [redacted]@curvelake.ca
Subject: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

Hi [redacted]

How are you? I hope you are doing well. I just wanted to provide you with an update regarding the proposed Power to Gas Project. We discussed this project awhile back. It's the one where we are planning to inject up to 2% of hydrogen into our natural gas system to help offset the energy we use with green energy.

I wanted to share with you the attached open house invitation, in both English and Mandarin, that was distributed to roughly 33,000 homes and businesses that live in the Project area (City of Markham). We'll also be running the invitation as an ad in the Markham Economist and Sun (July 4), and the Ming Pao (July 6). If you have any questions about the Project, or the Information Session, please don't hesitate to reach out to me. I realize the location of the information session is quite a drive from the community but if you are able / interested to attend on Tuesday, July 9, please let me know. It would be great to see you as always.

Talk soon!

[redacted]

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

July 2019 OpenHouse_v04.pdf
555K

You're Invited to an Information Session

Please join us for another information session about the proposed Low-Carbon Energy Project in Markham. Learn about hydrogen blending, why Enbridge Gas supports this technology, why it's good for our customers, and good for the environment.

Enbridge Gas is proposing a project to blend a small amount of hydrogen gas into our existing natural gas network, to reduce greenhouse gas emissions. Enbridge Gas operates a facility which converts electrical energy to hydrogen gas, which would be injected into the existing natural gas network if the project is approved.

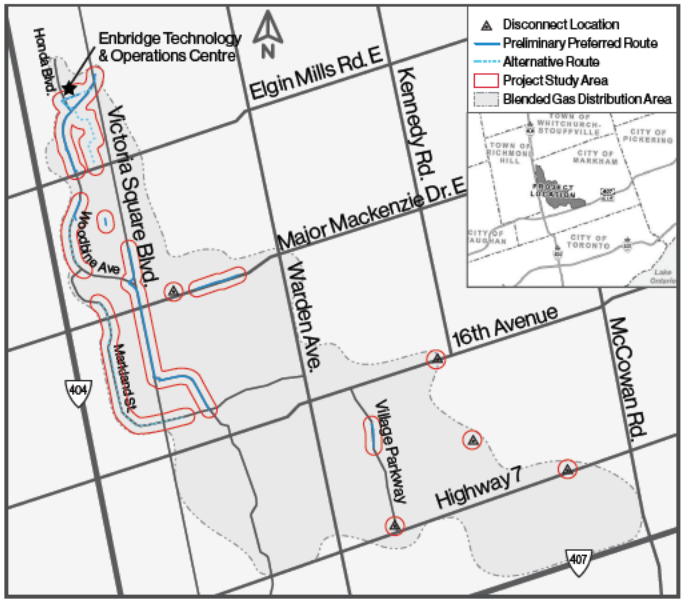
The blended gas would be distributed within the shaded area outlined on the map. As part of the project, Enbridge Gas would be installing approximately 1.3 km of pipe in phase one and approximately 5.5 km of pipe in phase two.

Hydrogen Blending Information Session

Date: Tuesday, July 9, 2019
Time: Drop in from 5-7 p.m.
Location: Enbridge Technology and Operations Centre
101 Honda Blvd, Markham, Ontario

For more information about the proposed project and hydrogen blending, please visit: **http://enbridgegas.com/LowCarbonEnergyProject**.

If you have any questions, please submit them to **LowCarbonEnergyEA@dillon.ca**.



Please visit us online:

enbridgegas.com **@enbridgegas**

If you have a natural gas emergency, please call: **1-866-763-5427**



ENBRIDGE
Life Takes Energy®

邀请您参加宣讲会

关于提案的万锦市低碳能源项目，我们将再次举办宣讲会，敬请参加。 了解氢气混合技术、为什么 Enbridge Gas 支持这种技术、为什么它对我们的顾客有好处、以及为什么它对环境有好处。

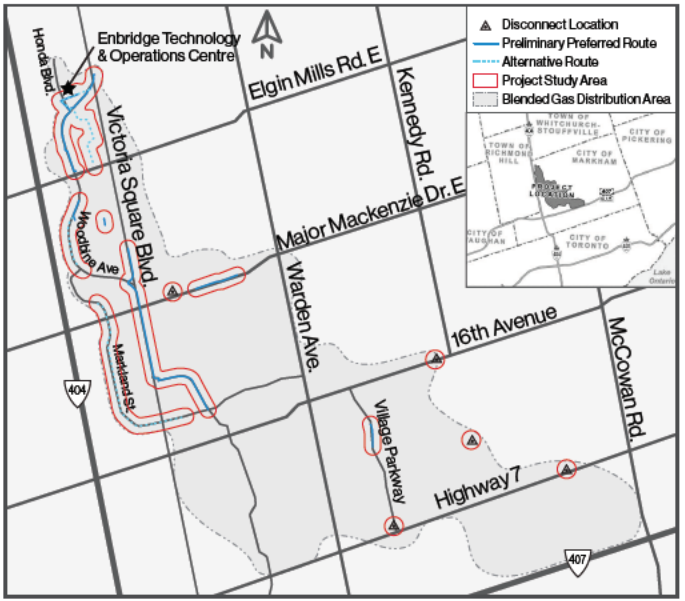
Enbridge Gas 提案了一个项目，将少量氢气混入我们的现有天然气管网，以减少温室气体排放。如果该项目得到批准，Enbridge Gas 有设施将电力转换为氢气，再将氢气注入现有天然气管网。

混合气体将在地图上所示区域内输配。作为该项目的一部分，Enbridge Gas 将在项目一期铺设约1.3公里的管道，项目二期铺设约5.5公里的管道。

氢气混合宣讲会

日期： 2019 年7月9日星期二
时间： 下午5点至7点间欢迎光临
地点： Enbridge Technology and Operations Centre
101 Honda Blvd, Markham, Ontario

请浏览 **http://enbridgegas.com/LowCarbonEnergyProject**，了解提案项目和氢气混合的更多信息。如果您有任何疑问，请将您的疑问提交至 **LowCarbonEnergyEA@dillon.ca**。



请访问我们的社交媒体：

enbridgegas.com **@enbridgegas**

如果您有天然气紧急情况，请致电 **1-866-763-5427**



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Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

1 message

[redacted] <[redacted]@enbridge.com> Fri, Jul 5, 2019 at 10:01 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]
Sent: Friday, July 05, 2019 10:00 AM
To: [redacted]
Cc: [redacted]
Subject: RE: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

Aaniin [redacted]

I know you are swamped and of course, please do send me an invoice for your time to review the archaeological report. I will also give you advance notice of when we plan to start the Stage 2 field work. I did submitted the invoice (with the filing fee) to accounting a few months ago.

If there is anything you need just call me! Always so good to chat with you.

Have a great weekend and keep cool.

Best regards,

[redacted]

From: [redacted] [mailto:[redacted]@curvelake.ca]
Sent: [redacted] July 04, 2019 2:30 PM
To: [redacted]
Cc: [redacted]
Subject: [External] RE: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

EXTERNAL: PLEASE PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open

attachments unless you recognize the sender or know the content is safe.

Aaniin [redacted]

Great to hear from you!

I remember this project of course because I am still trying to find time to review the archaeological report which will have to undergo some edits. Is there still time for me to do that and invoice you?

And speaking of invoices – did you receive the invoice for the $250 filing fee for this project? I sent it after our last meeting.

Unfortunately we probably will not make it out to the meetings – funding issues with travel – thanks to Dougie.

Best regards,

Dr. [redacted]
Lands and Resources Consultation Liaison
Curve Lake First Nation
Government Services Building
22 Winookeeda Street, Curve Lake, ON K0L 1R0
P: 705.657.8045 ext 239 F: 705.657.8708
W: www.curvelakefirstnation.ca
E: [redacted]@curvelake.ca

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Arch assessment for Low-carbon energy project - Review and comments

1 message

[redacted] <[redacted]@enbridge.com> Fri, Jul 26, 2019 at 9:32 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]
Sent: Friday, July 26, 2019 9:30 AM
To: [redacted]
Cc: [redacted]
Subject: RE: Arch assessment for Low-carbon energy project - Review and comments

Thanks for the great information Julie! Thank you so much! I will pass this to the lead archaeologist on this project. I have also processed the invoice.

Have a great weekend!

[redacted]

From: [redacted] [mailto:[redacted]@curvelake.ca]
Sent: Thursday, July 25, 2019 4:29 PM
To: [redacted]
Cc: [redacted]
Subject: [External] Arch assessment for Low-carbon energy project - Review and comments

EXTERNAL: PLEASE PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe.

Aaniin [redacted]

Sorry for the late reply but you know how it is in most First Nations Consultation Offices – no capacity and inundated with requests ☺ I finally was able to piece together some time to get this done!

Here are my comments of the review of the assessment:

Page 15: Table 3: Cultural Chronology for First Peoples Settlement in the Markham

-this is a chart delineating archaeological periods and time ranges. In this chart the terms: “Early Iroquoian, Middle Iroquoian, Late Iroquoian” are used to describe time horizons in the Late Woodland Period. We would ask that these terms be removed. Most archaeologists are moving away from terminology that would indicate culture or ethnicity when describing periods of time. There is sometimes confusion, and although these terms are used to describe time periods, they often are used interchangeably to describe people and cultures. This becomes more confusing when the site is an Anishinaabe site and terms like “Early Iroquoian” are used to characterize the time period. Most archaeologists are now characterizing the Late Woodland time periods by the following: “Early Late Woodland, Middle Late Woodland, and Late Late Woodland.” Can you please have the archaeologist remove this terminology.

Page 16: The Heading: “*Late Woodland – Iroquoian Period*” – please remove the terms: “Iroquoian Period.” This suggests that there were only Iroquoian people around during this time and that simply is not true.

Page 17: Under the heading: *Recent Historic Period* (the last few sentences)

“At the same time, Algonquian-speaking populations were utilizing the watershed for hunting and trapping. By the 17th century, the Seneca no longer inhabited the Lake Ontario shores and the Algonquin-speaking Mississaugas began moving southward into the area. It was the Mississauga who had settled the area by the time the British arrived in the late 18th century.”

-this has to be edited.

-Rather than Algonquian-speaking populations, please use “Anishinaabek populations.” And of course they were using the watershed for hunting and trapping because they had been doing this in the area for thousands of years already!

- Algonquin-speaking Mississaugas – The Mississauga people do not speak Algonquin! Rather they speak Anishinaabemowin (or Ojibwa) which is in the Algonquian language family. Algonquin – is a nation of distinct people in the Ottawa Valley area and they spoke Algonquin which is also in the Algonquian language family.

-Please remove the sentence regarding the Mississauga: “began moving southward into the area” – the Mississauga were along the area of the north shore of Lake Ontario for thousands of years. They worked with the Odawa to allow the Huron-Wendat to come into the area and grow corn. This was and is the traditional territory of the Mississauga peoples. During the years of warfare and disease (mid 1600s) the Mississauga literally “paddled away” and went north to their winter hunting grounds as well as to other Ojibwa communities and waited for the dust to settle. The Mississauga returned shortly afterwards (10-20 years). A correction needs to be made here – the Mississauga RETURNED to the area after a brief time away – and they returned to their homelands, they did not first enter the area then, they came back!

-The last sentence: “It was the Mississauga who had settled the area by the time the British arrived in the late 18th century.” Please remove or rework this sentence as it implies that the Mississauga were from somewhere else and “settled” the area. This is simply false. The Mississauga did not “settle” the area, rather this area was part of their homelands, as it was for thousands of years, they had always been here. Inferring that they are “settlers” is just insulting.

Page 17: *2.3.2 19th Century and Municipal Settlement*

-there is an absolute lack of inclusion here about the Treaties in the area that ALLOWED for settlement by Europeans. This area is within what was known as “the Gunshot Treaty” – to allow the British to move from Fort Frontenac to Fort York. The Gunshot Treaty was between the British and the Mississauga. This should be included in this part of the report. Also the 1923 Williams Treaties is not even mentioned! Again, this set of Treaties allowed for the settlement of the Markham area. Both of these Treaties are important aspects to the history of this area and need to be referenced in the historical context as presented in this archaeological report.

-The report states: “The British gained control of the region in 1759 and rapidly began preparing the region for settlement.” This begs the question: Gained control of the region how and from whom? – It was the Mississauga who were here and who entered into Treaty.

I have attached an oral history that was provided by a well-known and well-respected Mississauga Elder. We ask that this be included directly in the report as part of the Background Historical Context Section and not an appendix.

Also we would like the following acknowledgement to appear somewhere in the beginning of the report:

This site (area), in the City of Markham, is located in the ancestral territory of the Michi Saagiig and Chippewa nations. This site is also located in the Treaty territory of the Williams Treaties First Nations that include: Curve Lake, Hiawatha, Scugog Island, Alderville, Rama, Beausoleil and Georgina Island First Nations.

I have also attached an invoice for the review and comments.

Miigwech Sonia! I hope you are enjoying your new position ☺

Have a great day – and please let me know that you have received this.

Best regards,

Dr. [redacted]

Lands and Resources Consultation Liaison

Curve Lake First Nation

Government Services Building

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W: www.curvelakefirstnation.ca

E: [redacted]@curvelake.ca

Michi Saagiig Historical/Background context:

The traditional homelands of the Michi Saagiig (Mississauga Anishinaabeg) encompass a vast area of what is now known as southern Ontario. The Michi Saagiig are known as "the people of the big river mouths" and were also known as the "Salmon People" who occupied and fished the north shore of Lake Ontario where the various tributaries emptied into the lake. Their territories extended north into and beyond the Kawarthas as winter hunting grounds on which they would break off into smaller social groups for the season, hunting and trapping on these lands, then returning to the lakeshore in spring for the summer months.

The Michi Saagiig were a highly mobile people, travelling vast distances to procure subsistence for their people. They were also known as the "Peacekeepers" among Indigenous nations. The Michi Saagiig homelands were located directly between two very powerful Confederacies: The Three Fires Confederacy to the north and the Haudenosaunee Confederacy to the south. The Michi Saagiig were the negotiators, the messengers, the diplomats, and they successfully mediated peace throughout this area of Ontario for countless generations.

Michi Saagiig oral histories speak to their people being in this area of Ontario for thousands of years. These stories recount the "Old Ones" who spoke an ancient Algonquian dialect. The histories explain that the current Ojibwa phonology is the 5th transformation of this language, demonstrating a linguistic connection that spans back into deep time. The Michi Saagiig of today are the descendants of the ancient peoples who lived in Ontario during the Archaic and Paleo-Indian periods. They are the original inhabitants of southern Ontario, and they are still here today.

The traditional territories of the Michi Saagiig span from Gananoque in the east, all along the north shore of Lake Ontario, west to the north shore of Lake Erie at Long Point. The territory spreads as far north as the tributaries that flow into these lakes, from Bancroft and north of the Haliburton highlands. This also includes all the tributaries that flow from the height of land north of Toronto like the Oak Ridges Moraine, and all of the rivers that flow into Lake Ontario (the Rideau, the Salmon, the Ganaraska, the Moira, the Trent, the Don, the Rouge, the Etobicoke, the Humber, and the Credit, as well as Wilmot and 16 Mile Creeks) through Burlington Bay and the Niagara region including the Welland and Niagara Rivers, and beyond. The western side of the Michi Saagiig Nation was located around the Grand River which was used as a portage route as the Niagara portage was too dangerous. The Michi Saagiig would portage from present-day Burlington to the Grand River and travel south to the open water on Lake Erie.

Michi Saagiig oral histories also speak to the occurrence of people coming into their territories sometime between 500-1000 A.D. seeking to establish villages and a corn growing economy – these newcomers included peoples that would later be known as the Huron-Wendat, Neutral, Petun/Tobacco Nations. The Michi Saagiig made Treaties with these newcomers and granted them permission to stay with the understanding that they were visitors in these lands. Wampum was made to record these contracts, ceremonies would have bound each nation to their respective responsibilities within the political relationship, and these contracts would have been renewed annually (see Gitiga Migizi and Kapyrka 2015). These visitors were extremely successful as their corn economy grew as well as their populations. However, it was understood by all nations involved that this area of Ontario were the homeland territories of the Michi Saagiig.

The Odawa Nation worked with the Michi Saagiig to meet with the Huron-Wendat, the Petun, and Neutral Nations to continue the amicable political and economic relationship that existed – a symbiotic relationship that was mainly policed and enforced by the Odawa people.

Problems arose for the Michi Saagiig in the 1600s when the European way of life was introduced into southern Ontario. Also, around the same time, the Haudenosaunee were given firearms by the colonial governments in New York and Albany which ultimately made an expansion possible for them into Michi Saagiig territories. There began skirmishes with the various nations living in Ontario at the time. The Haudenosaunee engaged in fighting with the Huron-Wendat and between that and the onslaught of European diseases, the Iroquoian speaking peoples in Ontario were decimated.

The onset of colonial settlement and missionary involvement severely disrupted the original relationships between these Indigenous nations. Disease and warfare had a devastating impact upon the Indigenous peoples of Ontario, especially the large sedentary villages, which mostly included Iroquoian speaking peoples. The Michi Saagiig were largely able to avoid the devastation caused by these processes by retreating to their wintering grounds to the north, essentially waiting for the smoke to clear.

Michi Saagiig Elder Gitiga Migizi (2017) recounts:
"We weren't affected as much as the larger villages because we learned to paddle away for several years until everything settled down. And we came back and tried to bury the bones of the Huron but it was overwhelming, it was all over, there were bones all over – that is our story.

There is a misnomer here, that this area of Ontario is not our traditional territory and that we came in here after the Huron-Wendat left or were defeated, but that is not true. That is a big misconception of our history that needs to be corrected. We are the traditional people, we are the ones that signed treaties with the Crown. We are recognized as the ones who signed these treaties and we are the ones to be dealt with officially in any matters concerning territory in southern Ontario.

We had peacemakers go to the Haudenosaunee and live amongst them in order to change their ways. We had also diplomatically dealt with some of the strong chiefs to the north and tried to make peace as much as possible. So we are very important in terms of keeping the balance of relationships in harmony.

Some of the old leaders recognized that it became increasingly difficult to keep the peace after the Europeans introduced guns. But we still continued to meet, and we still continued to have some wampum, which doesn't mean we negated our territory or gave up our territory – we did not do that. We still consider ourselves a sovereign nation despite legal challenges against that. We still view ourselves as a nation and the government must negotiate from that basis."

Often times, southern Ontario is described as being "vacant" after the dispersal of the Huron-Wendat peoples in 1649 (who fled east to Quebec and south to the United States). This is misleading as these territories remained the homelands of the Michi Saagiig Nation.

The Michi Saagiig participated in eighteen treaties from 1781 to 1923 to allow the growing number of European settlers to establish in Ontario. Pressures from increased settlement forced the Michi Saagiig to slowly move into small family groups around the present day communities: Curve Lake First Nation, Hiawatha First Nation, Alderville First Nation, Scugog Island First Nation, New Credit First Nation, and Mississauga First Nation.

The Michi Saagiig have been in Ontario for thousands of years, and they remain here to this day.

This historical context was prepared by Gitiga Migizi, a respected Elder and Knowledge Keeper of the Michi Saagiig Nation.

Publication reference:

[redacted] and [redacted]

2015 Before, During, and After: Mississauga Presence in the Kawarthas. In *Peterborough Archaeology,* Dirk Verhulst, editor, pp.127-136. Peterborough, Ontario: Peterborough Chapter of the Ontario Archaeological Society.

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Power to Gas Stage 2 Surveys

1 message

[redacted] <[redacted]@enbridge.com> Thu, Oct 3, 2019 at 12:56 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

-----Original Message-----
From: [redacted] <[redacted]@curvelake.ca>
Sent: Thursday, August 15, 2019 6:55 PM
To: [redacted] <[redacted].Fazari@enbridge.com>
Cc: [redacted] <[redacted]@curvelake.ca>
Subject: [External] RE: Power to Gas Stage 2 Surveys

EXTERNAL: PLEASE PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe.

Aaniin [redacted]

Great to hear from you! And yes I have quite enjoyed this summer - salt water pool and all :) Hope yours have been as glorious!

And yes, we will have a liaison! Funny you should ask - Kaitlin and I are currently facilitating a 3.5 week training program for archaeological/cultural heritage liaisons! We are spending our days on a pontoon boat and island in Rice Lake. Absolutely beautiful.

In any case - the second week of September will be perfect! Maybe even one of our new grads.

Let me know the details when you have them.

Miigwech.

All the best,

Dr. [redacted]
Lands and Resources Consultation Liaison
Curve Lake First Nation
Government Services Building
22 Winookeeda Street, Curve Lake, ON K0L 1R0

P: 705.657.8045 ext 239 F: 705.657.8708
W: www.curvelakefirstnation.ca
E: [redacted]@curvelake.ca

-----Original Message-----
From: [redacted] [mailto:[redacted]@enbridge.com]
Sent: August-15-19 6:11 AM
To: [redacted] <[redacted]@curvelake.ca>; Consultation Clerk <ConsultationClerk@curvelake.ca>
Subject: Power to Gas Stage 2 Surveys

>> Hi [redacted]
>>
>> I hope you are doing well and enjoying the last bit of summer remaining. As a follow up to the Enbridge Power to Gas Project, I would like to provide you with some advance notice regarding the Stage 2 Archaeological assessment field work. Enbridge is planning to begin the field work sometime in the first half of September pending weather and successfully securing locates.
>>
>> I will be in touch a week prior to commencing the field work to confirm the details but in the meantime, can you please let me know if you are planning to send a Curve Lake First Nation monitor ? I think it would be great to have a community member participate in the field work if possible.
>>
>> I look forward to hearing back from you at your earliest convenience.
>>
>> Miigwech,
>
>> [redacted]
>> Sr. Advisor, Municipal & Indigenous Affairs Enbridge Gas Inc

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Power to Gas Stage 2 Surveys

1 message

[redacted] <[redacted]@enbridge.com> Thu, Oct 3, 2019 at 1:15 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

-----Original Message-----
From: [redacted] <[redacted]@enbridge.com>
Sent: Thursday, October 3, 2019 1:13 PM
To: [redacted] <[redacted]@curvelake.ca>
Cc: [redacted] <[redacted]@curvelake.ca>
Subject: RE: Power to Gas Stage 2 Surveys

Aaniin [redacted]

I hope you are well! I can't believe Fall is here. It's one of my favourite time of the year but I just can't seem to get used to the morning chills when I leave the house!.

I wanted to provide you with some advance notice regarding the Power to Gas Project that's been recently brought to my attention by the project team. The project team has informed me that that Stage 2 archaeological assessment required for the Power to Gas Project is specific to phase 2 of the project that (as of recently) is now being deferred to next year. Based on the results of the Stage 1 AA that was already completed for both phases (one and two) of the project, a Stage 2 AA was not recommended for Phase 1 of the project but was recommended for Phase 2. Once we have project timelines established for phase 2 of the project, which will involve stage 2 AA work, I will be in touch with you again so we can ensure we have a representative from Curve Lake First Nation participate in the Stage 2 assessment.

I have also attached a copy of the Environmental Report for the Enbridge Low-Carbon Energy Project (also knows as the Power to Gas Project) - not sure why the project name changed??. As always, please don't hesitate to reach out with any questions you may have. Always great to connect with you, Julie!

https://www.enbridgegas.com/-/media/Extranet-Pages/Projects-tab-links/Low-Carbon-Energy-Project/EGI_LCEP_Redacted_Secured_13-May-2019.ashx?la=en&hash=DBBBCDF7CF53E778FD5627D1858AA00610ED7DD1

Miigwech,
[redacted]

p.s. on a personal note, let me know when you are planning to be in TO at any point this year/next year. I'd love to grad dinner or coffee and stay in touch!

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road
North York, ON M2J 1P8

enbridge.com
Integrity. Safety. Respect.

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

LCEP Notice of Project Change and Environmental Report Amendment

[redacted] <[redacted]@enbridge.com> Fri, Feb 28, 2020 at 7:20 AM
To: [redacted] <[redacted]@curvelake.ca>
Cc: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

Good Morning Dr. [redacted]

Please find the Notice of Project Change and Environmental Report Amendment for Enbridge Gas' proposed *Low-Carbon Energy Project (2019)*, attached.

Change Summary

Enbridge has made changes to the scope of the *Low-Carbon Energy Project* in Markham, Ontario that require additional study and review. Dillon is preparing an Amendment to the Environmental Report (the Amendment) in consideration of Enbridge's proposed changes to the Project. These proposed Project changes include: (1) the selection of the Phase 1 Alternative Route as the Preferred Route; and, (2) the addition of three small facilities on Enbridge-owned property at 101 Honda Boulevard into the Environmental Report scope.

We are seeking your community's feedback or shared knowledge by **Friday, March 27th, 2020.**

Should you have any questions or concerns please feel free to contact me directly. We look forward to engaging with your community to ensure your interests are being considered and represented in this project change process.

Meegwetch/Wela'lin,

[redacted]

Melanie Book
Senior Advisor, Community & Indigenous Engagement, Eastern Region

Conseillère principale, engagement communautaire et autochtone, région de l'est

Public Affairs, Communications & Sustainability

Affaires publiques, communications et développement durable

Enbridge Pipelines Inc.
Cell: 613-355-6561

Email: melanie.book@enbridge.com

400 Coventry Rd, Ottawa, ON K1K 2C7

3 attachments

EGI_LCEP_NoticeProjectChange_Final_2020Feb20.pdf
298K

EGI_LCEP_ER_Amendment_Draft_2020Feb20.pdf
5137K

2020 02 27- LCEP Change Notice- Curve Lake v01.dotx.pdf
96K

Enbridge
400 Coventry Rd
Ottawa, ON K1K 2C7
Canada

February 28, 2020

Re: Notice of Project Change and Draft Environmental Report Amendment- Low Carbon Energy Project (LCEP)

Emily Whetung-MacInnes
Chief, Curve Lake First Nation
22 Winookeedaa Road
Curve Lake, ON
K0L1R0

Dear Chief Whetung-MacInnes,

I am writing to advise you of a project change and draft Environmental Report Amendment on the proposed 2019 Low Carbon Energy Project (LCEP). Enbridge Gas Inc. (Enbridge) retained Dillon Consulting Limited (Dillon) to undertake an environmental and socio-economic effects assessment and amended report (Environmental Report) for the proposed Low Carbon Energy Project (the Project).

Enbridge filed a Leave-to-Construct (LTC) application with the Ontario Energy Board (OEB) on December 20, 2019. The application included the Environmental Report (completed in May 2019), as well as two Addendums. Addendum #1 was completed in September 2019 and addressed comments from the Toronto and Region Conservation Authority. Addendum #2 was completed in December 2019 and provided updated Project mapping depicting only Phase 1 of the Project, as Phase 2 was removed from the Project scope.

Since the completion of the Environmental Report and the Addendums, Enbridge has made changes to the scope of the Project that require additional study and review. As such, Dillon has prepared an Amendment to the Environmental Report (draft version enclosed), which documents the results of Dillon's review of Enbridge's proposed changes to the Project. These proposed Project changes include: (1) the selection of the Phase 1 Alternative Route as the new Preferred Route; and, (2) the addition of three small facilities on Enbridge owned property into the Environmental Report scope.

Curve Lake First Nation is invited to provide comments in relation to this Project change. Specifically, Enbridge and Dillion are seeking information about any adverse impacts that the proposed project change may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts. Please send any comments to the attention of the undersigned, or by email to LowCarbonEnergyEA@dillon.ca at your earliest convenience. We would appreciate your shared knowledge or comments for consideration regarding this Project change by March 27, 2020.

If you have questions or concerns regarding the proposed Project change, please do not hesitate to contact me at any time. I appreciate your attention to this matter and look forward to our ongoing collaboration on this project.

Sincerely,



Senior Advisor, Community & Indigenous Engagement, Eastern Region
Conseillère principale, engagement communautaire et autochtone, région de l'est
Public Affairs and Communications
400 Coventry Rd, Ottawa, ON K1K 2C7
Cell: 613-355-6561
Melanie.book@enbridge.com

Enclosures- Notice of Project Change, Amendment to the Environmental Report

PROPOSED ENBRIDGE LOW-CARBON ENERGY PROJECT

NOTICE OF PROJECT CHANGE

CITY OF MARKHAM, ONTARIO

ENBRIDGE GAS INC.

Last year, Enbridge Gas Inc. (Enbridge) retained Dillon Consulting Limited (Dillon) to undertake a route selection and environmental and socio-economic impact study and report (Environmental Report) for the proposed Low-Carbon Energy Project (the Project). The Environmental Report was completed according to the Ontario Energy Board (OEB) Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016). Following completion of the Environmental Report, Enbridge provided additional information regarding the Project in two Addendums. Addendum #1 was completed in September 2019 and addressed comments from the Toronto and Region Conservation Authority. Addendum #2 was completed in December 2019 and provided updated Project mapping depicting only Phase 1 of the Project, as Phase 2 was removed from the Project scope. Enbridge filed a Leave-to-Construct (LTC) application with the OEB on December 20, 2019.

Since the completion of the Environmental Report and the Addendums, Enbridge has made changes to the scope of the Project that require additional study and review. Dillon is preparing an Amendment to the Environmental Report (the Amendment) in consideration of Enbridge's proposed changes to the Project. These proposed Project changes include: (1) the selection of the Phase 1 Alternative Route as the Preferred Route; and, (2) the addition of three small facilities on Enbridge-owned property at 101 Honda Boulevard into the Environmental Report scope. The objective of the Amendment is to determine if there are any additional potential environmental or socio-economic impacts as a result of the proposed changes that were not captured in the assessment already completed in the Environmental Report.

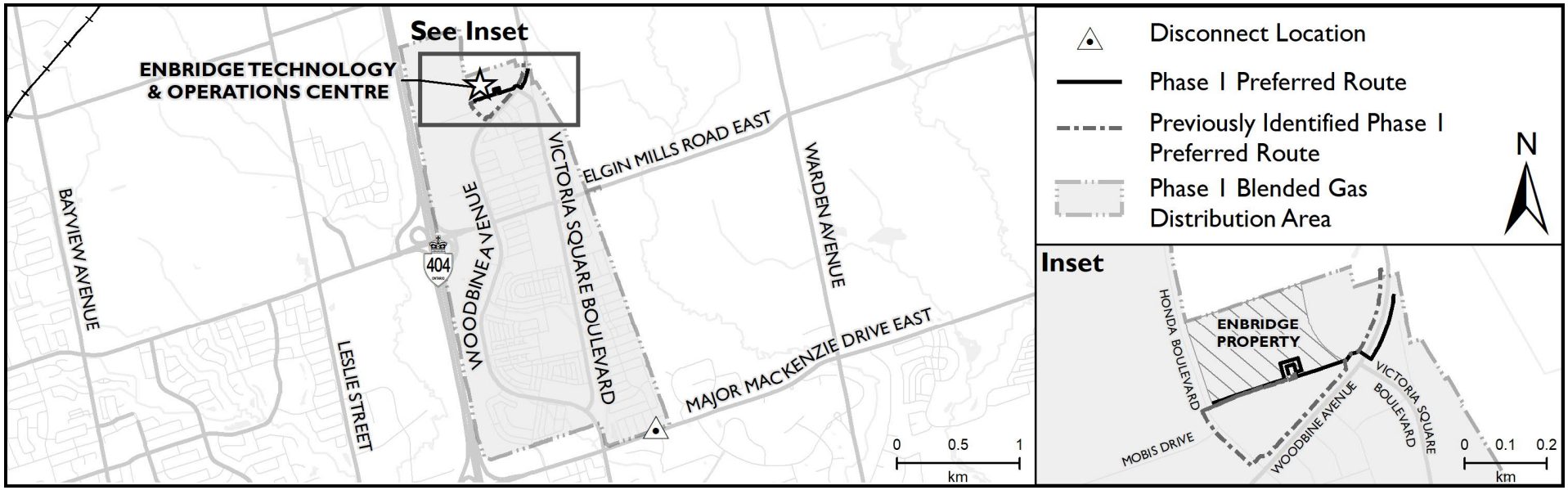
The Amendment to the Environmental Report is planned to be completed by March 31, 2020, after which Enbridge will file the Amendment with the OEB. The OEB's review and approval is required before the Project can proceed. If approved, construction of the Project is currently anticipated to begin by January 2021, at the earliest.

Stakeholder consultation and Indigenous engagement continue to be key components of the Project. We are interested in hearing from you regarding issues/concerns that you may have in relation to the proposed changes to this Project. Please provide feedback to the Project email at LowCarbonEnergyEA@dillon.ca or by contacting one of the individuals listed in this Notice by March 22, 2020.

Tanya Turk
Environmental Advisor
Enbridge Gas Inc.
101 Honda Boulevard
Markham, ON L6C 0M6
(416) 495-3103

Tristan Lefler
Environmental Assessment
Project Manager
Dillon Consulting Limited
51 Breithaupt Street, Suite 200
Kitchener, ON N2H 5G5
(519) 571-9833
LowCarbonEnergyEA@dillon.ca

Project website:
https://www.enbridgegas.com/about-us.
Click on the "Projects" tab and select "Low-Carbon Energy Project"



Enbridge Gas Inc.
Low-Carbon Energy Project
Environmental Report Amendment

Prepared for:

Enbridge Gas Inc.
101 Honda Blvd.
Markham, Ontario
L6C 0M6

Prepared by:

Dillon Consulting Limited
235 Yorkland Blvd., Suite 800
Toronto, Ontario
M2J 4Y8

February 2020



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A Consultation Update – Summary and Logs

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LIST OF ACRONYMS AND ABBREVIATIONS

Dillon	Dillon Consulting Limited
ECA	Environmental Compliance Approval
Enbridge	Enbridge Gas Inc.
HP	high pressure
IP	intermediate pressure
km	kilometre(s)
LTC	Leave-to-Construct
m	metre(s)
MECP	Ontario Ministry of the Environment, Conservation and Parks
N/A	not applicable
NPS	nominal pipe size
OEB	Ontario Energy Board
psig	pounds per square inch gauge
the Project	Low-Carbon Energy Project
TOC	Technology and Operations Centre

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1.0 INTRODUCTION

Enbridge Gas Inc. (Enbridge) retained Dillon Consulting Limited (Dillon) to undertake a route selection and environmental and socio-economic impact study and report (Environmental Report) for the proposed Low-Carbon Energy Project (the Project).

The Environmental Report (Dillon, 2019a) for the Project was completed in May 2019. Following completion of the Environmental Report, Enbridge provided additional information regarding the Project in two Addendums. Addendum #1 (Dillon, 2019b) was completed in September 2019 and addressed comments from the Toronto and Region Conservation Authority. Addendum #2 (Dillon, 2019c) was completed in December 2019 and provided updated Project mapping depicting only Phase 1 of the Project, as Phase 2 was removed from the Project scope. Enbridge filed a Leave-to-Construct (LTC) application for the Project with the Ontario Energy Board (OEB) on December 20, 2019.

Since the completion of the Environmental Report and the Addendums (Dillon, 2019a; 2019b; 2019c), Enbridge has made changes to the scope of the Project that require additional study and review. This report constitutes an Amendment to the Environmental Report (Amendment #1) and provides the results of Dillon's review of Enbridge's proposed changes to the Project. These proposed Project changes include:

- The selection of the Phase 1 Alternative Route as the Preferred Route; and,
- The addition of three small facilities on Enbridge-owned property into the Environmental Report scope.

The proposed Project changes are illustrated on **Figure 1** and are described in further detail in **Section 3**.

The objective of this Amendment is to determine if there are any additional potential environmental or socio-economic impacts as a result of the proposed changes that were not captured in the assessment already provided in the Environmental Report.

Stakeholder consultation and Indigenous engagement continue to be key components of the study. This draft Amendment is being shared with interested parties to identify any issues and concerns related to the proposed Project changes. Following the provision of this draft Amendment, interested parties are invited to provide comments, questions, or concerns to the Project Team within a 30-day period. This feedback will be documented as a component of the final Amendment that will be filed with the OEB (see **Section 6** for further details).

This Amendment is to be read in conjunction with the Environmental Report and the Addendums (Dillon, 2019a; 2019b; 2019c). Information from the Environmental Report and the Addendums is not repeated in this Amendment, except where required to provide context.

The Environmental Report and the Addendums are available for review by interested stakeholders on the Enbridge Project website at <https://www.enbridgegas.com/about-us>. Click on the "**Projects**" tab and select "**Low-Carbon Energy Project**".

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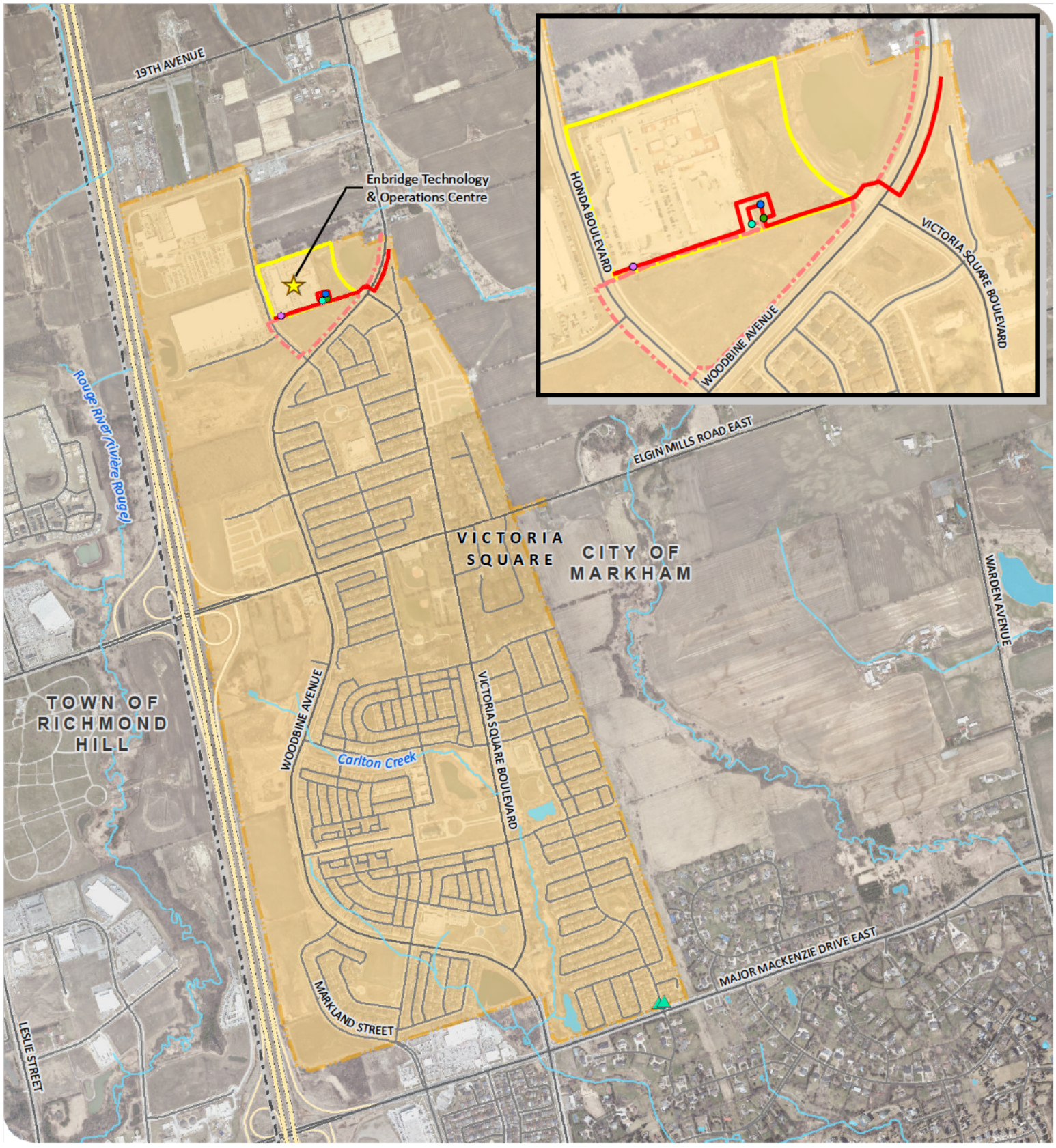

ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

PROPOSED PIPELINE ROUTES

FIGURE 1

- Phase 1 Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Phase 1 Blended Gas Distribution Area
- Enbridge Property
- Watercourse
- Waterbody
- Municipal Boundary

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MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION
MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:20,000

0 0.125 0.25 0.5 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12

2.0 PROJECT BACKGROUND

The Project was initially proposed as a two-phase installation of approximately 6.7 kilometres (km) of natural gas pipeline in the City of Markham. Addendum #2 to the Environmental Report resulted in the removal of Phase 2 from the Project scope. As such, the Project scope was reduced to Phase 1 only, which would involve the installation of approximately 1.3 km of nominal pipe size (NPS) 6-inch and NPS 8-inch pipe, primarily along Woodbine Avenue and Honda Boulevard, ending at Enbridge's Technology and Operations Centre (see **Figure 1**).

The objective of the Project is to blend a small amount of hydrogen gas (up to 2% by volume) into a small, carefully selected portion of Enbridge's existing natural gas network in order to reduce greenhouse gas emissions. An affiliate of Enbridge Gas Inc. operates a Power-to-Gas facility at the Technology and Operations Centre, which uses surplus electricity to 'split' water molecules into hydrogen and oxygen using electrolyzer technology. The hydrogen gas would be injected into the existing natural gas network and blended gas would be distributed to the Victoria Square neighbourhood, as illustrated on **Figure 1**.

The Environmental Report (Dillon, 2019a) was completed by Dillon in May 2019 and conforms to the OEB *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition* (2016).

The Environmental Report involved undertaking an inventory of physical, natural and socio-economic features within identified Study Areas (see Section 3, Physical, Natural and Socio-Economic Environment Setting in the Environmental Report). Potential alternative routes were identified and then evaluated against one another to select Preferred Routes for each Project Phase. The route selection evaluation process is detailed in Section 5 of the Environmental Report. Public involvement played an important role in this process.

In accordance with the OEB Guidelines, Enbridge carried out a comprehensive stakeholder consultation program to consult and communicate with federal, provincial, and municipal government agencies, Indigenous communities, directly and indirectly affected landowners, residents, and interested members of the public. The stakeholder consultation program methods and results are detailed in Section 4 of the Environmental Report.

Potential environmental and socio-economic impacts and associated mitigation measures are detailed in Section 6 of the Environmental Report. Mitigation measures were recommended to avoid or reduce potential negative impacts to environmental and socio-economic features. Based on the original Project scope and the adoption of mitigation measures recommended in the Environmental Report, Dillon did not predict any long-term impacts from the construction and operation of the Project.

Following the completion of the Environmental Report in May 2019, Enbridge has revised the scope of the Project as detailed in **Section 3**.

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3.0 PROPOSED PROJECT CHANGES

Enbridge is no longer proposing to construct the Phase 1 Preferred Route identified in the Environmental Report. A slight variation of the Phase 1 Alternative Route has now been identified as the Preferred Route (see **Figure 1**).

3.1 RATIONALE

The following provides the rationale for the proposed Project changes. Enbridge has identified these proposed changes as a result of the ongoing detailed engineering design process, the acquisition of new land adjacent to Enbridge's existing Technology and Operations Centre (TOC) property at 101 Honda Boulevard, and stakeholder consultation.

Proceeding with the Phase 1 Preferred Route as described in the Environmental Report would have resulted in added congestion within the TOC Operations Compound, with added safety concerns. The Operations Compound currently has live traffic from operational vehicles, and it houses the Power-to-Gas facilities, the refuelling facilities for compressed natural gas vehicles, and an inventory of materials to support raw material for operations, which are accessed multiple times per day. As part of the long-term plan for the TOC, Enbridge recently acquired new land adjacent to the TOC property, which will now better accommodate the hydrogen-blending facilities required for the Project.

At the Project open houses held in 2019, concerns were raised regarding disruptions to the community due to construction along Woodbine Avenue, including traffic congestion, noise, dust, and accessibility. The new Preferred Route addresses construction concerns, as it results in a reduced duration of construction on Woodbine Avenue, thereby reducing effects such as traffic disruptions dust, and noise. In addition, selecting the new Preferred Route would further add efficiencies to the Project as it would reduce the length of the pipe needed by approximately 40%, resulting in a reduced cost for the Project. Hosting the facilities in the new location also enhances safety at the current site as it reduces the impact of construction and has the added benefit of eliminating the need for construction on Honda Boulevard.

3.2 DESCRIPTION OF THE NEW PREFERRED ROUTE

The new Preferred Route would consist of the installation of approximately 755 metres (m) of new pipeline, including approximately 25 m of NPS 8-inch intermediate pressure (IP) plastic pipe, 380 m of NPS 6-inch extra high pressure (HP) steel pipe, and 350 m of NPS 6-inch HP steel pipe.

The new Preferred Route would begin at a tie-in point along an existing Enbridge pipeline located on the east side of Woodbine Avenue, approximately 300 m northeast of the Enbridge Technology and Operations Centre. It would travel south to the intersection of Woodbine Avenue and Victoria Square Boulevard where it would then turn west and cross under Woodbine Avenue and continue along the southern edge of the Enbridge property at 101 Honda Boulevard. The pipeline would be connected to the proposed hydrogen-blending facilities on the Enbridge property and would continue west to Honda Boulevard where it would tie into another existing Enbridge pipeline (see **Figure 1**).

3.3 DESCRIPTION OF PROPOSED HYDROGEN-BLENDING FACILITIES

The facilities described here are a component of the current LTC application to the OEB that was submitted in December 2020, however, they were not within the scope of the Environmental Report at that time. Their new proposed location has resulted in them being added to the scope of the Environmental Report, and thus they are being assessed in this Amendment.

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The proposed Hydrogen Station and Hydrogen Blending Station, as well as a Remote Terminal Unit (RTU) building, will be located on a concrete pad within a fenced and gravelled compound on Enbridge's existing property at 101 Honda Boulevard. The purpose of this facility is to regulate the pressures of the natural gas and hydrogen prior to mixing and controlling the amount of hydrogen that is injected based on the measured flow of natural gas. The fenced compound will measure approximately 13 m × 25 m and the maximum height of the buildings will be 3.5 m.

The proposed District Station will also be located on Enbridge's existing property at 101 Honda Boulevard and will be nested inside an aluminum box measuring approximately 2 m × 2 m × 2 m. The purpose of the District Station is to reduce the gas pressure from the HP (175 psig) steel pipeline to the IP (55 psig) plastic pipeline for distribution.

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4.0 STUDY PROCESS AND PROJECT SETTING

Section 2 of the Environmental Report describes the study methods used in the Environmental Report, as well as the objectives and methods of stakeholder and Indigenous consultation. The same methods are applied in this Amendment.

Section 3 of the Environmental Report describes the environmental and socio-economic setting of the Project. There is no change to the setting information as a result of the proposed Project changes described in this Amendment, as the location of the Project remains the same (see **Figure 2** and **Figure 3** for mapped natural environment and socio-economic features, respectively). The footprint of the new Preferred Route and proposed hydrogen-blending facilities was covered by desktop and field studies conducted for the Environmental Report. Similarly, the Study Area identified for the Project (120 m buffer on each side of the proposed route for a total width of 240 m) remains the same as identified in the Environmental Report (see **Figure 4**).

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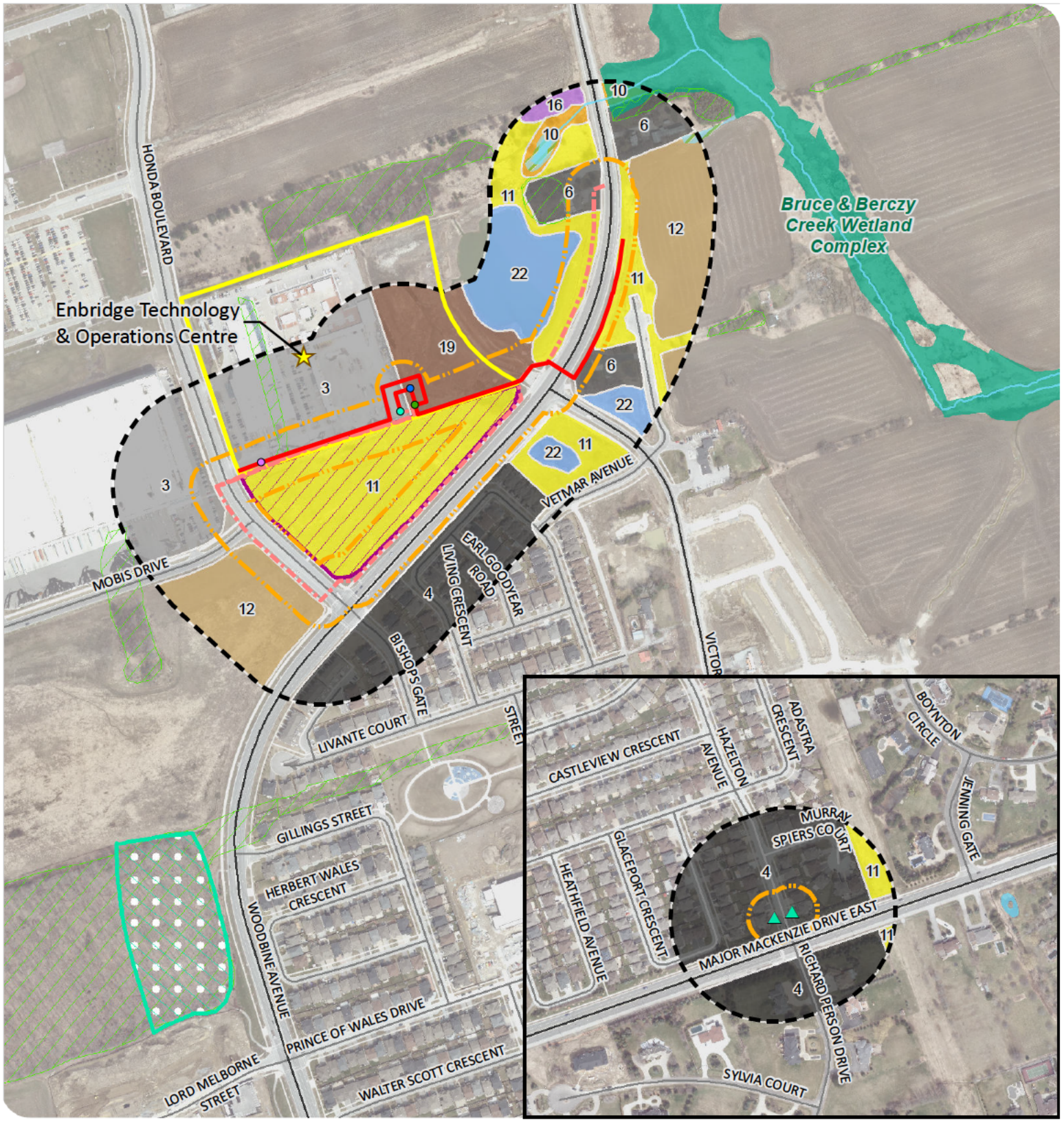

ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

NATURAL ENVIRONMENT FEATURES

FIGURE 2

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Study Area (120 m)
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody
- Unevaluated Wetland
- Provincially Significant Wetland
- Wooded Area (MNRF)
- Candidate Habitat Species of Conservation Concern
- Candidate SAR Bat Habitat and Significant Wildlife for Bat Maternity Colonies
- Potential Grassland Breeding Bird Habitat

Ecological Land Classification

- 3. CVC: Commercial and Institutional
- 4. CVR_1: Low Density Residential
- 6. CVR_4: Rural Property
- 10. MAM: Meadow Marsh
- 11. MEM: Mixed Meadow
- 12. OAGM1: Annual Row Crop
- 16. THD: Deciduous Thicket
- 19. Disturbed Ground
- 22. Stormwater Management Facility

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N
FILE LOCATION: I:\GIS\189005 - Enbridge

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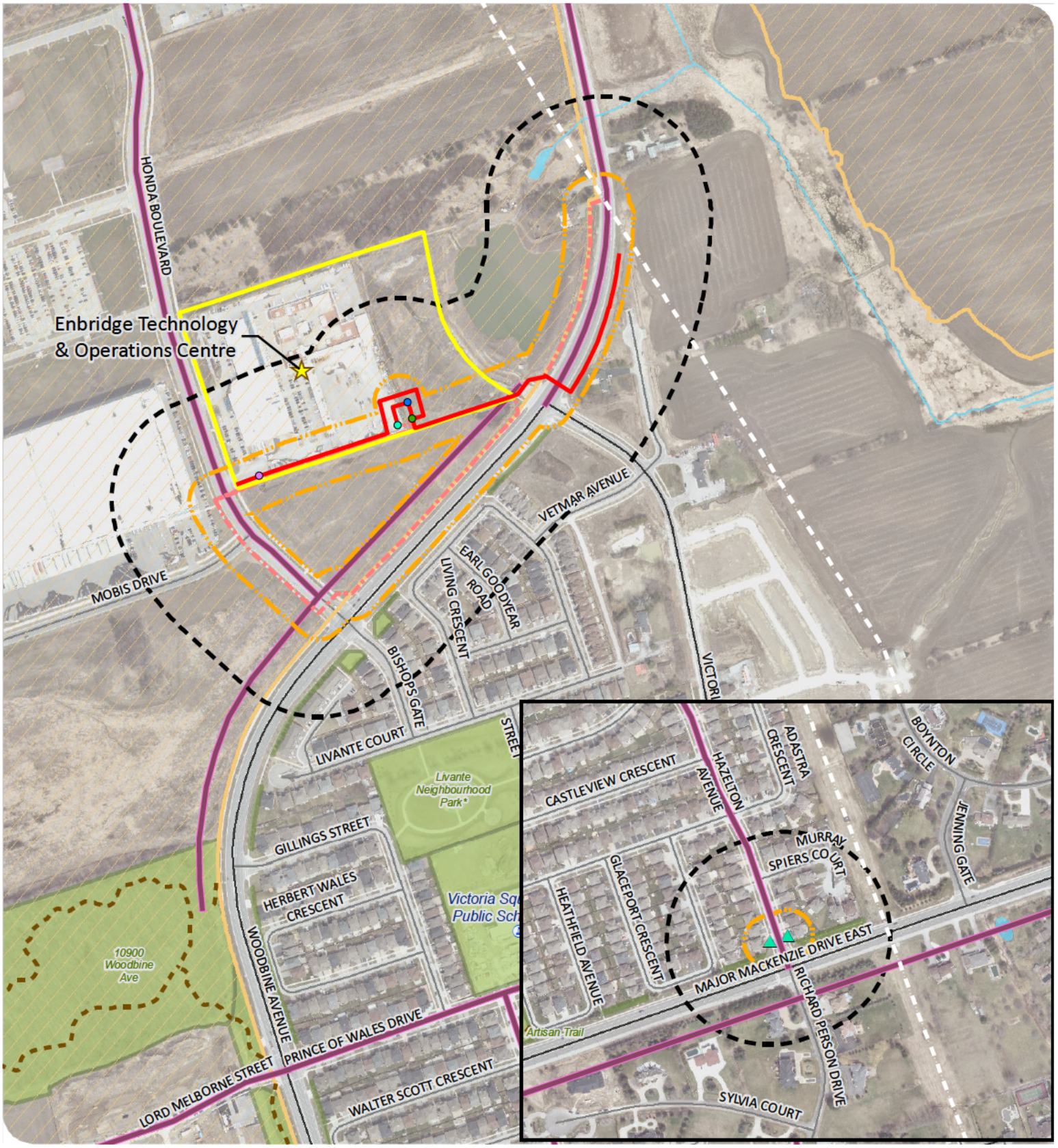
PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12



ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

SOCIO-ECONOMIC FEATURES

FIGURE 3

ENBRIDGE

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Study Area (120 m)
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody
- Educational Facility
- Hydro Line
- Trail
- Bicycle Route
- Business Park
- Park

DILLON CONSULTING

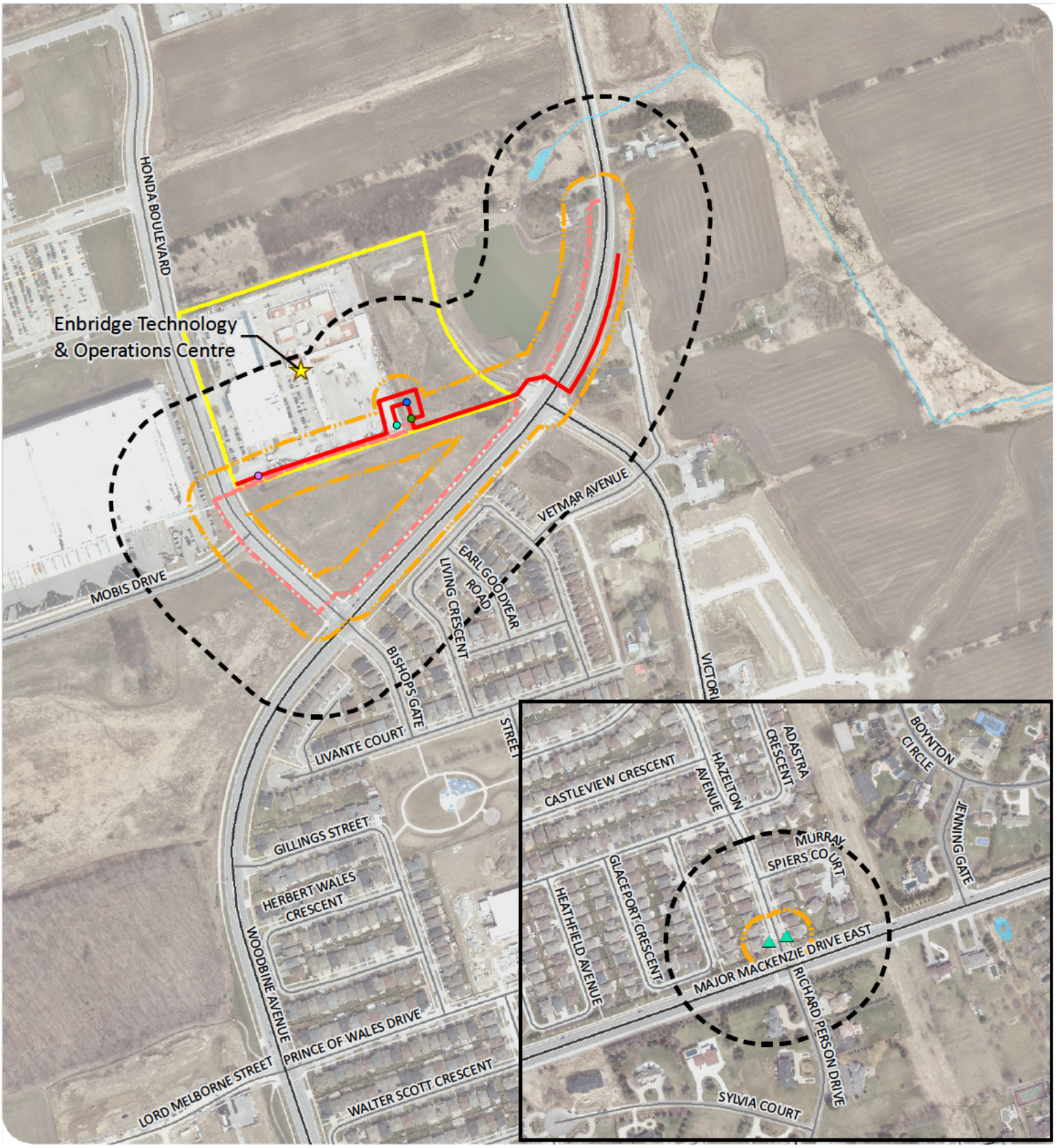
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N
FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:6,000

0 0.04 0.08 0.16 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12



ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

STUDY AREAS
FIGURE 4

ENBRIDGE

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Study Area (120 m)
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION
MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N
FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:6,000

0 0.04 0.08 0.16 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12

5.0 POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

Section 6 of the Environmental Report includes a detailed mitigation strategy based on potential impacts of the Project. This Amendment assesses the potential for previously unassessed/new impacts as a result of the proposed Project changes, and, where necessary, recommends additional mitigation measures. Select mitigation measures are illustrated on **Figure 5**.

This Amendment also considers potential changes in cumulative effects. Proposed developments within 1 km of the Project are listed in Section 7.3 of the Environmental Report, and additional developments identified by the Toronto and Region Conservation Authority are listed in Addendum #1. These proposed developments were reviewed to identify any potential changes to cumulative Project interactions as a result of the proposed Project changes.

5.1 NEW PREFERRED ROUTE

Since the new Preferred Route was previously evaluated as the Phase 1 Alternative Route in the Environmental Report, a new effects assessment is not deemed warranted and, instead, a comparison of constraints between the previously identified Phase 1 Preferred Route and the new Preferred Route is provided in the following subsections.

Considering the criteria used to evaluate the Phase 1 Preferred and Alternative Routes in Section 5 of the Environmental Report, there are few differences between the proposed changes in this Amendment relative to the original Project scope included in the Environmental Report.

BIOPHYSICAL CONSTRAINTS

There are no previously unidentified biophysical constraints associated with the new Preferred Route.

Neither the previously identified Phase 1 Preferred Route, nor the new Preferred Route, cross any waterbodies, watercourses, wetlands/wetland complexes, Special Policy Areas (i.e., Greenbelt), or Areas of Natural or Scientific Interest.

The new Preferred Route is located entirely within municipal road rights-of-way and on previously disturbed land owned by Enbridge.

SOCIO-ECONOMIC CONSTRAINTS

There are no previously unidentified socio-economic constraints associated with the new Preferred Route.

The new Preferred Route will have fewer impacts on the neighbourhood/residences to the south of Woodbine Avenue, as it crosses to the west side of Woodbine Avenue just north of Victoria Square Boulevard, before the commencement of the housing subdivisions. In comparison, the previously identified Phase 1 Preferred Route would have run parallel to Woodbine Avenue from the north tie-in point southwest to Honda Boulevard and would have resulted in a larger footprint adjacent to the residential area.

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TECHNICAL CONSTRAINTS

There are no previously unidentified technical constraints associated with the new Preferred Route.

The new Preferred Route has a shorter overall length (approximately 755 m as opposed to 1.3 km) and has only one road crossing (in comparison to three crossings associated with the previously identified Phase 1 Preferred Route).

SUMMARY

The new Preferred Route does not result in any material change to the biophysical, socio-economic, or technical constraints considered in the Environmental Report. There are minor advantages to the new Preferred Route over the previously identified Phase 1 Preferred Route including lesser impact on nearby residences (south of Woodbine Avenue), shorter overall length, and fewer road crossings.

The assessment of potential Project effects, cumulative effects, and recommended mitigation measures presented in the Environmental Report in regard to the Phase 1 Preferred Route remains unchanged as a result of the new Preferred Route. Consequently, no additional mitigation measures beyond those recommended in the Environmental Report are required.

5.2 PROPOSED HYDROGEN-BLENDING FACILITIES

As noted in **Section 3**, the proposed hydrogen-blending facilities will be located entirely within Enbridge's property at 101 Honda Boulevard on previously disturbed land.

Given the setting of the proposed hydrogen-blending facilities in relation to the previously evaluated Phase 1 Preferred and Alternative Routes, there are no additional constraints (biophysical, socio-economic, or technical) anticipated as a result of the proposed hydrogen-blending facilities, as they are located within the Study Area that was reviewed and assessed in the Environmental Report.

Enbridge will be applying for an Environmental Compliance Approval (ECA) from the Ontario Ministry of the Environment, Conservation and Parks (MECP) that will permit air and noise emissions associated with the proposed hydrogen-blending facilities. As part of the ECA application to MECP, Enbridge will complete all necessary studies to determine the potential impact of the air and noise emissions from the proposed hydrogen-blending facilities.

The following subsections provide an assessment of potential effects and cumulative effects associated with the proposed hydrogen-blending facilities, and recommends additional mitigation measures, where necessary.

POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

Table 1 provides the assessment of potential impacts associated with the proposed hydrogen-blending facilities on the physical, natural, and socio-economic environment, as well as recommended mitigation measures.

The assessment provided in **Table 1** was only conducted for the proposed hydrogen-blending facilities described in this Amendment that were not previously evaluated in the Environmental Report. Effects and mitigation measures considered in the Environmental Report are not repeated below.

The proposed hydrogen-blending facilities do not result in a change to the effects assessment for most of the components; however, new potential interactions have been identified for the Physiography, Topography, and Surficial Geology; Atmospheric Environment; Noise; and Access Modifications and Restrictions components.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
PHYSICAL ENVIRONMENT			
Physiography, Topography, and Surficial Geology	***Construction*** The topography at the proposed facility sites is generally level and no unique physical features are present. The footprint of the proposed hydrogen-blending facilities will be graded, if required, and the facilities will be constructed on concrete pads. The area within the fenced compound will be gravelled. There is potential for a minor, localized change in topography as a result of grading and the installation of permanent components that may alter natural surface drainage patterns. ***Operation*** No effects on physiography, topography, and surficial geology are anticipated during operation of the proposed hydrogen-blending facilities.	• Pre-construction contours and drainage patterns should be re-established around the facilities, to the extent feasible, following construction. • Maintain site drainage during all phases of construction. Ensure construction activities do not cause the ponding of water or unintentional channelization of surface water flow. • Following the completion of construction activities, regrade areas with vehicle ruts or erosion gullies if required.	No significant net effect is anticipated following implementation of the recommended mitigation measures.
Groundwater	***Construction*** The proposed hydrogen-blending facilities will be located above-ground and no interaction with groundwater is anticipated during construction. ***Operation*** No effects on groundwater are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	Not applicable (N/A) – no new potential effects are anticipated.
Bedrock	***Construction*** The proposed hydrogen-blending facilities will be located above-ground and no interaction with bedrock is anticipated during construction. ***Operation*** No effects on bedrock are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Seismicity	***Construction*** No effects of seismic activity are anticipated during construction of the proposed hydrogen-blending facilities. ***Operation*** Impacts to the proposed hydrogen-blending facilities as a result of seismic activity are not anticipated at this time. The facilities will be designed in accordance with low to moderate levels of seismicity and comply with Canadian Geological Survey data and National Building Code minimum standards.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
NATURAL ENVIRONMENT			
Atmospheric Environment	***Construction*** Effects on the atmospheric environment from construction were previously assessed in the Environmental Report and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** There will be venting of natural gas for token relief at the proposed hydrogen-blending facilities during operations. Details on the venting will be provided in Enbridge's ECA permit application to MECP.	• For construction, no additional mitigation measures are recommended beyond the measures provided in the Environmental Report. • During operations, implement requirements/conditions of the ECA permit from MECP.	No significant net effect is anticipated following implementation of the recommended mitigation measures.
Wetlands	***Construction*** There are no wetlands located within 30 m of the proposed hydrogen-blending facilities and no interaction with wetlands is anticipated during construction. ***Operation*** No effects on wetlands are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Surface Water, Fish and Aquatic Habitat	***Construction*** There are no watercourses located within 30 m of the proposed hydrogen-blending facilities and no interaction with surface water, fish, and aquatic habitat is anticipated during construction. ***Operation*** No effects on surface water, fish, and aquatic habitat are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Terrestrial Habitat and Vegetation	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land adjacent to manicured lawns, sidewalks, and major roads (Woodbine Avenue and Honda Boulevard). Vegetation encountered will consist of common roadside vegetation of minor ecological value (vegetation capable of colonizing new roadside edges). Effects on terrestrial habitat and vegetation were previously assessed in the Environmental Report and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects on terrestrial habitat and vegetation are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Wildlife, Significant Wildlife Habitat and Species at Risk	***Construction*** No effects on wildlife, significant wildlife habitat, and species at risk are anticipated during construction of the proposed hydrogen-blending facilities. ***Operation*** No effects on wildlife, significant wildlife habitat, and species at risk are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Agriculture and Soils	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land adjacent to manicured lawns, sidewalks, and major roads (Woodbine Avenue and Honda Boulevard). Topsoil will be removed within the footprint of the facilities to accommodate site preparation and installation of the concrete pad. No interaction with agricultural soils is anticipated during construction. ***Operation*** No effects on agriculture and soils are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
SOCIO-ECONOMIC ENVIRONMENT			
Noise	***Construction*** Construction activities have the potential to disturb residents south of Woodbine Avenue in the Victoria Square neighbourhood. Construction-related noise effects are expected to be minor, temporary, and localized, particularly given the existing acoustic environment which includes regular traffic noise on Woodbine Avenue. ***Operation*** There may be some noise from the facilities during operations, however, this will be permitted through the MECP ECA process.	• For construction, no additional mitigation measures are recommended beyond the measures provided in the Environmental Report. • During operations, implement requirements/conditions of the ECA permit from MECP.	No significant net effect is anticipated following implementation of the recommended mitigation measures.
Access Modifications and Restrictions	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge, however, there is the potential that construction of the District Station may require some workspace that extends into the sidewalk along Honda Boulevard, temporarily disrupting pedestrian traffic. Access restrictions on road traffic are not anticipated. ***Operation*** No effects on access will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are recommended beyond the measures provided in the Environmental Report.	No significant net effect is anticipated following implementation of the recommended mitigation measures.

Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Traffic Disruption	***Construction*** Effects on traffic as a result of construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects on traffic will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Vibration	***Construction*** Effects of vibration during construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects of vibration will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Construction Waste	***Construction*** Effects of construction wastes were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects of construction waste will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Bentonite Slurry	***Construction*** Bentonite slurry is generated during trenchless pipeline construction and, therefore, will not be generated during facility construction. ***Operation*** No effects of bentonite slurry will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Hydrostatic Test Water	***Construction*** Hydrostatic test water is not required for construction of the proposed hydrogen-blending facilities. ***Operation*** No effects of hydrostatic test water will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Aesthetics	***Construction*** Effects on aesthetics as a result of construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** The proposed hydrogen-blending facilities will be permanent and will alter the current aesthetics of the area; however, in the context of the existing setting, including the existing Enbridge and Mobis Parts Canada buildings, and the presence of Woodbine Avenue, a busy thorough-fare immediately adjacent to the property, the change in aesthetics is anticipated to be minor.	• No additional mitigation measures are required.	No significant net effect is anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Existing and Planned Land Use	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge. As such, there will be no effects on existing and planned land use at the proposed facility locations. ***Operation*** No effects on existing and planned land use will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Existing Linear Infrastructure Corridors and Other Infrastructure	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge that is currently vacant. No interaction with existing linear infrastructure corridors and other infrastructure is anticipated. ***Operation*** No effects on existing linear infrastructure corridors and other infrastructure will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Population and Demographics	***Construction*** No effects on population and demographics will occur during construction of the proposed hydrogen-blending facilities. ***Operation*** No effects on population and demographics will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Economic Activities, Employment and Labour Force	***Construction*** Effects on economic activities, employment, and labour force as a result of construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects on economic activities, employment and labour force will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Tourism and Recreation	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge. No interaction with tourism and recreation is anticipated. ***Operation*** No effects on tourism and recreation will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Indigenous Communities	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge. No interaction with Indigenous communities is anticipated. ***Operation*** No effects on Indigenous communities will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Archaeological and Heritage Resources	***Construction*** The Stage 1 Archaeological Assessment conducted for the Project concluded that the Phase 1 Study Area be considered free of archaeological concern and no further assessment was recommended. As such, no interaction with archaeological and heritage resources is anticipated during construction. ***Operation*** No effects on archaeological and heritage resources will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Community Services	***Construction*** No effects on community services will occur during construction of the proposed hydrogen-blending facilities. ***Operation*** No effects on community services will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Contaminated Sites	***Construction*** There is limited potential to encounter contaminated sites during construction. Effects of contaminated sites discovered during construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects of contaminated sites will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Planning Policies	***Construction*** The Project will need to conform to applicable provincial and municipal planning policies. No new interactions have been identified as a result of the proposed hydrogen-blending facilities ***Operation*** No effects on planning policies will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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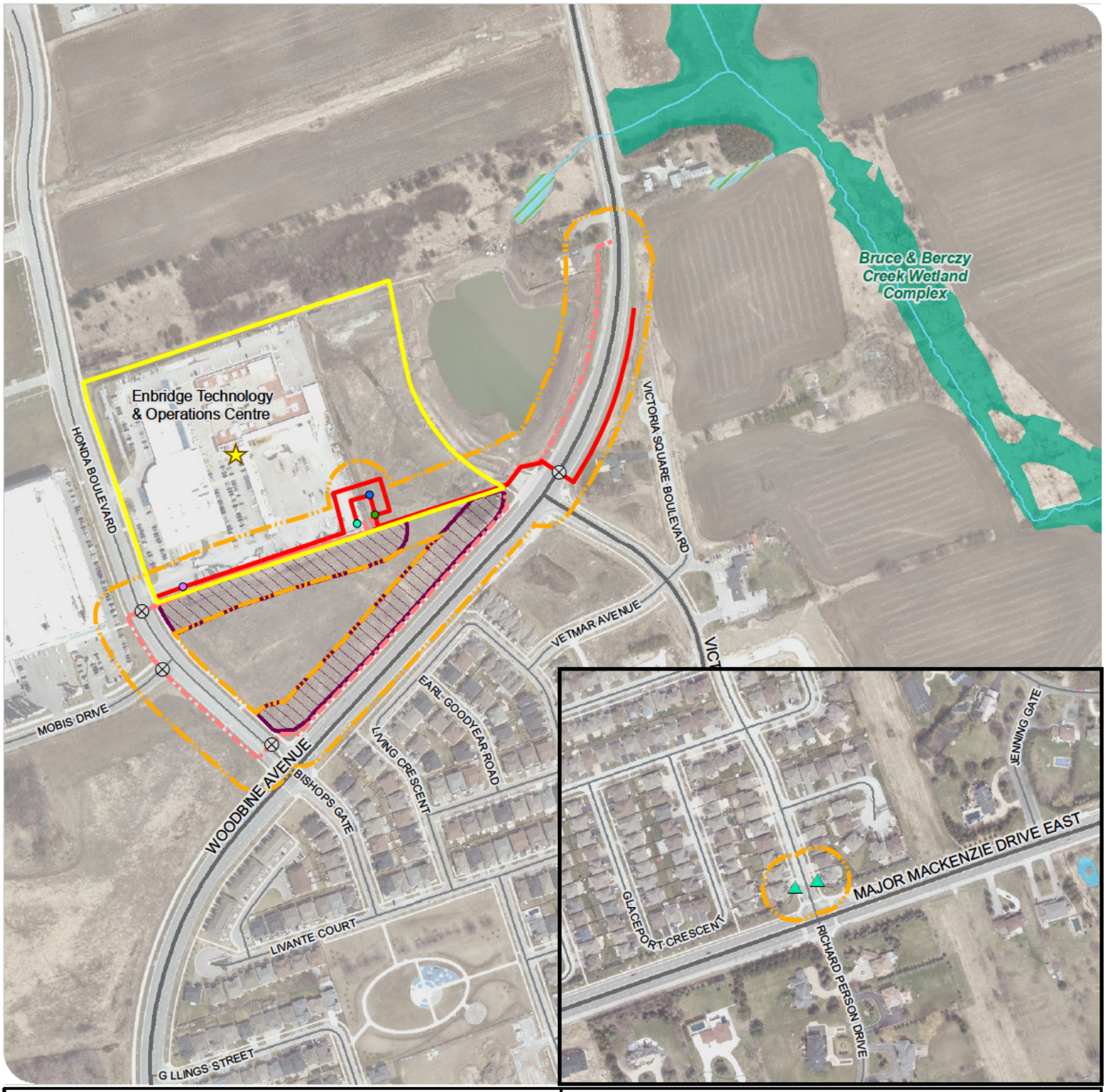

⊗ **Potential Road or Rail Crossing.** For minor road crossings, open-cut or trenchless crossings will be applied. Contact the local region or municipality. Enbridge to develop a Traffic Management Plan to ensure that traffic is maintained while the crossing is conducted. Flag persons will be provided as required. Refer to Section 18.0 of the Enbridge Environmental Construction and Maintenance Manual, 2019.

Candidate Significant Wildlife Habitat. These areas are known to contain Significant Wildlife Habitat. Abide by restricted activity periods and mitigation measures in Table 7.

ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

MITIGATION

FIGURE 5

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody
- Unevaluated Wetland
- Provincially Significant Wetland

*As identified in the TRCA's 2010 Draft Rouge River Watershed Management Plan.

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N
FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:5,000

0 0.0325 0.065 0.13 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12

CUMULATIVE EFFECTS ASSESSMENT

Cumulative effects to the physical and natural environment are anticipated to be negligible given the land for the proposed hydrogen-blending facilities has been previously disturbed and the permanent facility footprints will be minimal in an area of existing high anthropogenic disturbances. Residual air and noise emissions are anticipated to be well within regulatory standards and will be in compliance with the MECP ECA permit.

There is a possibility of cumulative effects on the socio-economic environment related to construction traffic, noise, and dust; however, as described in Section 7 of the Environmental Report, the use of appropriate mitigation techniques and the short timeframe for construction will mitigate any cumulative impacts to a low magnitude. Consequently, no significant cumulative effects are anticipated as a result of the addition of the proposed hydrogen-blending facilities to the scope of the Environmental Report.

SUMMARY

The assessment of potential Project effects, cumulative effects, and recommended mitigation measures presented in the Environmental Report remains largely unchanged as a result of the proposed hydrogen-blending facilities.

The proposed hydrogen-blending facilities will result in a minor, localized alteration of topography, some air and noise emissions during operations, a minor alteration of visual aesthetics, and potential temporary pedestrian access restrictions; however, no significant net effects are anticipated with the implementation of mitigation measures. The mitigation measures recommended in the Environmental Report are considered adequate to address these potential minor effects in conjunction with the implementation of any requirements/conditions of the MECP ECA permit for air and noise emissions.

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6.0 STAKEHOLDER AND INDIGENOUS CONSULTATION UPDATE

This draft Amendment is being circulated to all individuals on the Project contact list developed for the Environmental Report. In addition, a Notice of Project Change is being circulated to all individuals who participated in the consultation process either by attending the Open Houses, sending emails to the Project email inbox, or who otherwise provided their contact details to a Project Team Member with an interest in staying informed of Project updates. The Notice of Project Change will also be circulated to approximately 2,700 residents and businesses located within the Phase 1 Study Area (see **Figure 4**). The Notice of Project Change requests public comment on the proposed changes and provides Project contact information.

A 30-day public comment period will be observed following the release of this draft Amendment. Any comments received as a result of consultation relating to the Amendment will be tracked and responses will be provided, as required. Meetings will be held with applicable agencies, Indigenous communities, and other stakeholders on an as-needed basis to review the proposed changes to the Project. A summary of the consultation results, as well as the consultation logs, will be provided in **Appendix A** of the finalized Amendment to be submitted to the OEB.

The final Amendment will be available for review by interested stakeholders on the Enbridge Project website at <https://www.enbridgegas.com/about-us>, following submission to the OEB (anticipated by March 31, 2020).

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7.0 CONCLUSIONS

This Amendment provides the results of Dillon's review of the proposed changes to the Project scope (as described in **Section 3**) since the completion of the Environmental Report in May 2019, as well as the Addendums in September and December 2019.

The new Preferred Route is similar to the Phase 1 Alternative Route evaluated in the Environmental Report. The setting and assessment of the previously identified Phase 1 Preferred Route can be applied to the new Preferred Route given their proximity to one another. The new Preferred Route results in some advantages over the previously identified Phase 1 Preferred Route, including a shorter overall length, fewer road crossings, and smaller overall construction footprint. The proposed hydrogen-blending facilities will be located entirely on Enbridge-owned property and will be subject to the MECP ECA process.

Based on this review, Dillon has determined that the proposed changes to the Project scope do not result in any material change to the assessment, recommended mitigation measures, or conclusions, as presented in the Environmental Report, and no further assessment is considered necessary.

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8.0 REFERENCES

Dillon Consulting Limited (Dillon). 2019a. *Low-Carbon Energy Project Environmental Report*. May 2019. Prepared for Enbridge Gas Inc. Markham, ON. ix + 100 pp. + Appendices. Available at: https://www.enbridgegas.com/about-us.

Dillon Consulting Limited (Dillon). 2019b. *Enbridge Gas Inc. Low-Carbon Energy Project Environment Report Addendum*. September 2019. Prepared for Enbridge Gas Inc. Markham, ON. ii + 5 pp. Available at: https://www.enbridgegas.com/about-us.

Dillon Consulting Limited (Dillon). 2019c. *Enbridge Gas Inc. Low-Carbon Energy Project Environmental Report Addendum #2*. December 2019. Prepared for Enbridge Gas Inc. Markham, ON. i + 8 pp. Available at: https://www.enbridgegas.com/about-us.

Ontario Energy Board (OEB). 2016. *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition*. 70 pp.

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APPENDIX A

Consultation Update – Summary and Logs

[Note: To be completed and included in Final Amendment for OEB submission]

DRAFT

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

[WARNING: ATTACHMENT UNSCANNED]FW: LCEP Notice of Project Change and Environmental Report Amendment - Stage 1 Arch. Assessment 2/2

[redacted] <[redacted]@enbridge.com> Tue, Mar 17, 2020 at 9:30 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]
Sent: Monday, March 16, 2020 4:19 PM
To: [redacted] <[redacted]@curvelake.ca>
Cc: [redacted] <[redacted]@curvelake.ca>; [redacted] <[redacted]@curvelake.ca>
Subject: LCEP Notice of Project Change and Environmental Report Amendment - Stage 1 Arch. Assessment 2/2

Hello [redacted]

See 2/2, attached.

Kindest,

[redacted]

From: [redacted] <[redacted]@curvelake.ca>
Sent: Monday, March 16, 2020 3:25 PM
To: [redacted] <[redacted]@enbridge.com>
Cc: [redacted] <[redacted]@curvelake.ca>; [redacted] <[redacted]@curvelake.ca>
Subject: [External] RE: LCEP Notice of Project Change and Environmental Report Amendment - Stage 1 Arch. Assessment 2/2

EXTERNAL: PLEASE PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe.

Good Afternoon [redacted]

The file you sent to Kaitlin originally was a 26 page document that was just mapping. We still have not received a copy of the archaeological assessment. If the full report is what you are going to send now, than yes that would suffice.

Hope all is well,

[redacted]
Archeological Program Administrator
Curve Lake First Nation Government Services Building
22 Winookeeda Road, Curve Lake, ON K0L 1R0
P: 705.657.8045 ext. 237 F: 705.657.8708
W: www.curvelakefirstnation.ca
E: [redacted]@curvelake.ca

From: [redacted] [mailto[redacted].Book@enbridge.com]
Sent: Monday, March 16, 2020 3:16 PM
To: [redacted] <[redacted]@curvelake.ca>
Cc: [redacted] <[redacted]@curvelake[redacted] <[redacted]@curvelake.ca>
Subject: RE: LCEP Notice of Project Change and [redacted] Report Amendment - Stage 1 Arch. Assessment 2/2

Hello [redacted]

Just wanted to follow-up to make sure the two PDFs, of the original Stage 1 Arch. Assessment sent, will suffice?

Miigwech/Wela'lin,

[redacted]

[redacted]
Senior Advisor, Community & Indigenous Engagement, Eastern Region

Conseillère principale, engagement communautaire et autochtone, région de l'est

Public Affairs, Communications & Sustainability

Affaires publiques, communications et développement durable

Enbridge Pipelines Inc.
Cell: 613-355-6561

Email: [redacted]@enbridge.com

400 Coventry Rd, Ottawa, ON K1K 2C7

enbridge.com
Integrity. Safety. Respect.

From: [redacted] <[redacted]@curvelake.ca>
Sent: Thursday, March 12, 2020 1:05 PM
To: [redacted] <[redacted]@enbridge.com>
Cc: [redacted] <[redacted]@curvelake.ca>; [redacted] <[redacted]@curvelake.ca>
Subject: [External] RE: LCEP Notice of Project Change and Environmental Report Amendment - Stage 1 Arch. Assessment 2/2

EXTERNAL: PLEASE PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe.

Miigwech for coming to the community yesterday Melanie. Would it be possible to get the full Arch. Report? I looked back in my emails but it doesn't seem we had received it.

Please let me know,

[redacted]

From: [redacted] <[redacted]@enbridge.com>
Sent: Thursday, March 12, 2020 9:36 AM
To: [redacted] <[redacted]@curvelake.ca>; [redacted] <[redacted]@curvelake.ca>
Subject: RE: LCEP Notice of Project Change and Environmental Report Amendment - Stage 1 Arch. Assessment 2/2

LCEP Notice of Project Change and Environmental Report Amendment - Stage 1 Arch. Assessment 2/2

From: [redacted]
Sent: Thursday, March 12, 2020 9:32 AM
To: [redacted] <[redacted]@curvelake.ca>; [redacted]@curvelake.ca' <[redacted]@curvelake.ca>
Subject: LCEP Notice of Project Change and Environmental Report Amendment - Stage 1 Arch. Assessment 1/2

Good Morning Dr. [redacted] and [redacted]

First, thank you and your colleague so much for having taken the time to meet yesterday and for welcoming me to your stunning community. I appreciated the opportunity to get to know you folks and the community better. Julie, I hope everything is ok and that we get to meet in the near future.

As requested during the meeting, I have attached the Stage 1 Archaeological Assessment for the *Low-Carbon Energy Project (LCEP)* in Markham, Ontario. We are seeking to resubmit this amended project ER to the OPCC by the end of March. Given that this is a change in project linked to route selection and the addition of buildings to Enbridge-owned property, no new archaeological assessments are required. As such, consistent with the Stage 1 AA from 2019 (attached in two emails), there was no Stage 2 AA field work required for this project.

Please let me know if you have additional questions or feedback.

Miigwech/Wela'lin,

[redacted]

[redacted]
Senior Advisor, Community & Indigenous Engagement, Eastern Region

Conseillère principale, engagement communautaire et autochtone, région de l'est

Public Affairs, Communications & Sustainability

Affaires publiques, communications et développement durable

Enbridge Pipelines Inc.
Cell: 613-355-6561

Email: [redacted]@enbridge.com

400 Coventry Rd, Ottawa, ON K1K 2C7

enbridge.com
Integrity. Safety. Respect.

P324-0378-2019_12Mar19_RE_Part2 (1).pdf
13137K



Map 17: 1995 Aerial Photograph – Section 5



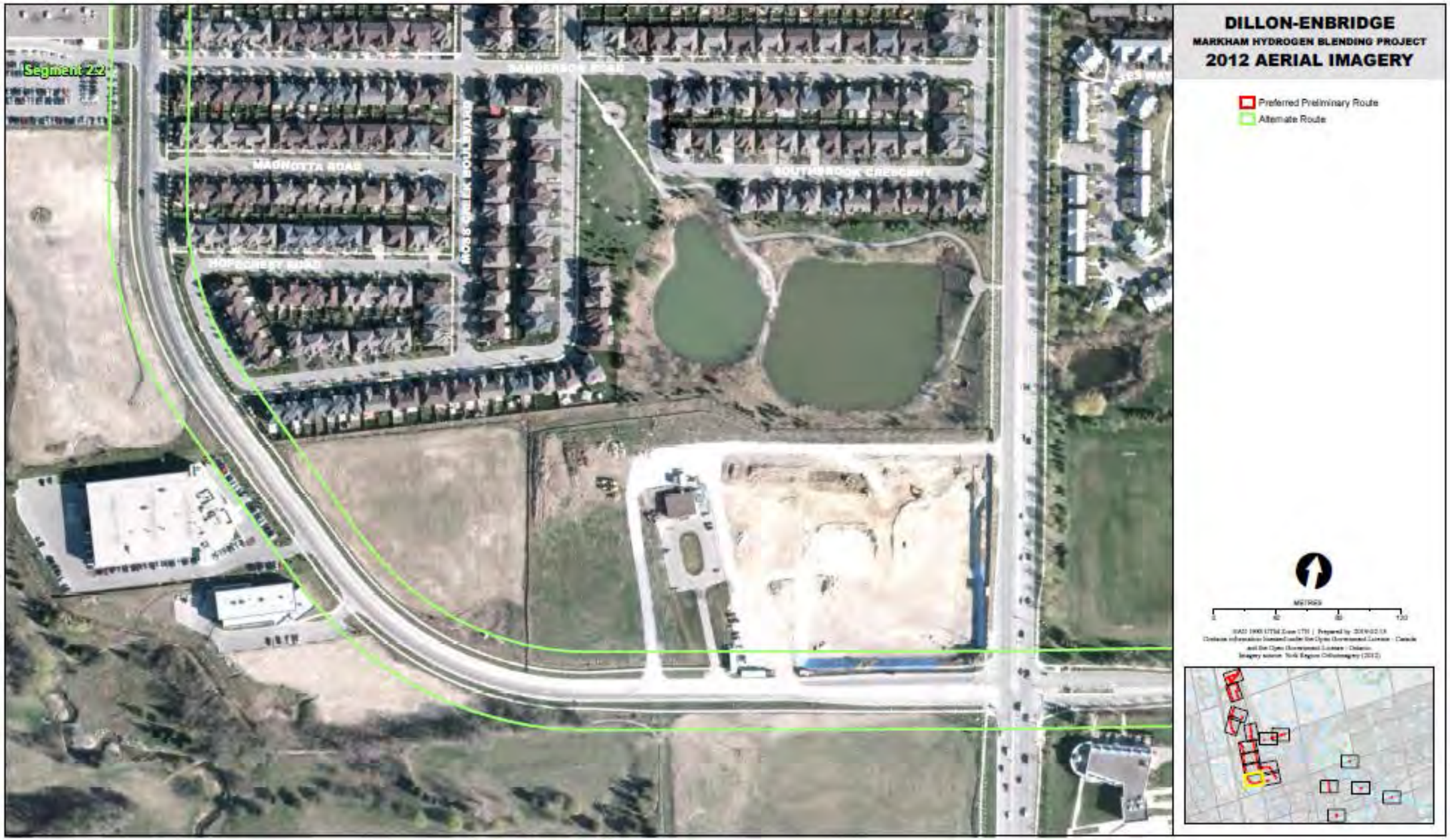
Map 18: 1999 Aerial Photograph – Section 5



Map 19: 1999 Aerial Photograph – Section 8



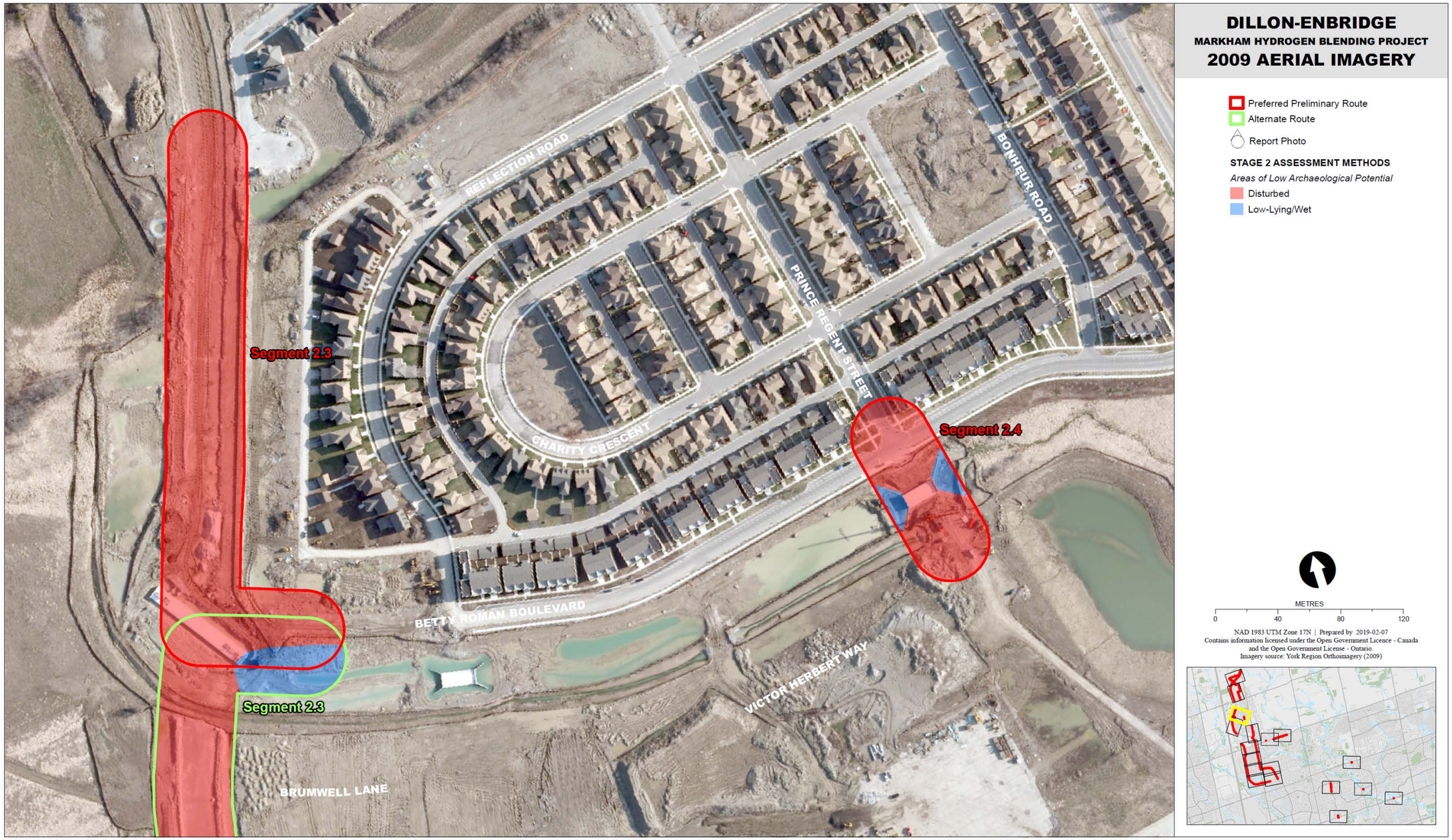
Map 20: 1999 Aerial Photograph – Section 8



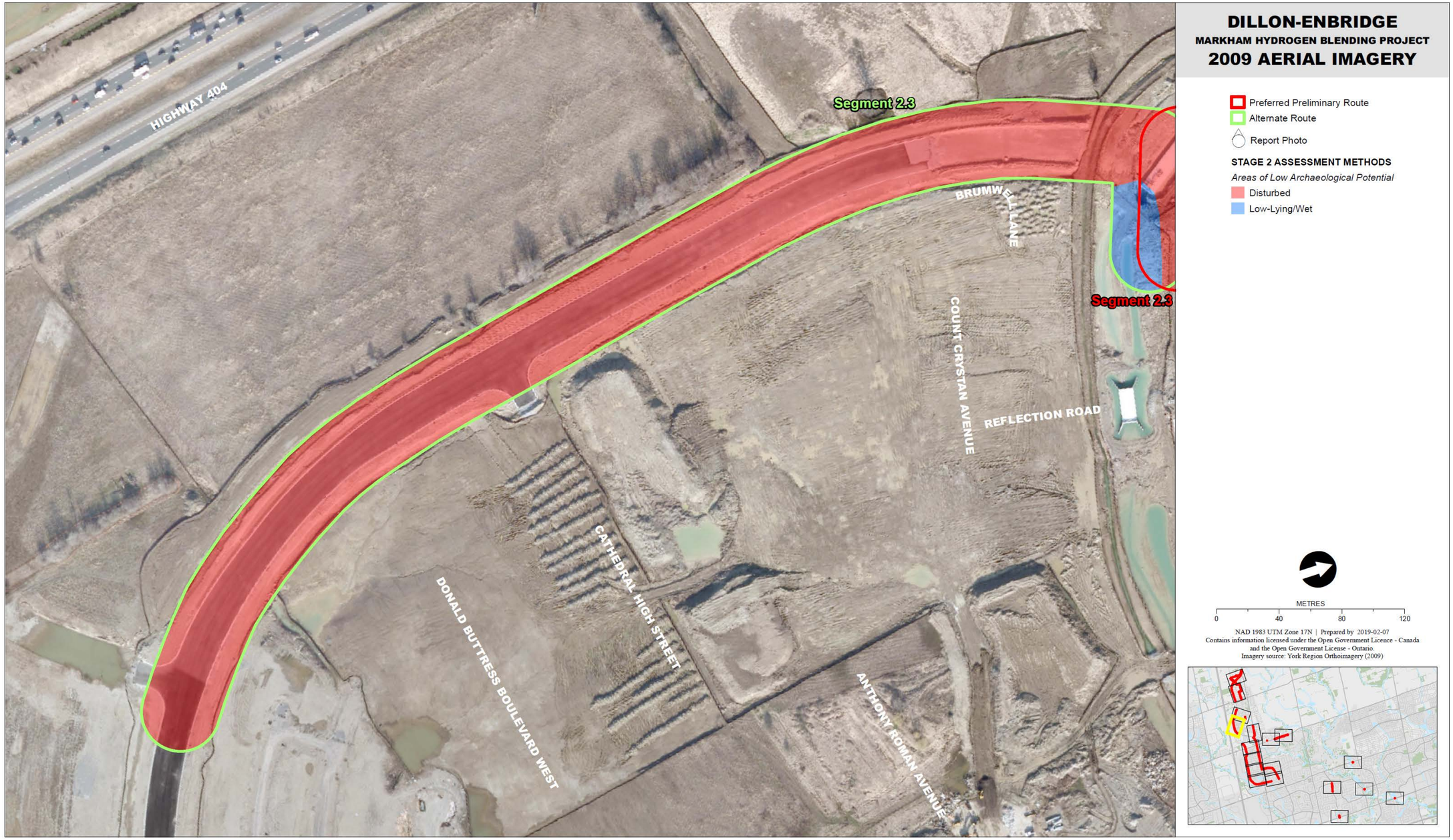
Map 21: 2012 Aerial Photograph – Section 8



Map 22: 1995 Aerial Photograph – Section 9



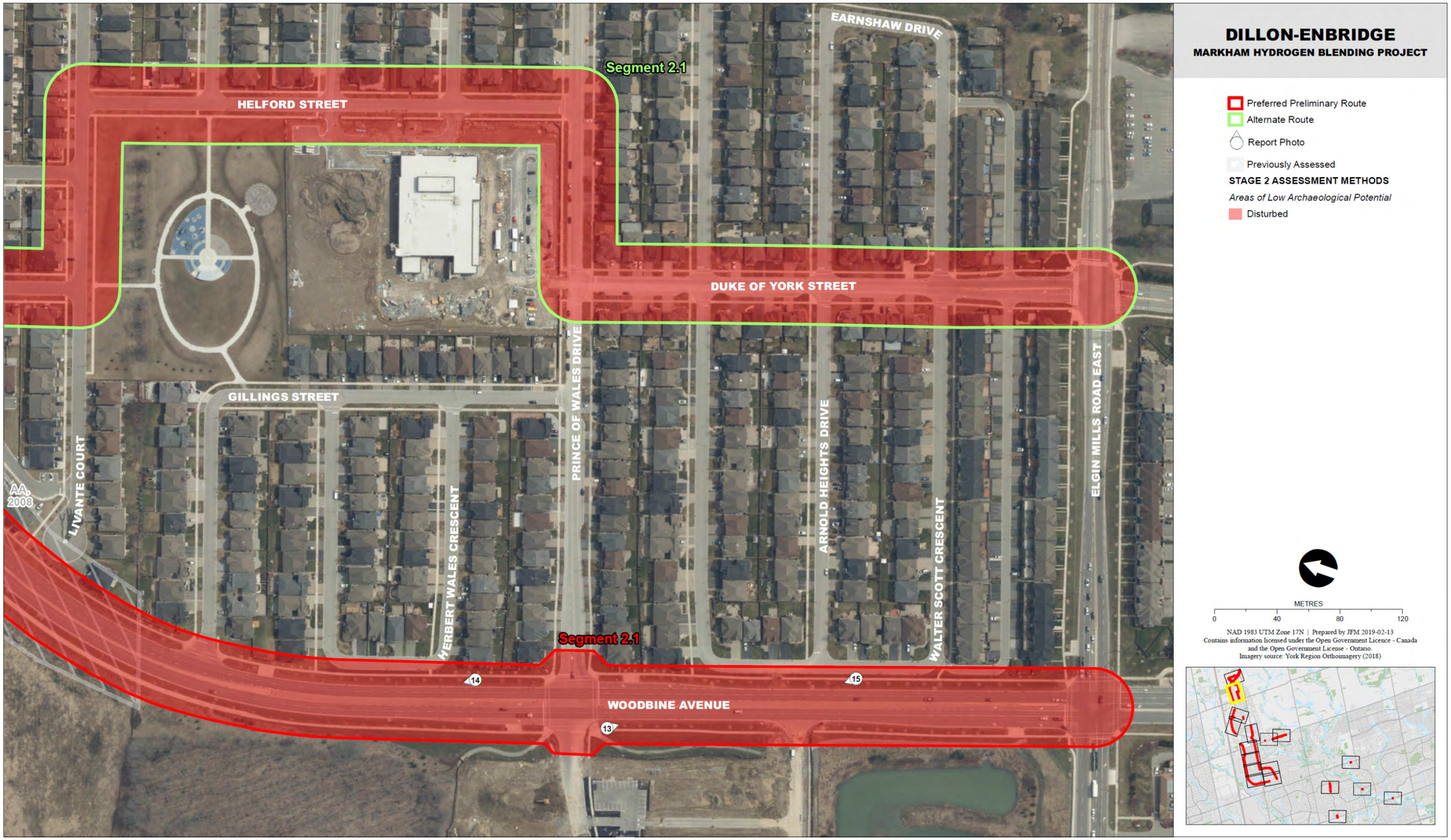
Map 23: 2009 Aerial Photograph – Section 10



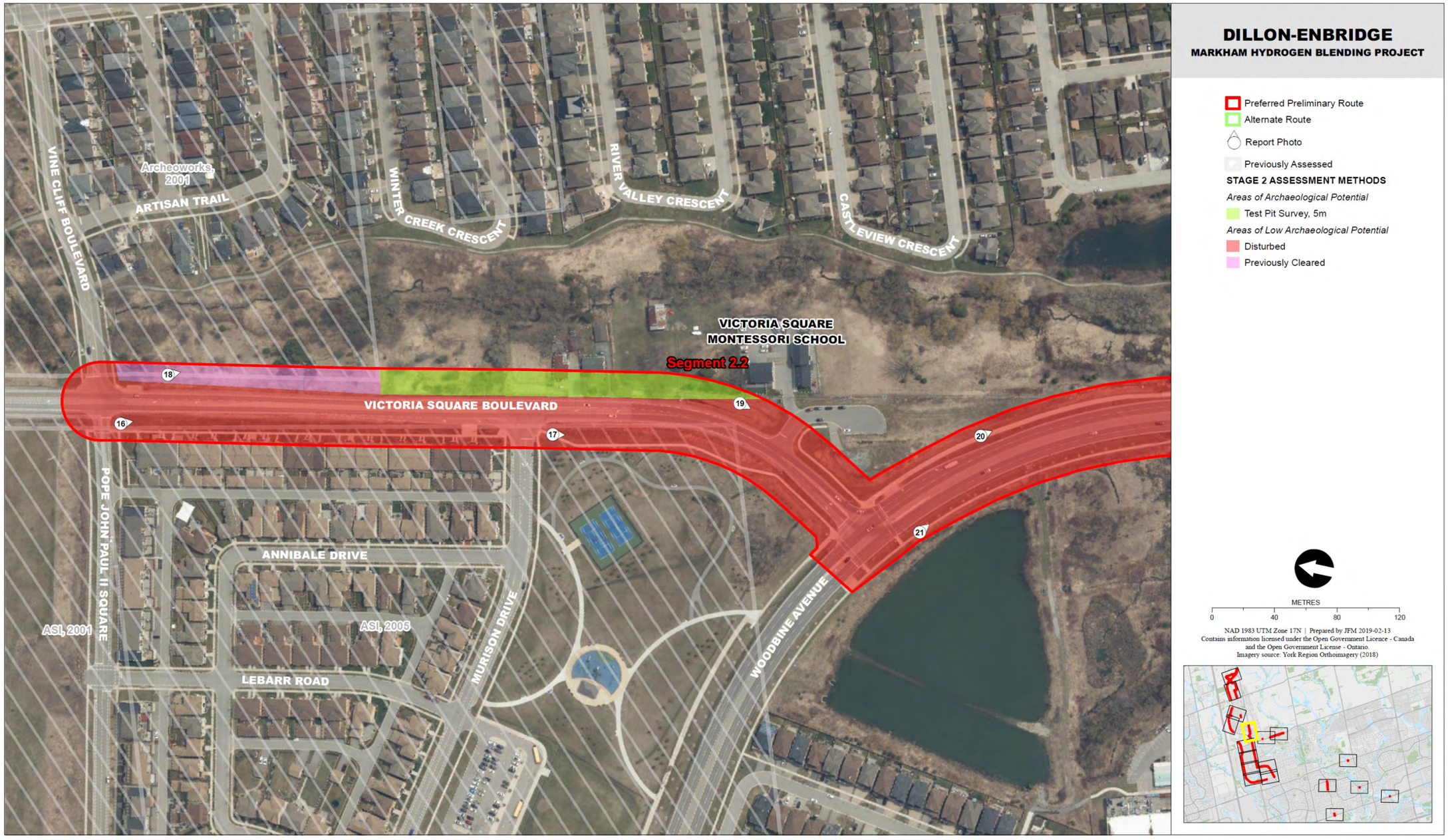
Map 24: 2009 Aerial Photograph – Section 11



Map 25: Stage 1 Areas of Archaeological Potential – Section 1



Map 26: Stage 1 Areas of Archaeological Potential – Section 2



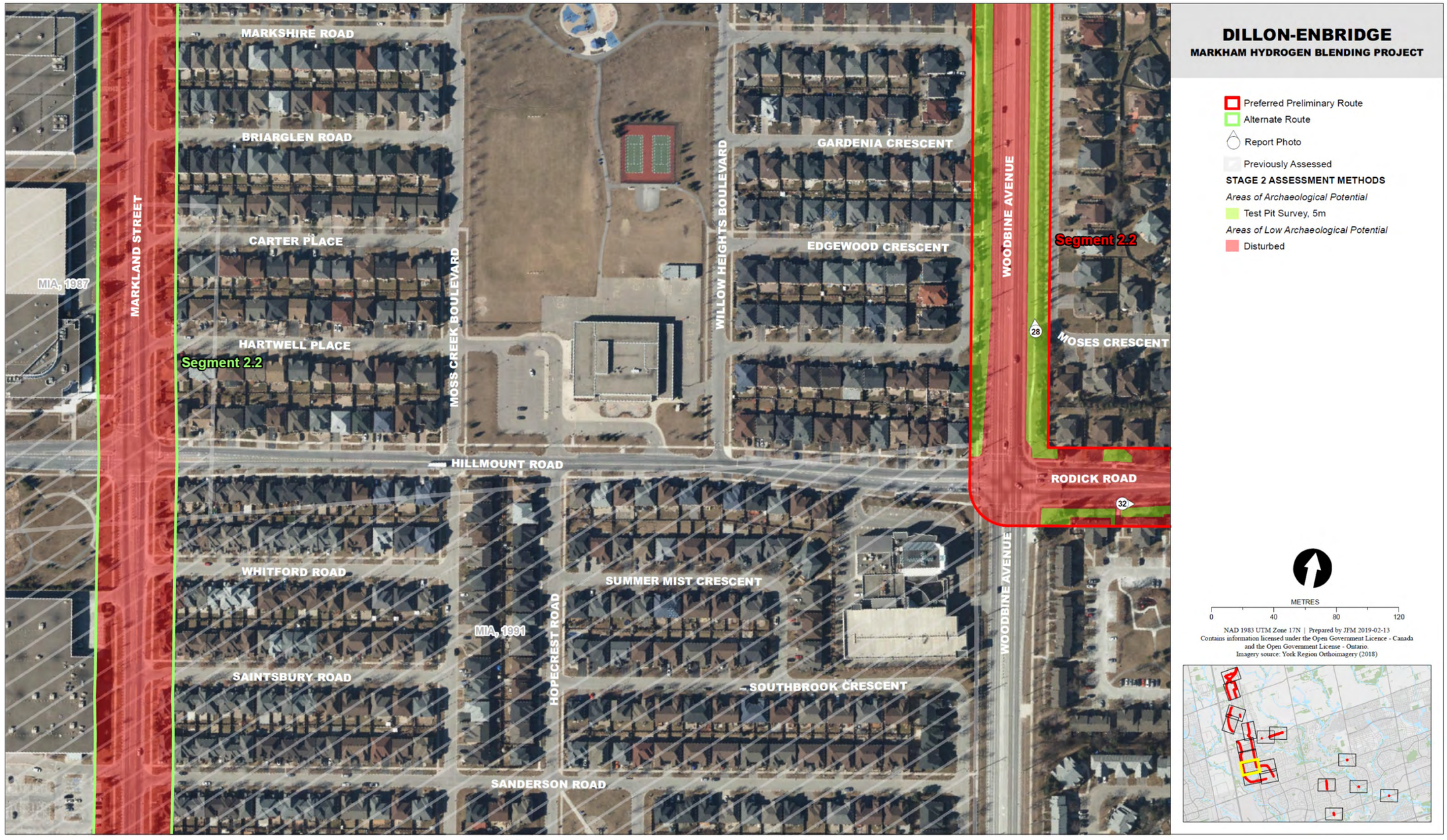
Map 27: Stage 1 Areas of Archaeological Potential – Section 3



Map 28: Stage 1 Areas of Archaeological Potential – Section 4



Map 29: Stage 1 Areas of Archaeological Potential – Section 5



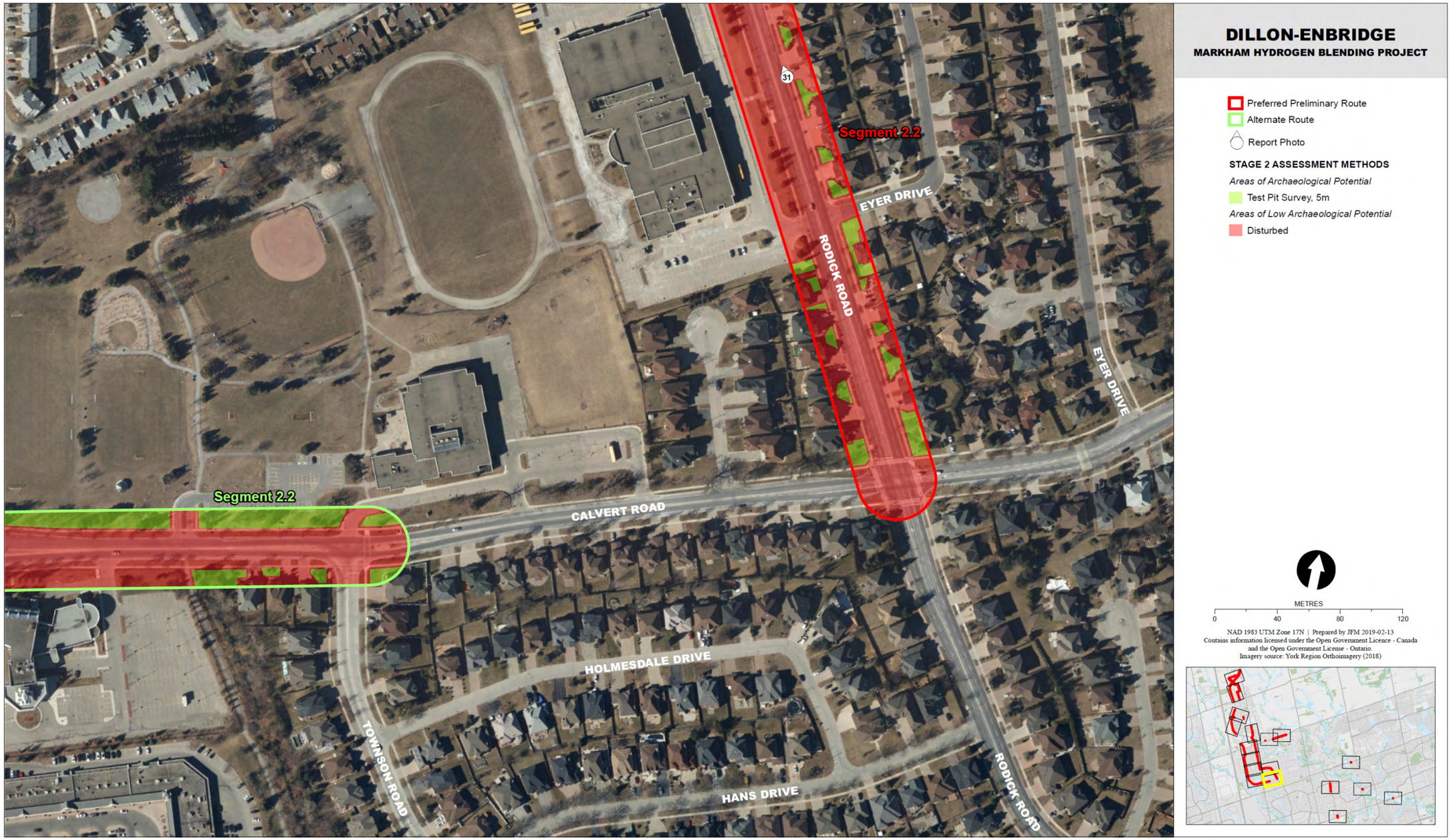
Map 30: Stage 1 Areas of Archaeological Potential – Section 6



Map 31: Stage 1 Areas of Archaeological Potential – Section 7



Map 32: Stage 1 Areas of Archaeological Potential – Section 8



Map 33: Stage 1 Areas of Archaeological Potential – Section 9



Map 34: Stage 1 Areas of Archaeological Potential – Section 10



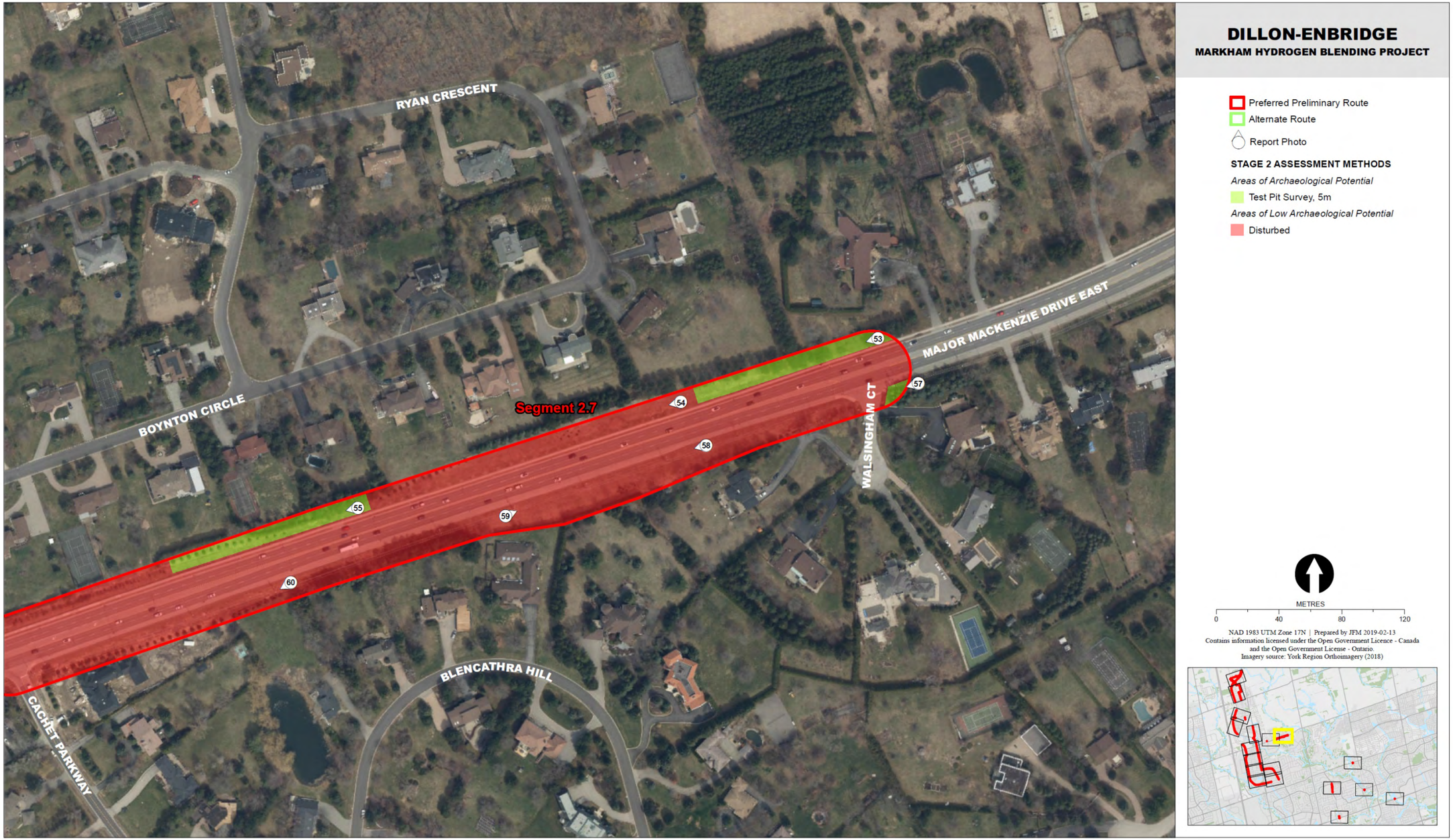
Map 35: Stage 1 Areas of Archaeological Potential – Section 11



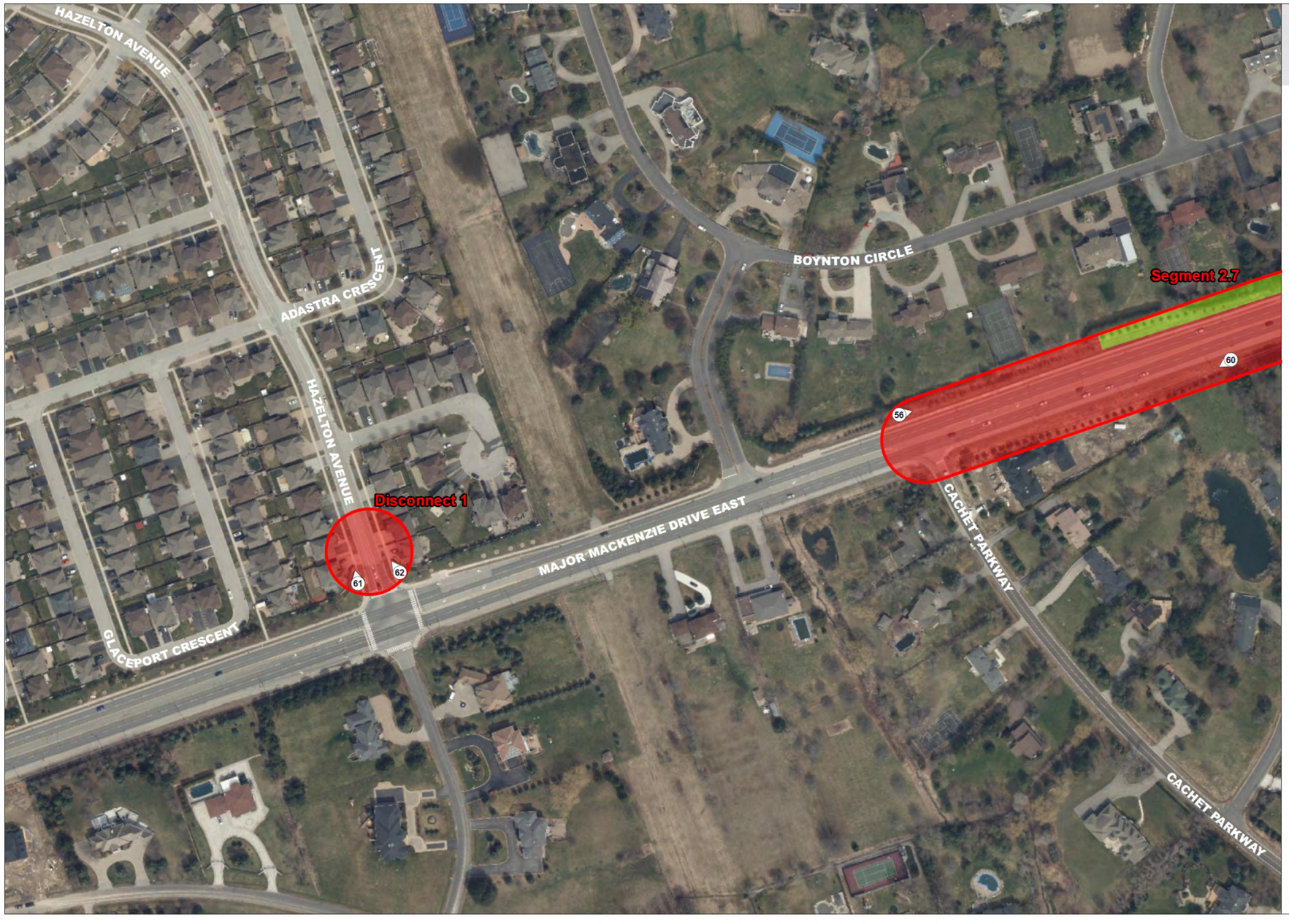
Map 36: Stage 1 Areas of Archaeological Potential – Section 12



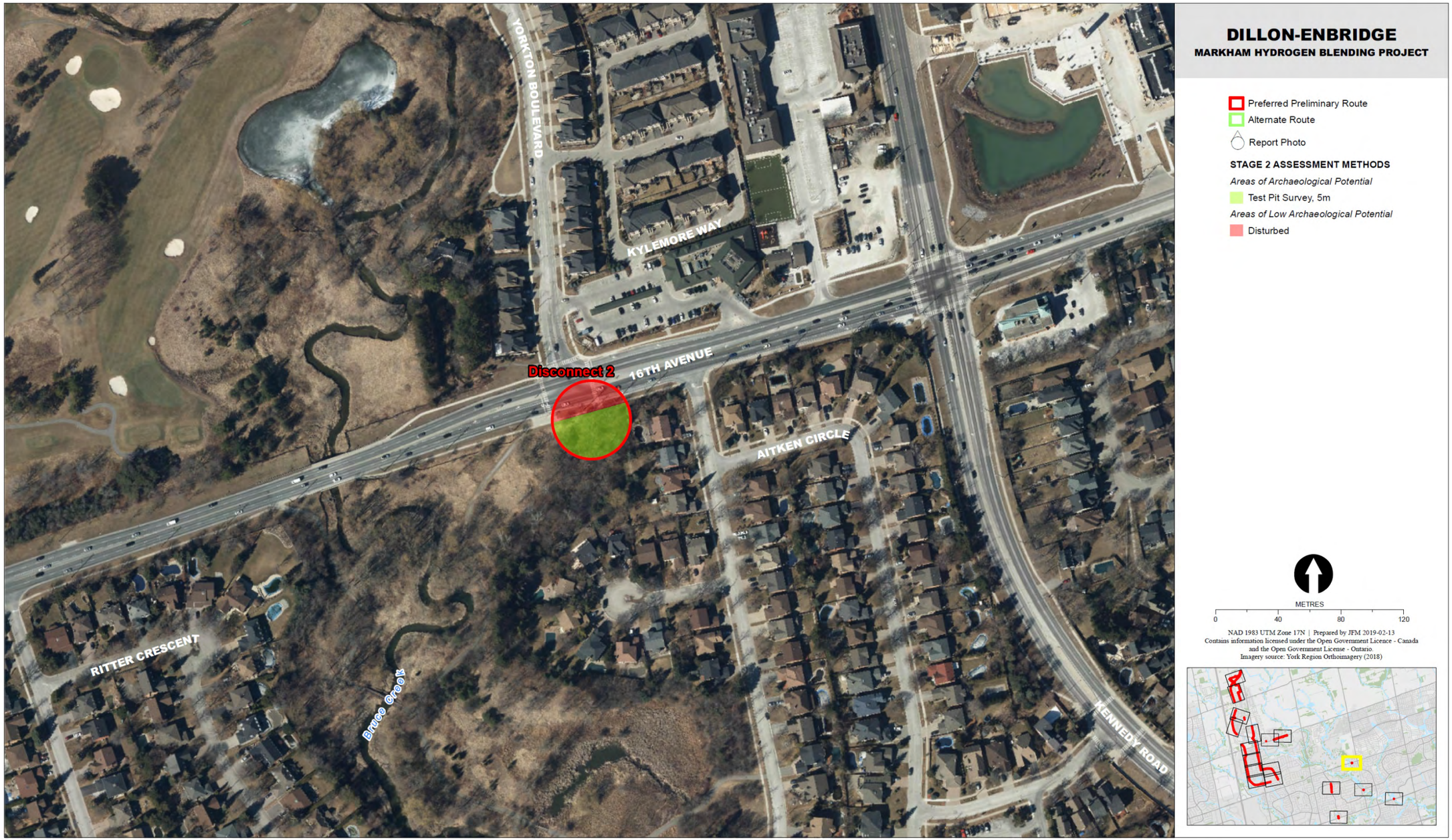
Map 37: Stage 1 Areas of Archaeological Potential – Section 13



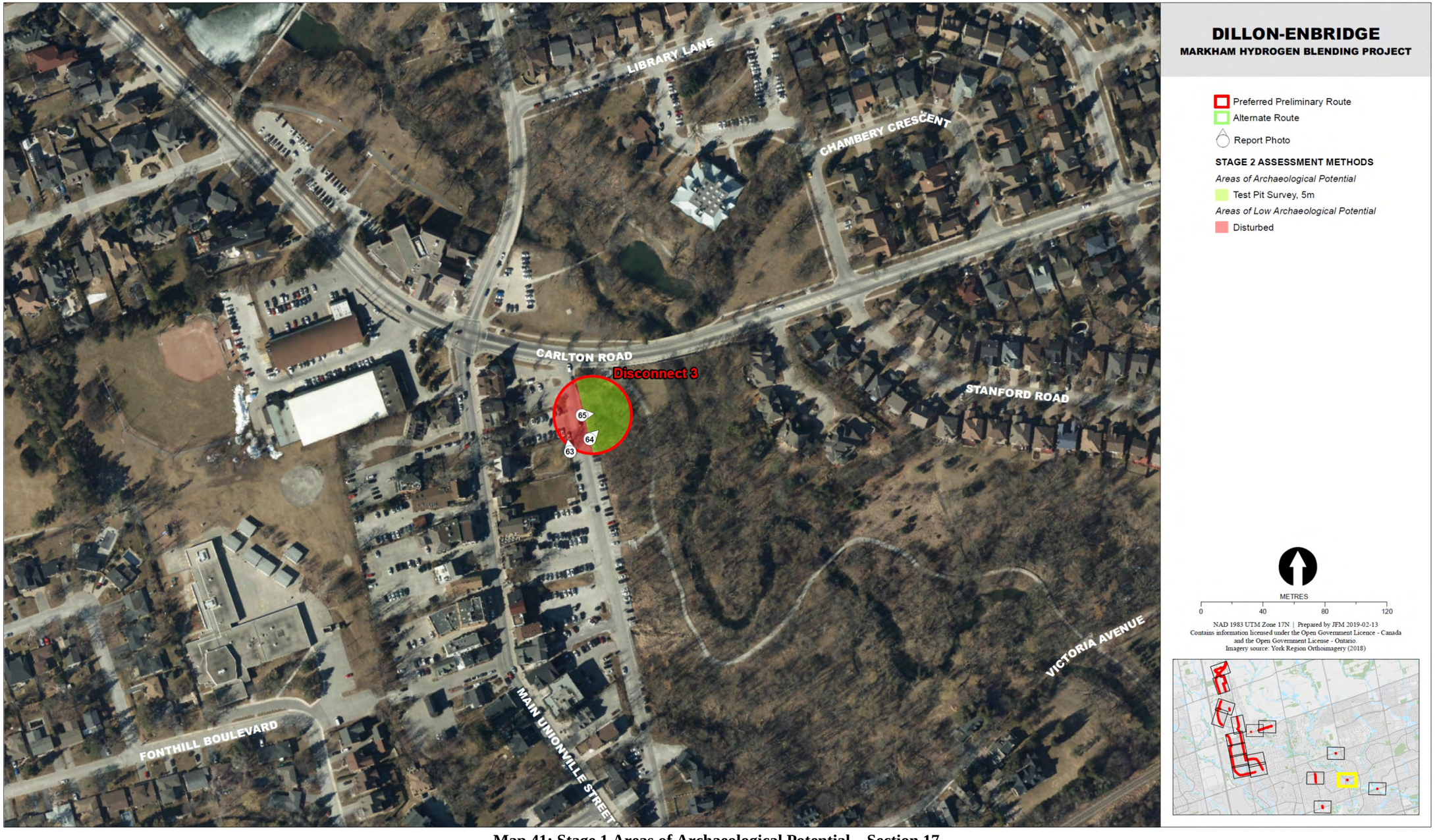
Map 38: Stage 1 Areas of Archaeological Potential – Section 14



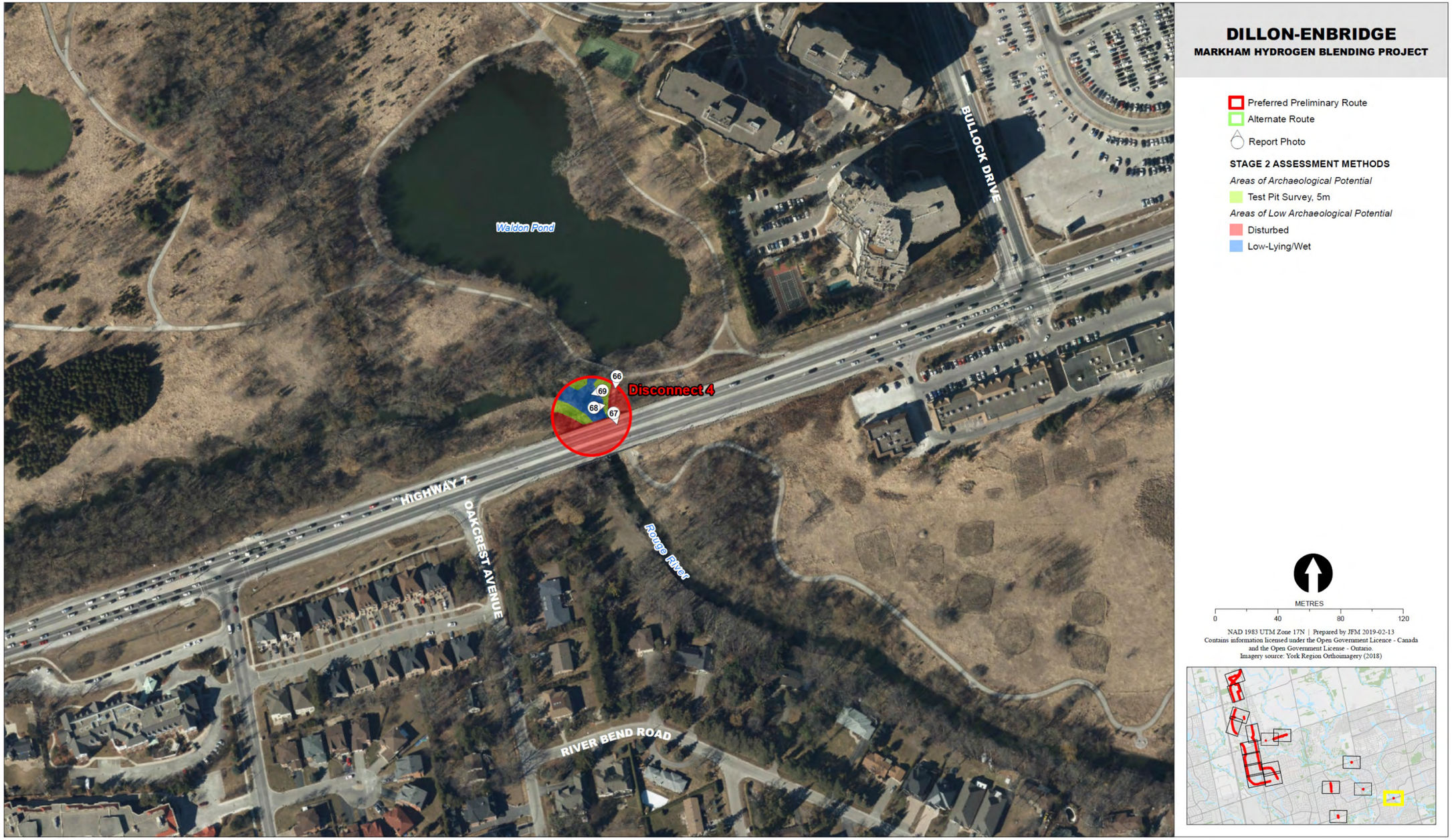
Map 39: Stage 1 Areas of Archaeological Potential – Section 15



Map 40: Stage 1 Areas of Archaeological Potential – Section 16



Map 41: Stage 1 Areas of Archaeological Potential – Section 17



Map 42: Stage 1 Areas of Archaeological Potential – Section 18

ATTACHMENTS
(6 – HFN)

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

[redacted] <[redacted]@enbridge.com> Fri, Mar 8, 2019 at 3:22 PM
To: "[redacted] ([redacted]@hiawathafn.ca)" <[redacted]@hiawathafn.ca>
Cc: "[redacted] (ENERGY) ([redacted]@ontario.ca)" <[redacted]@ontario.ca>

Hi [redacted]

It was great catching up with you a few weeks ago at the Historical Gathering.

I'm emailing to provide some advance materials about our proposed Power to Gas Pipeline Project in the City of Markham. Please find attached the Project Notification letter, Notice of Commencement, map of the proposed location and a copy of the Duty to Consult letter issued by the Ministry of Energy, Northern Development & Mines for your information and reference.

Please don't hesitate to contact me with any questions you may have regarding the proposed project.

I look forward to connecting with you soon.

Regards,

[redacted]

[redacted]
Sr. Advisor, Community Engagement, Eastern Region

Public Affairs and Communications

—

ENBRIDGE PIPELINES INC.
TEL: 416-753-6962 | CELL: 416-525-2497
2225 Sheppard Avenue East, Atria III, 17th Floor

North York, ON M2J 5C2

enbridge.com

Integrity. Safety. Respect.

4 attachments

Alderville FN Notification Letter_March 8.pdf
394K

EGI-LCEP-NOC_Mar-2019_Admail.pdf
543K

Fig1_ProjectLayout_Feb21.pdf
12427K

Power to Gas Delegation Letter.pdf
1560K

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

[redacted] <[redacted]@enbridge.com> Fri, Mar 8, 2019 at 3:28 PM
To: "[redacted] ([redacted]@hiawathafn.ca)" <[redacted]@hiawathafn.ca>
Cc: "[redacted] (ENERGY) ([redacted]@ontario.ca)" <[redacted]@ontario.ca>

Oops! My apologies Tom, I sent you Alderville's notification letter addressed to Skye. So about that!

Have a great weekend.
[redacted]

[Quoted text hidden]

Hiawatha FN Notification Letter_March 8.pdf
394K

March 8, 2019

[redacted] Community Consultation
Hiawatha First Nation
123 Paudash Street
Hiawatha, ON K9J 0E6

RE: Enbridge Gas Inc. Low-Carbon Energy Project City of Markham, Ontario
Notice of Project

Dear [redacted]

Enbridge Gas Inc. (Enbridge) has retained Dillon Consulting Limited (Dillon) to undertake an environmental and cumulative effects assessment and route selection study for approximately 6.8 kilometers (km) of natural gas pipeline and associated facilities in Markham, Ontario. The project objective is to create a network supplying blended natural gas with a small amount of hydrogen gas within Enbridge's existing natural gas pipeline infrastructure (the Project). The study is being conducted in accordance with the Ontario Energy Board's (OEB) *Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition, August 2016*. Once the study is complete, Enbridge may apply to the OEB for approval to construct the new pipeline. If approved, construction would be completed in two phases in 2020 and 2021.

Enbridge has an operating electrolyzer at its Training and Operations Centre located at 101 Honda Boulevard in Markham, Ontario. The electrolyzer converts surplus electricity into hydrogen gas and oxygen. The hydrogen gas can have multiple uses. Enbridge is proposing to blend a low concentration of hydrogen (up to 2% by volume) into an isolated area of the gas distribution network in an effort to reduce greenhouse emissions. This blended gas will remain within Enbridge's natural gas specifications. It can be utilized in the same way traditional natural gas is used, for example, to heat homes and water. As is the case with any other project, Enbridge will take all necessary measures to ensure that the safety of the gas distribution system is maintained at all times.

A Preliminary Preferred Route (PPR) for the proposed natural gas pipeline has been identified. The PPR follows portions of Woodbine Ave., as well as existing residential roads located in subdivisions, generally located south of Honda Blvd. and north of Highway 7 in the City of Markham. Phase 1 of the Project includes the installation of approximately 1 km of nominal pipe size (NPS) 6-inch steel Extra High Pressure (XHP) natural gas pipe, 250 m of NPS 6-inch steel High Pressure (HP) pipe and 75 m of NPS 8-inch Intermediate Pressure (IP) polyethylene (PE) natural gas pipeline. Phase 2 of

Continued . . .

DILLON CONSULTING

51 Breithaupt Street
Suite 200
Kitchener, Ontario
Canada
N2H 5G5
Telephone
519.571.9833
Fax
519.571.7424

Dillon Consulting Limited

the Project is comprised of multiple segments of pipeline which will convey blended hydrogen and natural gas, and includes the installation of 1.2 km of NPS 8-inch IP PE pipe, 2.9 km of NPS 8-inch and NPS 6-inch IP PE pipe, 350 m of NPS 6-inch IP PE pipe, 60 m of NPS 6-inch IP PE pipe, 10 m of NPS 4-inch IP PE pipe, 350 m of NPS 4-inch IP PE pipe, and 600 m of NPS 2-inch IP PE pipe. An alternative route is also being considered as part of the study, and is located in the same general area as the PPR. Locations requiring both temporary and permanent disconnection points of gas pipelines have been identified as well for both routes. A map showing both the PPR and alternative pipeline route is enclosed (**Figure 1**).

In order to undertake a successful consultation program, Indigenous engagement will play a key role in the Project. As noted in the attached Notice of Study Commencement, Enbridge will be hosting Open House meetings as part of the study.

As part of the initial phase of the study, we are collecting information on the natural environment, archaeological features and socio-economic features for both the PPR and alternative route described above. Examples of data being collected include information on terrestrial and aquatic vegetation and wildlife, archaeological and heritage resources, community parks and picnic areas, community facilities, nature trails, bus routes and other utilities such as water, sewage, industrial and commercial utilities.

Enbridge is committed to meaningful engagement with Indigenous groups and the satisfaction of the duty to consult. Enbridge looks forward to engaging with your Nation to ensure your community's interests are being represented. Your Nation is invited to provide comments regarding the proposed project. Specifically, Enbridge is seeking information about any potential impacts that the project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts.

We invite your community to be involved in the engagement and consultation process. Kindly indicate whether your community is interested in participating in the engagement activities on or before **March 31, 2019.** If you are unable to respond by the above date and are intending to do so, please provide an alternative date for when the Project Team may expect a response.

Enbridge would also be interested in meeting with your Nation to share project related information should you wish. Alternatively, please advise if you do not wish to meet individually but would prefer to be kept informed of the project.

On behalf of the Project Team, thank you in advance for your consideration regarding the initial phases of the project. Please do not hesitate to contact me with any questions you may have.

Continued . . .

Sincerely,



Sr. Advisor, Community Engagement
Enbridge Gas Inc.
O: 416-753-6962
C: 416-525-2497
[redacted]@enbridge.com

Encls. Notice of Study Commencement and Open House
Figure 1 – Project Layout and Location
MOENDM Delegation Letter

PROPOSED ENBRIDGE LOW-CARBON ENERGY PROJECT
NOTICE OF STUDY COMMENCEMENT AND OPEN HOUSE
CITY OF MARKHAM, ONTARIO
ENBRIDGE GAS INC.

The Study

Enbridge Gas Inc. (Enbridge) has retained Dillon Consulting Limited (Dillon) to begin an environmental and route selection study for approximately 6.8 kilometers (km) of natural gas pipeline and associated facilities. The objective of the project is to blend a small amount of hydrogen gas into our existing natural gas network, to reduce greenhouse gas emissions. Enbridge operates a facility which converts surplus electrical energy to hydrogen gas, which would be injected into the existing natural gas network. The blended gas would be distributed within the area outlined on the map below. Once the study is complete, Enbridge may apply to the Ontario Energy Board (OEB) for approval to construct the new pipeline. If approved, construction may begin in 2020.

The preferred route for Phase 1 of the project would involve the installation of approximately 1,325 m of 6-inch and 8-inch pipe primarily along Woodbine Ave. and Honda Blvd., ending at Enbridge's Technology and Operations Centre. Phase 2 of the project would involve multiple pipeline segments of various lengths and sizes ranging from 2-inch to 8-inch pipe along Victoria Square Blvd., Woodbine Ave., Rodick Rd., Prince Regent St., Major Mackenzie Dr. E, Village Pkwy., Elgin Mills, Honda Blvd., and Victoria Square Blvd.

An alternative route is also being considered as part of the study. The alternative route for Phase 1 of the project would involve the installation of 450 m of 6-inch pipe along Victoria Square Blvd. and an unnamed street. Phase 2 of the project will involve multiple pipeline segments of various lengths and sizes ranging from 6-inch to 8-inch pipe along Honda Blvd., Bishop's Gate, Livante Ct., Helford St., Prince of Wales Dr., Duke of York St., Woodbine Ave., Betty Roman Blvd., Markland St., and Calvert Rd. The preliminary preferred and alternative routes are identified on the map below.

The Process

The study is being conducted in accordance with the OEB's Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario. The study will review the need and justification for the pipeline, describe the natural and socio-economic environment, evaluate the potential facilities from a social and environmental perspective, outline safety measures, and describe appropriate measures for impact mitigation and monitoring.

Invitation to the Community

Stakeholder consultation is a key component of this study. Members of the general public, agencies, Indigenous communities and interest group representatives are invited to participate in the study. We will be hosting Open Houses to provide you with an opportunity to review the project and provide input. Details on the Open Houses are as follows:

Location: Monte Carlo Inn (8990 Woodbine Ave., Markham)
Date: March 19, 2019 (Tuesday)
Time: 5 PM to 8 PM

Location: Enbridge Technology & Operations Centre
(101 Honda Blvd., Markham)
Date: March 23, 2019 (Saturday)
Time: 9 AM to 12 PM
Free pancake breakfast will be served!

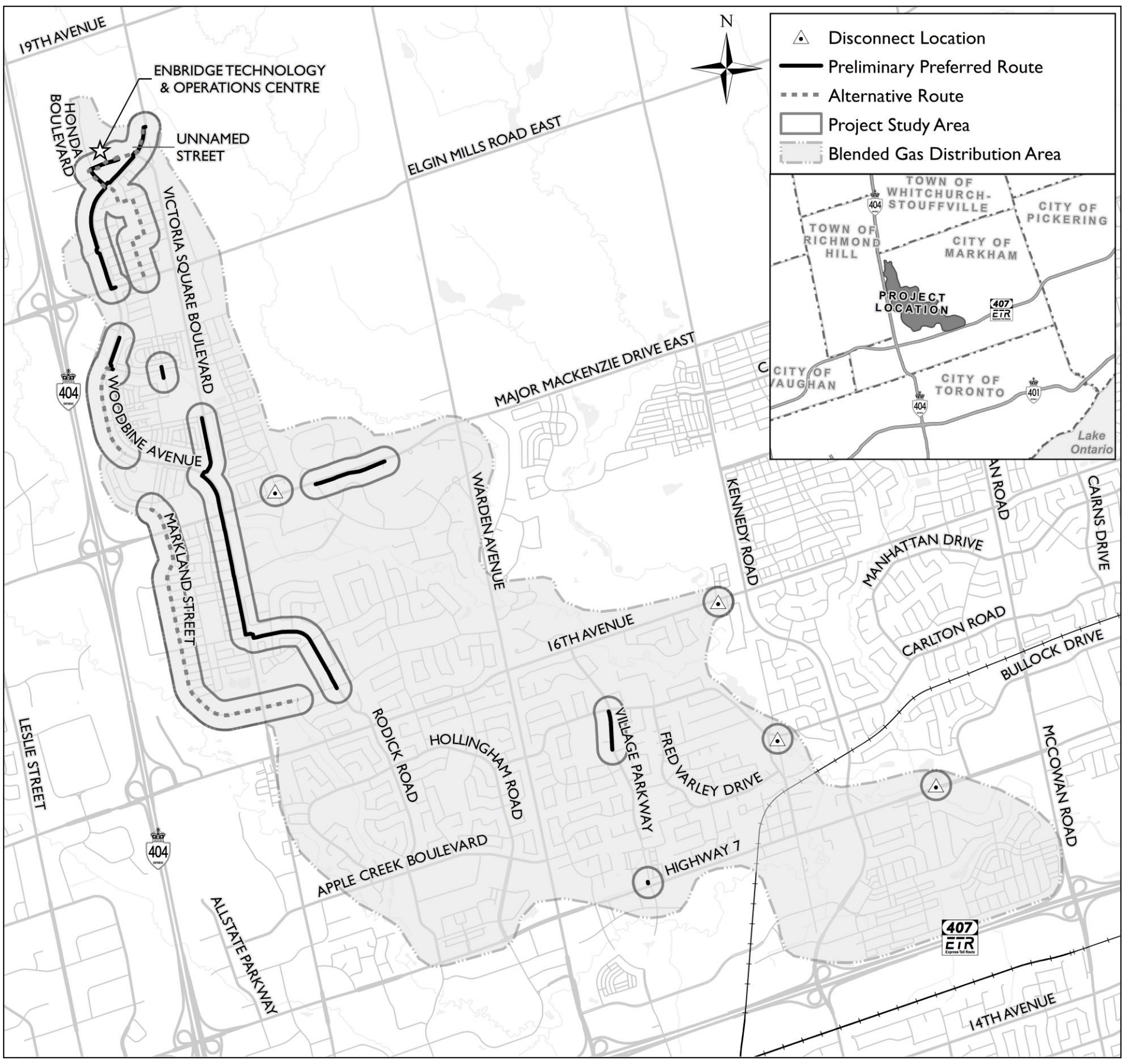
Win an Ecobee (valued at $300)

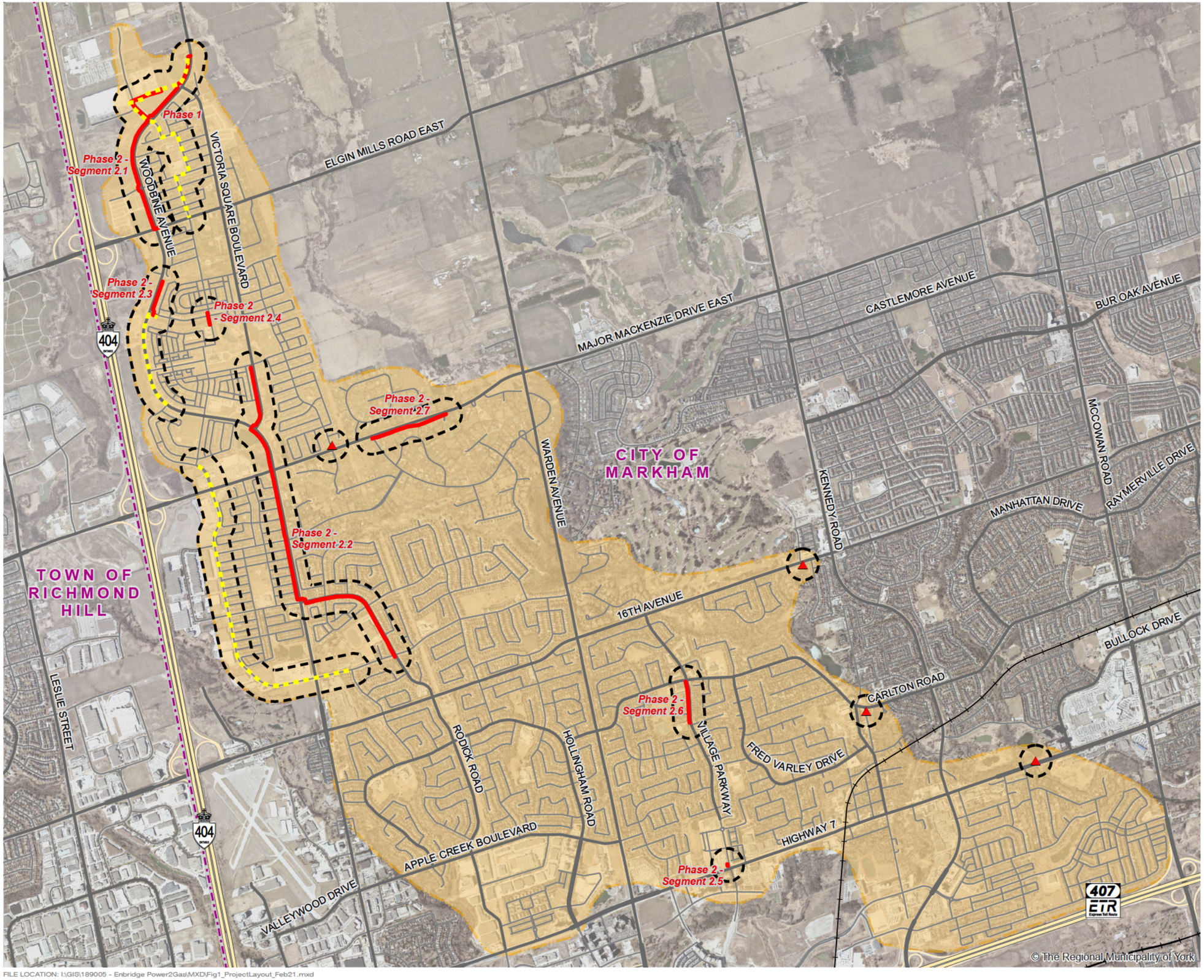
Enter for a chance to win an Ecobee smart thermostat at one of the Open Houses.

Representatives from Enbridge and Dillon will be in attendance to discuss the project and answer questions. Your input will be used to confirm the preferred route and create mitigation plans to be implemented during construction. If you are interested in participating, or would like to provide comments, please come to one of the Open Houses or contact one of the individuals listed as soon as possible. For more information about the proposed project and hydrogen blending, please visit http://enbridgegas.com/LowCarbonEnergyProject.

Tanya Turk
Sr Environmental Advisor
Enbridge Gas Inc.
101 Honda Blvd., Markham, ON L6C 0M6
(416) 495-3103
tanya.turk@enbridge.com

Tristan Lefler
Environmental Assessment Project Manager
Dillon Consulting Limited
51 Breithaupt St., Suite 200, Kitchener, ON
N2H 5G5
(519) 571-9833
LowCarbonEnergyEA@dillon.ca





ENBRIDGE

ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

PROJECT LAYOUT

FIGURE 1

- Disconnect Location
- Preliminary Preferred Route
- Alternative Route
- Rail
- Project Study Area
- Blended Gas Distribution Area
- Municipal Boundary



0 125 250 500 m

SCALE 1:28,000

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: NT / TL
MAP PROJECTION: NAD 1983 UTM Zone 17N

DILLON CONSULTING

PROJECT: 18-9005

DATE: 2019-02-21

FILE LOCATION: I:\GIS\189005 - Enbridge Power2Gas\MXD\Fig1_ProjectLayout_Feb21.mxd

Ministry of Energy, Northern Development and Mines

77 Grenville Street
6th Floor
Toronto ON M7A 2C1

Tel: (416) 314-2599

Ministère de l'Énergie, Développement du Nord et Mines

77 rue Grenville
6e étage
Toronto ON M7A 2C1

Tél: (416) 314-2599

Ontario

Indigenous Energy Policy

VIA EMAIL

March 1, 2019

[redacted]
Technical Manager, Regulatory Applications
Enbridge Gas Distribution Inc.
500 Consumers Road
North York, Ontario M2J 1P8

Re: Power to Gas Pipeline Project

Dear [redacted]

Thank you for your email dated January 4, 2019 notifying the Ministry of Energy, Northern Development and Mines of Enbridge's proposal for the Power to Gas Pipeline Project and requesting clarification on Duty to Consult requirements.

We understand that Enbridge is proposing to construct approximately 6.8 kilometers of natural gas pipeline in the City of Markham to isolate a small portion of Enbridge's existing distribution system to ensure that only blended natural gas is utilized in that isolated section. The project is associated with Enbridge's operating electrolyzer at its Training and Operations Center at 101 Honda Boulevard in Markham. The project, as outlined in the project description from Enbridge, consists of two phases with varying diameter and length of pipeline.

Phase 1 of the project consists of approximately 750 meters of NPS 6 steel extra high-pressure natural gas pipeline. The expected route will begin approximately 40 meters south of 11182 Woodbine Avenue in Markham, that will travel south on Woodbine Avenue and turn west onto Honda Boulevard. The pipeline will terminate at the Training and Operating Centre. Phase 2 will require the construction of multiple segments of varying diameter and length of pipeline. These segments will be required to provide system support when the project is isolated from the rest of the distribution system. Phase 2 will originate at the Training and Operating Centre and terminate at Major Mackenzie Drive.

The Ministry has reviewed the information provided relative to its current understanding of the interests of First Nation and Métis communities in the area and has determined that it may have the potential to affect First Nation and Métis communities who hold or claim Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982.

As you are aware, the Government of Ontario (the "Crown") has a constitutional duty to consult and accommodate First Nation and Métis communities when Crown project approvals may lead to an appreciable adverse impact on established or asserted Aboriginal or treaty rights. While the legal duty to consult falls on the Crown, the Crown may delegate the day-to-day, procedural aspects of consultation to project proponents. The Ministry of the Energy, Northern Development and Mines is delegating the procedural aspects of consultation to Enbridge through this letter.

Based on the Crown's preliminary assessment of First Nation and Métis community rights and project impacts, the following Aboriginal communities should be consulted on the basis that they have or may have constitutionally protected Aboriginal or treaty rights that may be adversely affected by the Project:

Community	**Mailing Address**
Alderville First Nation	11696 Line Road 2 Roseneath, ON K0K 2X0
Curve Lake First Nation	22 Winookeedaa Road Curve Lake, ON K0L1R0
Hiawatha First Nation	123 Paudash Street Hiawatha, ON K9J 0E6
Huron Wendat First Nation *	255, place Chef Michel Laveau Wendake, QC G0A 4V0
Mississaugas of the Credit First Nation	2789 Mississauga Road R.R. #6 Hagersville, ON N0A 1H0
Mississaugas of Scugog Island First Nation	Administration Building 22521 Island Road Port Perry, ON L9L 1B6

Note: * interests are specific to archeological resources

This rights-based consultation list is based on information that is subject to change. First Nation and Métis communities may make new rights assertions at any time, and other developments (e.g. the discovery of Aboriginal archaeological sites) can occur that may require additional First Nation and/or Métis communities to be notified and/or consulted. If you become aware of potential rights impacts on communities that are not listed above at any stage of the consultation and approval process, kindly bring this to the attention of the Ministry with any supporting information regarding the claim. The Ministry will then assess whether it is necessary to include the community on the rights-based consultation list above.

It is the Ministry's expectation that Enbridge will communicate directly with the communities listed above, and that Enbridge will:

- Notify the communities that Enbridge has been delegated the procedural aspects of consultation by the Ministry of Energy, Northern Development and Mines on behalf of Ontario.
- Notify the communities that they may contact the Crown directly should they have any questions or concerns.
- Provide the communities with the following contact information should they wish to communicate directly with the Ministry:

  Raina Crasto
  Policy Advisor, Indigenous Energy Policy
  Ministry of Energy, Northern Development and Mines
  416-326-4571 / Raina.crasto@ontario.ca

- Please copy the Ministry contact when communicating the above information.

The Ministry relies on consultation conducted by proponents when it assesses the Crown's obligations and directs proponents during the regulatory process. Enbridge's responsibilities for procedural aspects of consultation include:

- Providing the Indigenous communities with timely notice of the project for the purposes of considering possible impacts on their Aboriginal and/or treaty rights;

- In that notice, clearly stating that Enbridge has been delegated the procedural aspects of consultation by the Ministry of Energy, Northern Development and Mines on behalf of Ontario for the project.

- Providing Indigenous communities with information about the project including anticipated impacts, and information on project timelines;

- Following up with the Indigenous communities to ensure they have received project information and that they are aware of the opportunity to express comments and concerns about the project;

- Explaining the regulatory and approval processes that apply to the project;

- Gathering information about how the project may adversely impact the relevant Aboriginal and/or treaty rights (for example, hunting, fishing) or sites of cultural significance (for example, burial grounds, archaeological sites);

- Considering the comments and concerns raised by Indigenous communities and providing responses;

- Where appropriate, discussing accommodation, including mitigation or other measures to address potential adverse impacts on Aboriginal and/or treaty rights;

- Where appropriate, developing and discussing with the Crown appropriate accommodation measures;
- Taking reasonable steps to foster positive relationships with the Indigenous communities;
- Bearing the reasonable costs associated with these procedural aspects of consultation; and
- Maintaining records of activities in relation to carrying out the delegated procedural aspects of consultation and providing information to the Ministry.

If you have any questions about this letter or require any additional information, please contact Raina Crasto at 416-326-4571 or Raina.crasto@ontario.ca

Sincerely,

[redacted]

A/Manager
Indigenous Energy Policy

C: Ontario Pipeline Coordinating Committee (OPCC)

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

1 message

[redacted] <[redacted]@enbridge.com> Wed, Jul 3, 2019 at 5:54 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted]
Sent: Wednesday, July 03, 2019 5:50 PM
To: [redacted] ([redacted]@hiawathafn.ca)
Subject: Enbridge Gas Inc. proposed Power to Gas Pipeline Project - City of Markham

Hi [redacted]

How are you? I hope you are doing well. I just wanted to provide you with an update regarding the proposed Power to Gas Project. We discussed this project awhile back over a lunch meeting. It's the one where we are planning to inject up to 2% of hydrogen in the system and blend it with the existing natural gas to help offset the energy we use with green energy.

I wanted to share with you the attached open house invitation, in both English and Mandarin, that was distributed to roughly 33,000 homes and businesses that live in the Project area (City of Markham). We'll also be running the invitation as an ad in the Markham Economist and Sun (July 4), and the Ming Pao (July 6). If you have any questions about the Project, or the Information Session, please don't hesitate to reach out to me. If you plan to attend on Tuesday, July 9, please let me know. It would be great to see you as always.

On a separate note, per your availability I was wondering if we can meet sometime next week as I'd like to share the draft poster boards we plan to use at the upcoming open house on July 24th regarding the proposed system expansion project. I'll give you a call tomorrow!

Talk soon!

[redacted]

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

Integrity. Safety. Respect.

July 2019 OpenHouse_v04.pdf
555K

You're Invited to an Information Session

Please join us for another information session about the proposed Low-Carbon Energy Project in Markham. Learn about hydrogen blending, why Enbridge Gas supports this technology, why it's good for our customers, and good for the environment.

Enbridge Gas is proposing a project to blend a small amount of hydrogen gas into our existing natural gas network, to reduce greenhouse gas emissions. Enbridge Gas operates a facility which converts electrical energy to hydrogen gas, which would be injected into the existing natural gas network if the project is approved.

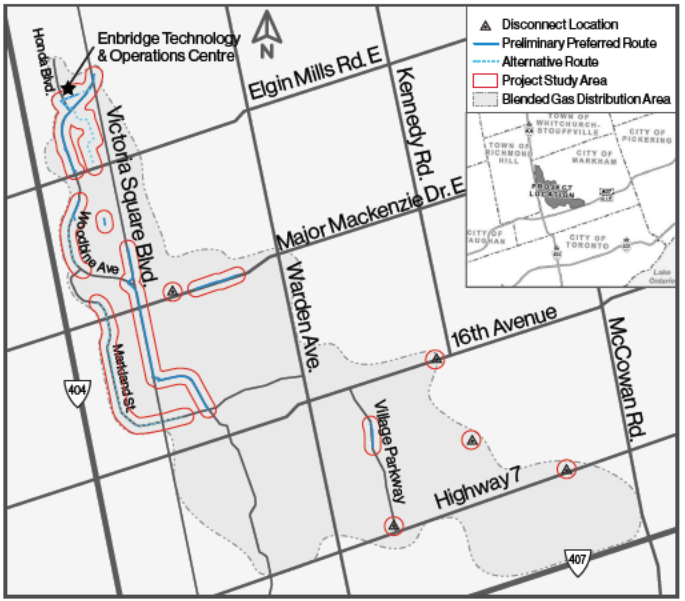
The blended gas would be distributed within the shaded area outlined on the map. As part of the project, Enbridge Gas would be installing approximately 1.3 km of pipe in phase one and approximately 5.5 km of pipe in phase two.

Hydrogen Blending Information Session

Date: Tuesday, July 9, 2019
Time: Drop in from 5-7 p.m.
Location: Enbridge Technology and Operations Centre
101 Honda Blvd, Markham, Ontario

For more information about the proposed project and hydrogen blending, please visit: **http://enbridgegas.com/LowCarbonEnergyProject**.

If you have any questions, please submit them to **LowCarbonEnergyEA@dillon.ca**.



Please visit us online:

enbridgegas.com **@enbridgegas**

If you have a natural gas emergency, please call: **1-866-763-5427**



ENBRIDGE
Life Takes Energy®

邀请您参加宣讲会

关于提案的万锦市低碳能源项目，我们将再次举办宣讲会，敬请参加。 了解氢气混合技术、为什么 Enbridge Gas 支持这种技术、为什么它对我们的顾客有好处、以及为什么它对环境有好处。

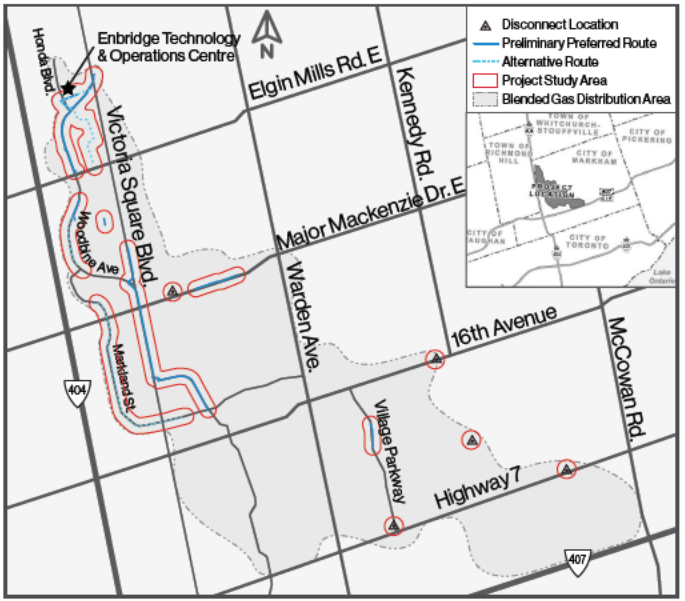
Enbridge Gas 提案了一个项目，将少量氢气混入我们的现有天然气管网，以减少温室气体排放。如果该项目得到批准，Enbridge Gas 有设施将电力转换为氢气，再将氢气注入现有天然气管网。

混合气体将在地图上所示区域内输配。作为该项目的一部分，Enbridge Gas 将在项目一期铺设约1.3公里的管道，项目二期铺设约5.5公里的管道。

氢气混合宣讲会

日期： 2019 年7月9日星期二
时间： 下午5点至7点间欢迎光临
地点： Enbridge Technology and Operations Centre
101 Honda Blvd, Markham, Ontario

请浏览 **http://enbridgegas.com/LowCarbonEnergyProject**，了解提案项目和氢气混合的更多信息。如果您有任何疑问，请将您的疑问提交至 **LowCarbonEnergyEA@dillon.ca**。



请访问我们的社交媒体：

enbridgegas.com **@enbridgegas**

如果您有天然气紧急情况，请致电 **1-866-763-5427**



ENBRIDGE
Life Takes Energy®

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Power to Gas Stage 2 Surveys

1 message

[redacted] <[redacted]@enbridge.com> Wed, Aug 28, 2019 at 11:49 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

-----Original Message-----
From: [redacted] [mailto:[redacted]@hiawathafn.ca]
Sent: Friday, August 16, 2019 9:07 AM
To: [redacted]
Subject: [External] RE: Power to Gas Stage 2 Surveys

EXTERNAL: PLEASE PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe.

Aaniin [redacted]

I can not answer if I will have a monitor for this project until I have a better picture of the timelines involved.

Mno nendam ghiizhigad,

[redacted]
Lands/Resources Consultation

Hiawatha First Nation
123 Paudash Street
Hiawatha, ON K9J 0E6
705-295-7773
705-295-7131 (fax)
[redacted]@hiawathafn.ca

"We, the Mississaugi of Hiawatha First Nation, are a vibrant, proud, independent and healthy people balanced in the richness of our Culture and Traditional way of life"

Wisdom/Nbwaakaawin Love/Zaagidiwin Respect/Mnaadendamowin Bravery/Aakdehewin Honesty/Gwekwaaziwin Humility/Dbadendizwin Truth/Debwewin

-----Original Message-----
From: [redacted] <[redacted]@enbridge.com>
Sent: Thursday, August 15, 2019 5:53 AM
To: [redacted] <[redacted]@hiawathafn.ca>
Subject: Power to Gas Stage 2 Surveys

> Hi [redacted]
>
> I hope you are doing well and enjoying the last bit of summer remaining. As a follow up to the Enbridge Power to Gas Project, I would like to provide you with some advance notice regarding the Stage 2 Archaeological assessment field work. Enbridge is planning to begin the field work sometime in the first half of September pending weather and successfully securing locates.
>
> I will be in touch a week prior to commencing the field work to confirm the details but in the meantime, can you please

let me know if you are planning to send a Hiawatha First Nation monitor ? I think it would be great to have a community member participate in the field work if possible.
>
> I look forward to hearing back from you at your earliest convenience.
>
> Miigwech,

> [redacted]
> Sr. Advisor, Municipal & Indigenous Affairs Enbridge Gas Inc

DILLON CONSULTING

Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Power to Gas Stage 2 Surveys

1 message

[redacted] <[redacted]@enbridge.com> Thu, Oct 3, 2019 at 1:16 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region
Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road
North York, ON M2J 1P8

enbridge.com
Integrity. Safety. Respect.

-----Original Message-----
From: [redacted] <[redacted]@enbridge.com>
Sent: Thursday, October 3, 2019 1:15 PM
To: [redacted] ([redacted]@hiawathafn.ca) <tcowie@hiawathafn.ca>
Subject: Power to Gas Stage 2 Surveys

[redacted]

I hope you are well! I wanted to provide you with some advance notice regarding the Power to Gas Project that's been recently brought to my attention by the project team. The project team has informed me that that Stage 2 archaeological assessment required for the Power to Gas Project is specific to phase 2 of the project that (as of recently) is now being deferred to next year. Based on the results of the Stage 1 AA that was already completed for both phases (one and two) of the project, a Stage 2 AA was not recommended for Phase 1 of the project but was recommended for Phase 2. Once we have project timelines established for phase 2 of the project, which will involve stage 2 AA work, I will be in touch with you again so we can ensure we have a representative from Hiawatha First Nation participate in the Stage 2 assessment.

I have also attached a copy of the Environmental Report for the Enbridge Low-Carbon Energy Project (also knows as the Power to Gas Project) - not sure why the project name changed??. As always, please don't hesitate to reach out with any questions you may have.

https://www.enbridgegas.com/-/media/Extranet-Pages/Projects-tab-links/Low-Carbon-Energy-Project/EGI_LCEP_Redacted_Secured_13-May-2019.ashx?la=en&hash=DBBBCDF7CF53E778FD5627D1858AA00610ED7DD1

Miigwech,
[redacted]

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497

500 Consumers Road
North York, ON M2J 1P8

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Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: Follow up

[redacted] <[redacted]@enbridge.com> Mon, Mar 9, 2020 at 1:12 PM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

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From: [redacted] <[redacted]@hiawathafn.ca>
Sent: Monday, March 9, 2020 8:57 AM
To: [redacted] <[redacted]@enbridge.com>
Subject: [External] RE: Follow up

EXTERNAL: PLEASE PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe.

Aaniin [redacted]

Unfortunately My calendar is wonky also. I have a all day meeting on the 16th and I will be in the hospital on the 20th.

Mno nendam ghiizhigad,

[redacted]

Lands/Resources Consultation

Hiawatha First Nation

123 Paudash Street

Hiawatha, ON K9J 0E6

705-295-7773

705-295-7131 (fax)

[redacted]@hiawathafn.ca

"We, the Mississaugi of Hiawatha First Nation, are a vibrant, proud, independent and healthy people balanced in the richness of our Culture and Traditional way of life"

Wisdom/Nbwaakaawin Love/Zaagidiwin Respect/Mnaadendamowin Bravery/Aakdehewin Honesty/Gwekwaaziwin Humility/Dbadendizwin Truth/Debwewin

---

From: [redacted] <[redacted]@enbridge.com>
Sent: Friday, March 6, 2020 2:07 PM
To: [redacted] <[redacted]@hiawathafn.ca>
Subject: Follow up

Aaniin [redacted]

I hope you are doing well! It's been awhile since we last connected and I was wondering if you were available to meet March 16th or March 20th to catch up!

My calendar is a little nutty as the dates in between the 16th and 20th I'm travelling and I'm in Kingston for the majority of next week.

I am planning to reach out to Chief Carr regarding setting up a follow up meeting to discuss the survey results regarding the natural gas system expansion project. I hope the results are favourable but either way, I will cc you on my email to the Chief.

I would also like to provide you with a few updates regarding the Power to Gas Project. Recall, this is the project taking place in Markham where we are blending Hydrogen (green gas) into the distribution system? There are no significant changes to the project apart from the project team deciding to go with the alternate route instead of the preferred route

and I wanted you to be aware of this project scope change. I've attached a copy of the Notice of Project Change and Draft Addendum to the Environmental Reports outlining the changes to the proposed project. I would like to offer capacity funding to help support document review. The good thing is the attached addendum to the environmental report is an easy read but it's still time consuming and I want to ensure Hiawatha First Nation has capacity funding for this.

On a separate note, I'm not sure if the timing might work, but it would also be great to grab lunch with Kim if she's available and/or interested? I look forward to hearing back from you when you have a moment. Have a great weekend!

Miigwech,

[redacted]

[redacted]
Sr. Advisor, Municipal and Indigenous Affairs, Eastern Region

Public Affairs and Communications

ENBRIDGE GAS INC.
TEL: 416-753-6962 | CELL: 416-525-2497
500 Consumers Road

North York, ON M2J 1P8

enbridge.com

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Enbridge
500 Consumers Road
North York, ON
M2J 1P8

March 6, 2020

[redacted]
Consultation Supervisor
Hiawatha First Nation
123 Paudash Avenue
Hiawatha, ON K9J 0E6

Re: Notice of Project Change and Draft Environmental Report Amendment- Low Carbon Energy Project (LCEP)

Dear [redacted]

I am writing to advise you of a project change and draft Environmental Report Amendment on the proposed 2019 Low Carbon Energy Project (LCEP) also known as the Power to Gas Project. Enbridge Gas Inc. (Enbridge) retained Dillon Consulting Limited (Dillon) to undertake an environmental and socio-economic effects assessment and amended report (Environmental Report) for the proposed Low Carbon Energy Project (the Project).

Enbridge filed a Leave-to-Construct (LTC) application with the Ontario Energy Board (OEB) on December 20, 2019. The application included the Environmental Report (completed in May 2019), as well as two Addendums. Addendum #1 was completed in September 2019 and addressed comments from the Toronto and Region Conservation Authority. Addendum #2 was completed in December 2019 and provided updated Project mapping depicting only Phase 1 of the Project, as Phase 2 was removed from the Project scope.

Since the completion of the Environmental Report and the Addendums, Enbridge has made changes to the scope of the Project that require additional study and review. As such, Dillon has prepared an Amendment to the Environmental Report (draft version enclosed), which documents the results of Dillon's review of Enbridge's proposed changes to the Project. **These proposed Project changes include: (1) the selection of the Phase 1 Alternative Route as the new Preferred Route; and, (2) the addition of three small facilities on Enbridge owned property into the Environmental Report scope.**

Hiawatha First Nation is invited to provide comments in relation to this Project change. Specifically, Enbridge and Dillion are seeking information about any adverse impacts that the proposed project change may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts. Please send any comments to the attention of the undersigned, or by email to LowCarbonEnergyEA@dillon.ca at your earliest convenience. If you require additional information, please do not hesitate to contact me. We would appreciate your shared knowledge or comments for consideration regarding this Project change by March 24, 2020.

If you have questions or concerns regarding the proposed Project change, please do not hesitate to contact me at any time. I appreciate your attention to this matter and look forward to our ongoing collaboration on this project.

Sincerely,

[redacted]

Sonia Fazari

Enclosures Amendment to the Environmental Report

PROPOSED ENBRIDGE LOW-CARBON ENERGY PROJECT

NOTICE OF PROJECT CHANGE

CITY OF MARKHAM, ONTARIO

ENBRIDGE GAS INC.

Last year, Enbridge Gas Inc. (Enbridge) retained Dillon Consulting Limited (Dillon) to undertake a route selection and environmental and socio-economic impact study and report (Environmental Report) for the proposed Low-Carbon Energy Project (the Project). The Environmental Report was completed according to the Ontario Energy Board (OEB) Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016). Following completion of the Environmental Report, Enbridge provided additional information regarding the Project in two Addendums. Addendum #1 was completed in September 2019 and addressed comments from the Toronto and Region Conservation Authority. Addendum #2 was completed in December 2019 and provided updated Project mapping depicting only Phase 1 of the Project, as Phase 2 was removed from the Project scope. Enbridge filed a Leave-to-Construct (LTC) application with the OEB on December 20, 2019.

Since the completion of the Environmental Report and the Addendums, Enbridge has made changes to the scope of the Project that require additional study and review. Dillon is preparing an Amendment to the Environmental Report (the Amendment) in consideration of Enbridge's proposed changes to the Project. These proposed Project changes include: (1) the selection of the Phase 1 Alternative Route as the Preferred Route; and, (2) the addition of three small facilities on Enbridge-owned property at 101 Honda Boulevard into the Environmental Report scope. The objective of the Amendment is to determine if there are any additional potential environmental or socio-economic impacts as a result of the proposed changes that were not captured in the assessment already completed in the Environmental Report.

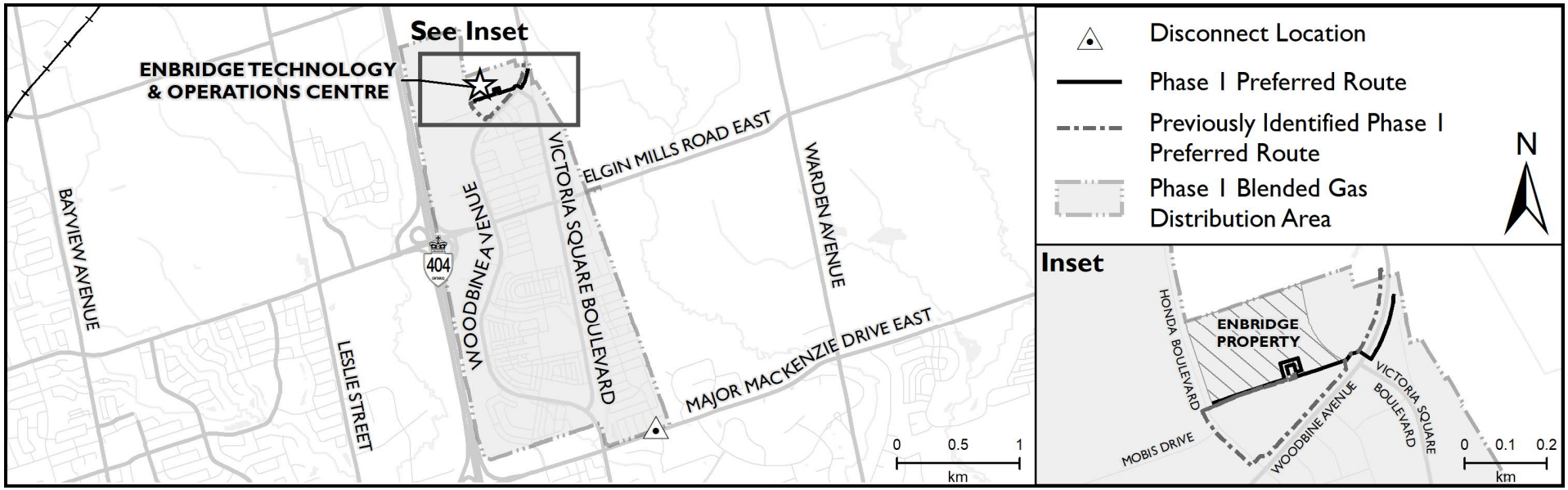
The Amendment to the Environmental Report is planned to be completed by March 31, 2020, after which Enbridge will file the Amendment with the OEB. The OEB's review and approval is required before the Project can proceed. If approved, construction of the Project is currently anticipated to begin by January 2021, at the earliest.

Stakeholder consultation and Indigenous engagement continue to be key components of the Project. We are interested in hearing from you regarding issues/concerns that you may have in relation to the proposed changes to this Project. Please provide feedback to the Project email at LowCarbonEnergyEA@dillon.ca or by contacting one of the individuals listed in this Notice by March 22, 2020.

Tanya Turk
Environmental Advisor
Enbridge Gas Inc.
101 Honda Boulevard
Markham, ON L6C 0M6
(416) 495-3103

Tristan Lefler
Environmental Assessment
Project Manager
Dillon Consulting Limited
51 Breithaupt Street, Suite 200
Kitchener, ON N2H 5G5
(519) 571-9833
LowCarbonEnergyEA@dillon.ca

Project website:
https://www.enbridgegas.com/about-us.
Click on the "Projects" tab and select "Low-Carbon Energy Project"



Enbridge Gas Inc.
Low-Carbon Energy Project
Environmental Report Amendment

Prepared for:

Enbridge Gas Inc.
101 Honda Blvd.
Markham, Ontario
L6C 0M6

Prepared by:

Dillon Consulting Limited
235 Yorkland Blvd., Suite 800
Toronto, Ontario
M2J 4Y8

February 2020



DRAFT

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A Consultation Update – Summary and Logs

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LIST OF ACRONYMS AND ABBREVIATIONS

Dillon	Dillon Consulting Limited
ECA	Environmental Compliance Approval
Enbridge	Enbridge Gas Inc.
HP	high pressure
IP	intermediate pressure
km	kilometre(s)
LTC	Leave-to-Construct
m	metre(s)
MECP	Ontario Ministry of the Environment, Conservation and Parks
N/A	not applicable
NPS	nominal pipe size
OEB	Ontario Energy Board
psig	pounds per square inch gauge
the Project	Low-Carbon Energy Project
TOC	Technology and Operations Centre

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1.0 INTRODUCTION

Enbridge Gas Inc. (Enbridge) retained Dillon Consulting Limited (Dillon) to undertake a route selection and environmental and socio-economic impact study and report (Environmental Report) for the proposed Low-Carbon Energy Project (the Project).

The Environmental Report (Dillon, 2019a) for the Project was completed in May 2019. Following completion of the Environmental Report, Enbridge provided additional information regarding the Project in two Addendums. Addendum #1 (Dillon, 2019b) was completed in September 2019 and addressed comments from the Toronto and Region Conservation Authority. Addendum #2 (Dillon, 2019c) was completed in December 2019 and provided updated Project mapping depicting only Phase 1 of the Project, as Phase 2 was removed from the Project scope. Enbridge filed a Leave-to-Construct (LTC) application for the Project with the Ontario Energy Board (OEB) on December 20, 2019.

Since the completion of the Environmental Report and the Addendums (Dillon, 2019a; 2019b; 2019c), Enbridge has made changes to the scope of the Project that require additional study and review. This report constitutes an Amendment to the Environmental Report (Amendment #1) and provides the results of Dillon's review of Enbridge's proposed changes to the Project. These proposed Project changes include:

- The selection of the Phase 1 Alternative Route as the Preferred Route; and,
- The addition of three small facilities on Enbridge-owned property into the Environmental Report scope.

The proposed Project changes are illustrated on **Figure 1** and are described in further detail in **Section 3**.

The objective of this Amendment is to determine if there are any additional potential environmental or socio-economic impacts as a result of the proposed changes that were not captured in the assessment already provided in the Environmental Report.

Stakeholder consultation and Indigenous engagement continue to be key components of the study. This draft Amendment is being shared with interested parties to identify any issues and concerns related to the proposed Project changes. Following the provision of this draft Amendment, interested parties are invited to provide comments, questions, or concerns to the Project Team within a 30-day period. This feedback will be documented as a component of the final Amendment that will be filed with the OEB (see **Section 6** for further details).

This Amendment is to be read in conjunction with the Environmental Report and the Addendums (Dillon, 2019a; 2019b; 2019c). Information from the Environmental Report and the Addendums is not repeated in this Amendment, except where required to provide context.

The Environmental Report and the Addendums are available for review by interested stakeholders on the Enbridge Project website at <https://www.enbridgegas.com/about-us>. Click on the "**Projects**" tab and select "**Low-Carbon Energy Project**".

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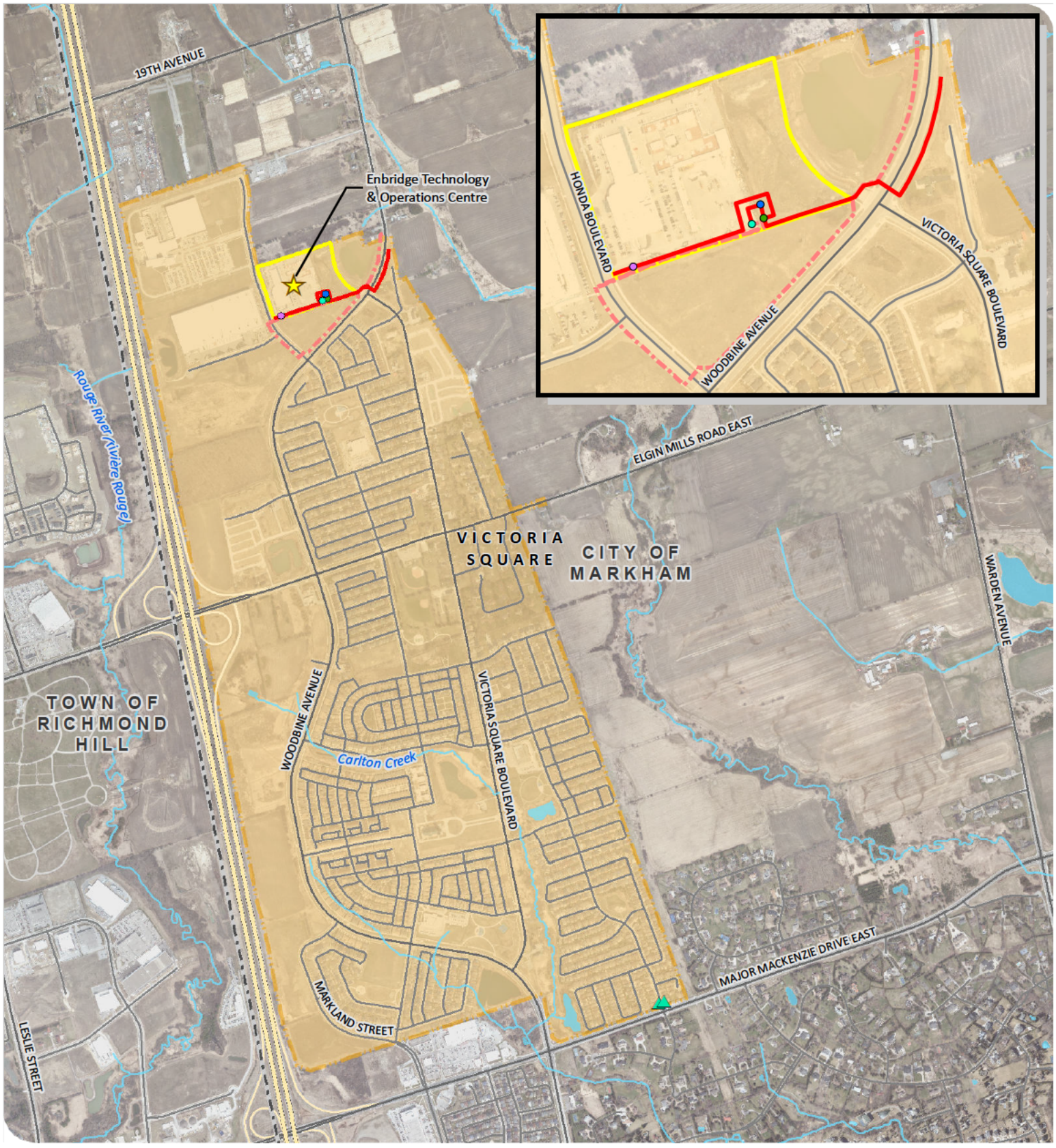

ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

PROPOSED PIPELINE ROUTES

FIGURE 1

- Phase 1 Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Phase 1 Blended Gas Distribution Area
- Enbridge Property
- Watercourse
- Waterbody
- Municipal Boundary

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION
MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:20,000

0 0.125 0.25 0.5 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12

2.0 PROJECT BACKGROUND

The Project was initially proposed as a two-phase installation of approximately 6.7 kilometres (km) of natural gas pipeline in the City of Markham. Addendum #2 to the Environmental Report resulted in the removal of Phase 2 from the Project scope. As such, the Project scope was reduced to Phase 1 only, which would involve the installation of approximately 1.3 km of nominal pipe size (NPS) 6-inch and NPS 8-inch pipe, primarily along Woodbine Avenue and Honda Boulevard, ending at Enbridge's Technology and Operations Centre (see **Figure 1**).

The objective of the Project is to blend a small amount of hydrogen gas (up to 2% by volume) into a small, carefully selected portion of Enbridge's existing natural gas network in order to reduce greenhouse gas emissions. An affiliate of Enbridge Gas Inc. operates a Power-to-Gas facility at the Technology and Operations Centre, which uses surplus electricity to 'split' water molecules into hydrogen and oxygen using electrolyzer technology. The hydrogen gas would be injected into the existing natural gas network and blended gas would be distributed to the Victoria Square neighbourhood, as illustrated on **Figure 1**.

The Environmental Report (Dillon, 2019a) was completed by Dillon in May 2019 and conforms to the OEB *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition* (2016).

The Environmental Report involved undertaking an inventory of physical, natural and socio-economic features within identified Study Areas (see Section 3, Physical, Natural and Socio-Economic Environment Setting in the Environmental Report). Potential alternative routes were identified and then evaluated against one another to select Preferred Routes for each Project Phase. The route selection evaluation process is detailed in Section 5 of the Environmental Report. Public involvement played an important role in this process.

In accordance with the OEB Guidelines, Enbridge carried out a comprehensive stakeholder consultation program to consult and communicate with federal, provincial, and municipal government agencies, Indigenous communities, directly and indirectly affected landowners, residents, and interested members of the public. The stakeholder consultation program methods and results are detailed in Section 4 of the Environmental Report.

Potential environmental and socio-economic impacts and associated mitigation measures are detailed in Section 6 of the Environmental Report. Mitigation measures were recommended to avoid or reduce potential negative impacts to environmental and socio-economic features. Based on the original Project scope and the adoption of mitigation measures recommended in the Environmental Report, Dillon did not predict any long-term impacts from the construction and operation of the Project.

Following the completion of the Environmental Report in May 2019, Enbridge has revised the scope of the Project as detailed in **Section 3**.

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3.0 PROPOSED PROJECT CHANGES

Enbridge is no longer proposing to construct the Phase 1 Preferred Route identified in the Environmental Report. A slight variation of the Phase 1 Alternative Route has now been identified as the Preferred Route (see **Figure 1**).

3.1 RATIONALE

The following provides the rationale for the proposed Project changes. Enbridge has identified these proposed changes as a result of the ongoing detailed engineering design process, the acquisition of new land adjacent to Enbridge's existing Technology and Operations Centre (TOC) property at 101 Honda Boulevard, and stakeholder consultation.

Proceeding with the Phase 1 Preferred Route as described in the Environmental Report would have resulted in added congestion within the TOC Operations Compound, with added safety concerns. The Operations Compound currently has live traffic from operational vehicles, and it houses the Power-to-Gas facilities, the refuelling facilities for compressed natural gas vehicles, and an inventory of materials to support raw material for operations, which are accessed multiple times per day. As part of the long-term plan for the TOC, Enbridge recently acquired new land adjacent to the TOC property, which will now better accommodate the hydrogen-blending facilities required for the Project.

At the Project open houses held in 2019, concerns were raised regarding disruptions to the community due to construction along Woodbine Avenue, including traffic congestion, noise, dust, and accessibility. The new Preferred Route addresses construction concerns, as it results in a reduced duration of construction on Woodbine Avenue, thereby reducing effects such as traffic disruptions dust, and noise. In addition, selecting the new Preferred Route would further add efficiencies to the Project as it would reduce the length of the pipe needed by approximately 40%, resulting in a reduced cost for the Project. Hosting the facilities in the new location also enhances safety at the current site as it reduces the impact of construction and has the added benefit of eliminating the need for construction on Honda Boulevard.

3.2 DESCRIPTION OF THE NEW PREFERRED ROUTE

The new Preferred Route would consist of the installation of approximately 755 metres (m) of new pipeline, including approximately 25 m of NPS 8-inch intermediate pressure (IP) plastic pipe, 380 m of NPS 6-inch extra high pressure (HP) steel pipe, and 350 m of NPS 6-inch HP steel pipe.

The new Preferred Route would begin at a tie-in point along an existing Enbridge pipeline located on the east side of Woodbine Avenue, approximately 300 m northeast of the Enbridge Technology and Operations Centre. It would travel south to the intersection of Woodbine Avenue and Victoria Square Boulevard where it would then turn west and cross under Woodbine Avenue and continue along the southern edge of the Enbridge property at 101 Honda Boulevard. The pipeline would be connected to the proposed hydrogen-blending facilities on the Enbridge property and would continue west to Honda Boulevard where it would tie into another existing Enbridge pipeline (see **Figure 1**).

3.3 DESCRIPTION OF PROPOSED HYDROGEN-BLENDING FACILITIES

The facilities described here are a component of the current LTC application to the OEB that was submitted in December 2020, however, they were not within the scope of the Environmental Report at that time. Their new proposed location has resulted in them being added to the scope of the Environmental Report, and thus they are being assessed in this Amendment.

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The proposed Hydrogen Station and Hydrogen Blending Station, as well as a Remote Terminal Unit (RTU) building, will be located on a concrete pad within a fenced and gravelled compound on Enbridge's existing property at 101 Honda Boulevard. The purpose of this facility is to regulate the pressures of the natural gas and hydrogen prior to mixing and controlling the amount of hydrogen that is injected based on the measured flow of natural gas. The fenced compound will measure approximately 13 m × 25 m and the maximum height of the buildings will be 3.5 m.

The proposed District Station will also be located on Enbridge's existing property at 101 Honda Boulevard and will be nested inside an aluminum box measuring approximately 2 m × 2 m × 2 m. The purpose of the District Station is to reduce the gas pressure from the HP (175 psig) steel pipeline to the IP (55 psig) plastic pipeline for distribution.

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4.0 STUDY PROCESS AND PROJECT SETTING

Section 2 of the Environmental Report describes the study methods used in the Environmental Report, as well as the objectives and methods of stakeholder and Indigenous consultation. The same methods are applied in this Amendment.

Section 3 of the Environmental Report describes the environmental and socio-economic setting of the Project. There is no change to the setting information as a result of the proposed Project changes described in this Amendment, as the location of the Project remains the same (see **Figure 2** and **Figure 3** for mapped natural environment and socio-economic features, respectively). The footprint of the new Preferred Route and proposed hydrogen-blending facilities was covered by desktop and field studies conducted for the Environmental Report. Similarly, the Study Area identified for the Project (120 m buffer on each side of the proposed route for a total width of 240 m) remains the same as identified in the Environmental Report (see **Figure 4**).

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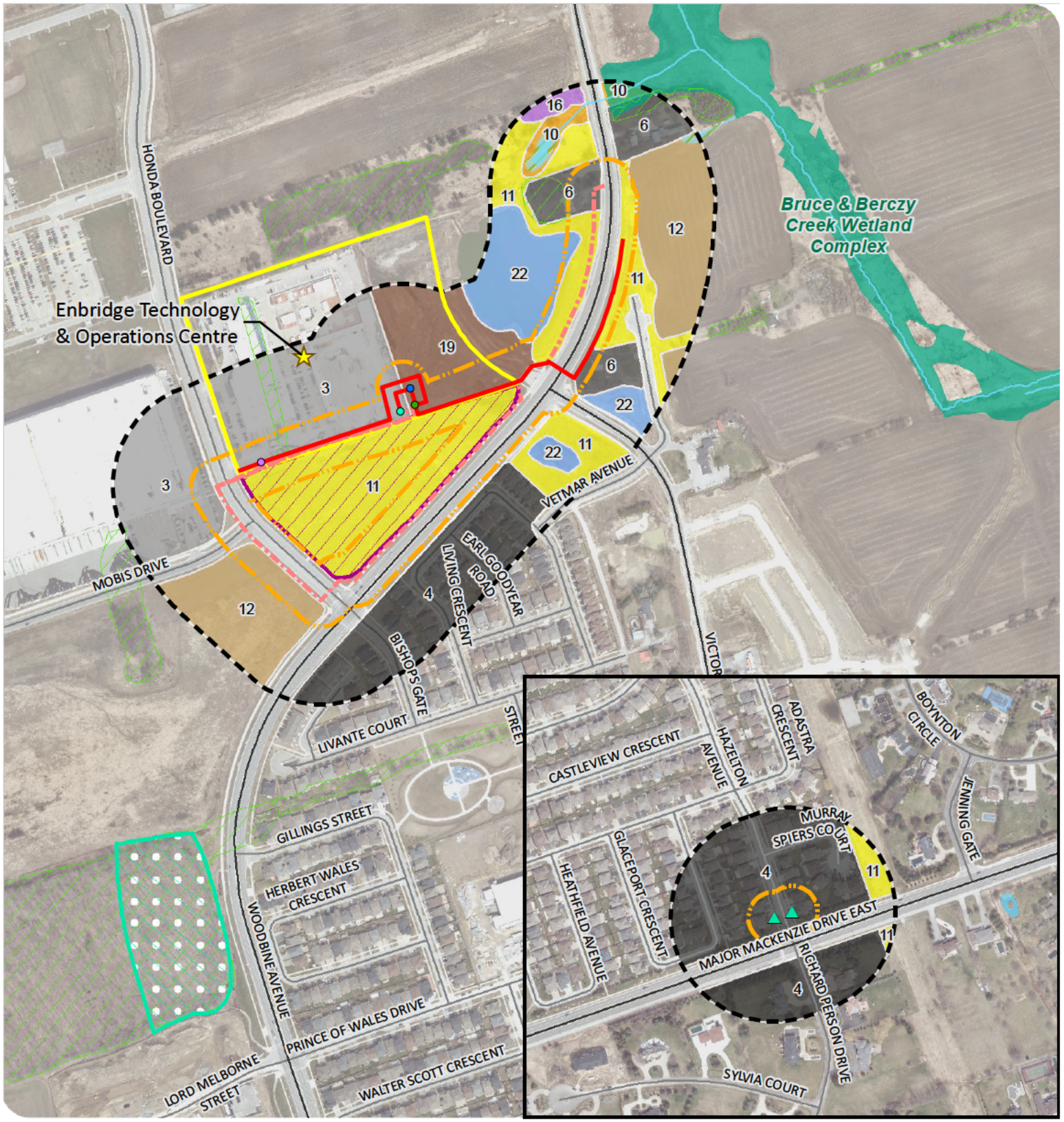


ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

NATURAL ENVIRONMENT FEATURES

FIGURE 2

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Study Area (120 m)
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody
- Unevaluated Wetland
- Provincially Significant Wetland
- Wooded Area (MNRF)
- Candidate Habitat Species of Conservation Concern
- Candidate SAR Bat Habitat and Significant Wildlife for Bat Maternity Colonies
- Potential Grassland Breeding Bird Habitat

Ecological Land Classification

- 3. CVC: Commercial and Institutional
- 4. CVR_1: Low Density Residential
- 6. CVR_4: Rural Property
- 10. MAM: Meadow Marsh
- 11. MEM: Mixed Meadow
- 12. OAGM1: Annual Row Crop
- 16. THD: Deciduous Thicket
- 19. Disturbed Ground
- 22. Stormwater Management Facility

DILLON CONSULTING

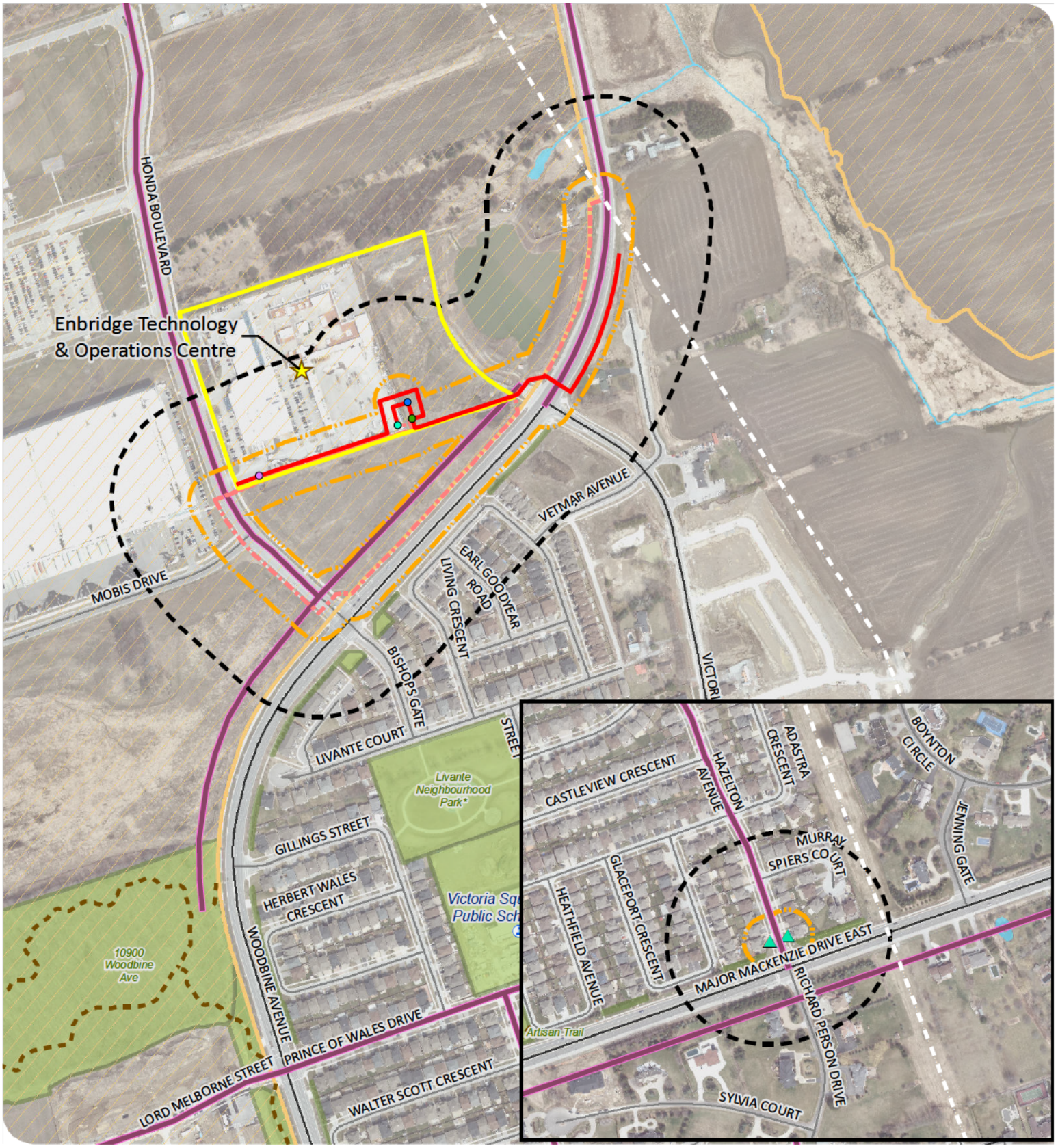
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N
FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:6,000

0 0.04 0.08 0.16 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12



ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

SOCIO-ECONOMIC FEATURES

FIGURE 3

ENBRIDGE

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Study Area (120 m)
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody
- Educational Facility
- Hydro Line
- Trail
- Bicycle Route
- Business Park
- Park

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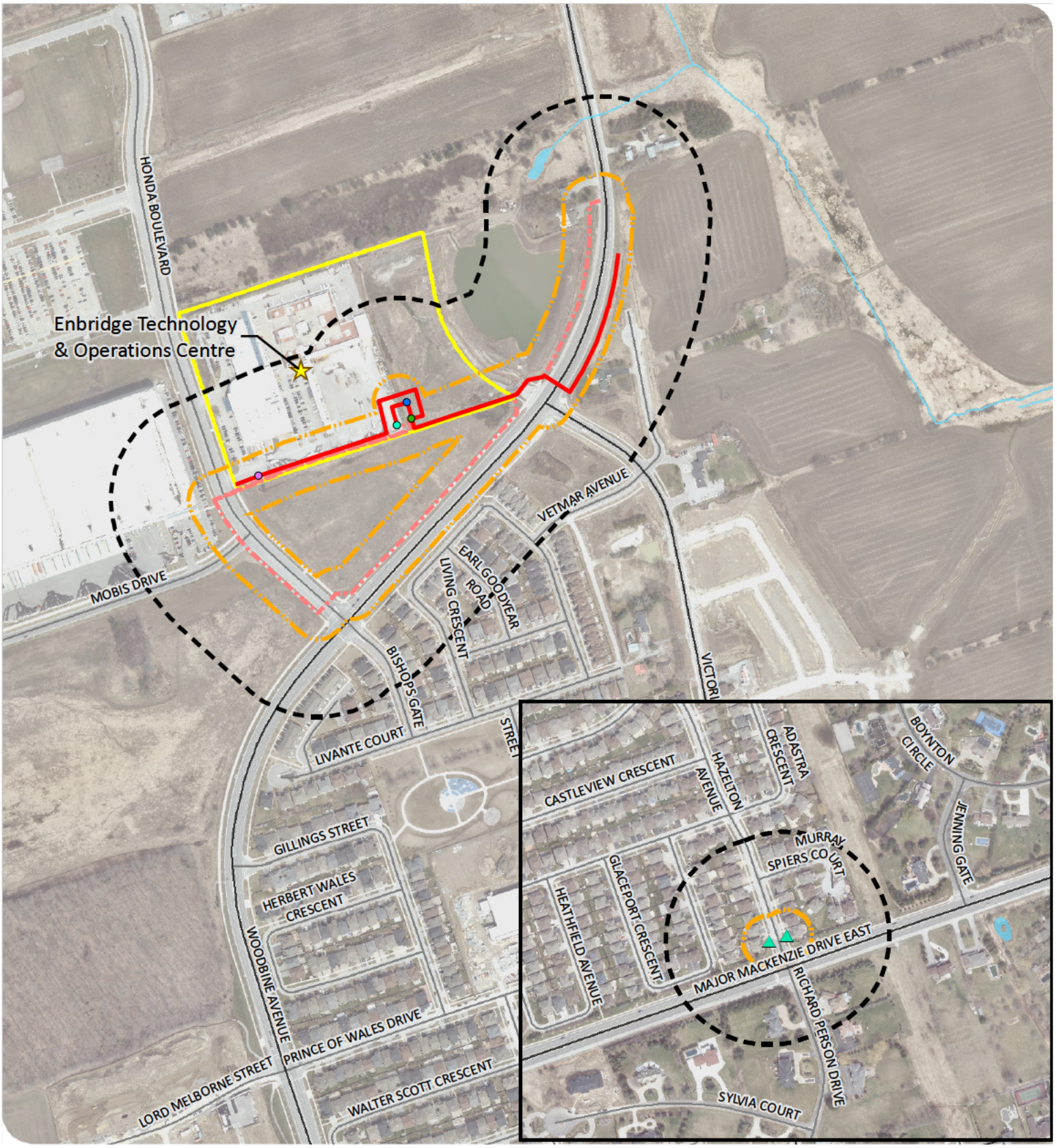
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N
FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:6,000

0 0.04 0.08 0.16 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12



ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

STUDY AREAS
FIGURE 4

ENBRIDGE

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Study Area (120 m)
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody

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SCALE 1:6,000

0 0.04 0.08 0.16 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12

5.0 POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

Section 6 of the Environmental Report includes a detailed mitigation strategy based on potential impacts of the Project. This Amendment assesses the potential for previously unassessed/new impacts as a result of the proposed Project changes, and, where necessary, recommends additional mitigation measures. Select mitigation measures are illustrated on **Figure 5**.

This Amendment also considers potential changes in cumulative effects. Proposed developments within 1 km of the Project are listed in Section 7.3 of the Environmental Report, and additional developments identified by the Toronto and Region Conservation Authority are listed in Addendum #1. These proposed developments were reviewed to identify any potential changes to cumulative Project interactions as a result of the proposed Project changes.

5.1 NEW PREFERRED ROUTE

Since the new Preferred Route was previously evaluated as the Phase 1 Alternative Route in the Environmental Report, a new effects assessment is not deemed warranted and, instead, a comparison of constraints between the previously identified Phase 1 Preferred Route and the new Preferred Route is provided in the following subsections.

Considering the criteria used to evaluate the Phase 1 Preferred and Alternative Routes in Section 5 of the Environmental Report, there are few differences between the proposed changes in this Amendment relative to the original Project scope included in the Environmental Report.

BIOPHYSICAL CONSTRAINTS

There are no previously unidentified biophysical constraints associated with the new Preferred Route.

Neither the previously identified Phase 1 Preferred Route, nor the new Preferred Route, cross any waterbodies, watercourses, wetlands/wetland complexes, Special Policy Areas (i.e., Greenbelt), or Areas of Natural or Scientific Interest.

The new Preferred Route is located entirely within municipal road rights-of-way and on previously disturbed land owned by Enbridge.

SOCIO-ECONOMIC CONSTRAINTS

There are no previously unidentified socio-economic constraints associated with the new Preferred Route.

The new Preferred Route will have fewer impacts on the neighbourhood/residences to the south of Woodbine Avenue, as it crosses to the west side of Woodbine Avenue just north of Victoria Square Boulevard, before the commencement of the housing subdivisions. In comparison, the previously identified Phase 1 Preferred Route would have run parallel to Woodbine Avenue from the north tie-in point southwest to Honda Boulevard and would have resulted in a larger footprint adjacent to the residential area.

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TECHNICAL CONSTRAINTS

There are no previously unidentified technical constraints associated with the new Preferred Route.

The new Preferred Route has a shorter overall length (approximately 755 m as opposed to 1.3 km) and has only one road crossing (in comparison to three crossings associated with the previously identified Phase 1 Preferred Route).

SUMMARY

The new Preferred Route does not result in any material change to the biophysical, socio-economic, or technical constraints considered in the Environmental Report. There are minor advantages to the new Preferred Route over the previously identified Phase 1 Preferred Route including lesser impact on nearby residences (south of Woodbine Avenue), shorter overall length, and fewer road crossings.

The assessment of potential Project effects, cumulative effects, and recommended mitigation measures presented in the Environmental Report in regard to the Phase 1 Preferred Route remains unchanged as a result of the new Preferred Route. Consequently, no additional mitigation measures beyond those recommended in the Environmental Report are required.

5.2 PROPOSED HYDROGEN-BLENDING FACILITIES

As noted in **Section 3**, the proposed hydrogen-blending facilities will be located entirely within Enbridge's property at 101 Honda Boulevard on previously disturbed land.

Given the setting of the proposed hydrogen-blending facilities in relation to the previously evaluated Phase 1 Preferred and Alternative Routes, there are no additional constraints (biophysical, socio-economic, or technical) anticipated as a result of the proposed hydrogen-blending facilities, as they are located within the Study Area that was reviewed and assessed in the Environmental Report.

Enbridge will be applying for an Environmental Compliance Approval (ECA) from the Ontario Ministry of the Environment, Conservation and Parks (MECP) that will permit air and noise emissions associated with the proposed hydrogen-blending facilities. As part of the ECA application to MECP, Enbridge will complete all necessary studies to determine the potential impact of the air and noise emissions from the proposed hydrogen-blending facilities.

The following subsections provide an assessment of potential effects and cumulative effects associated with the proposed hydrogen-blending facilities, and recommends additional mitigation measures, where necessary.

POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

Table 1 provides the assessment of potential impacts associated with the proposed hydrogen-blending facilities on the physical, natural, and socio-economic environment, as well as recommended mitigation measures.

The assessment provided in **Table 1** was only conducted for the proposed hydrogen-blending facilities described in this Amendment that were not previously evaluated in the Environmental Report. Effects and mitigation measures considered in the Environmental Report are not repeated below.

The proposed hydrogen-blending facilities do not result in a change to the effects assessment for most of the components; however, new potential interactions have been identified for the Physiography, Topography, and Surficial Geology; Atmospheric Environment; Noise; and Access Modifications and Restrictions components.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
PHYSICAL ENVIRONMENT			
Physiography, Topography, and Surficial Geology	***Construction*** The topography at the proposed facility sites is generally level and no unique physical features are present. The footprint of the proposed hydrogen-blending facilities will be graded, if required, and the facilities will be constructed on concrete pads. The area within the fenced compound will be gravelled. There is potential for a minor, localized change in topography as a result of grading and the installation of permanent components that may alter natural surface drainage patterns. ***Operation*** No effects on physiography, topography, and surficial geology are anticipated during operation of the proposed hydrogen-blending facilities.	• Pre-construction contours and drainage patterns should be re-established around the facilities, to the extent feasible, following construction. • Maintain site drainage during all phases of construction. Ensure construction activities do not cause the ponding of water or unintentional channelization of surface water flow. • Following the completion of construction activities, regrade areas with vehicle ruts or erosion gullies if required.	No significant net effect is anticipated following implementation of the recommended mitigation measures.
Groundwater	***Construction*** The proposed hydrogen-blending facilities will be located above-ground and no interaction with groundwater is anticipated during construction. ***Operation*** No effects on groundwater are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	Not applicable (N/A) – no new potential effects are anticipated.
Bedrock	***Construction*** The proposed hydrogen-blending facilities will be located above-ground and no interaction with bedrock is anticipated during construction. ***Operation*** No effects on bedrock are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Seismicity	***Construction*** No effects of seismic activity are anticipated during construction of the proposed hydrogen-blending facilities. ***Operation*** Impacts to the proposed hydrogen-blending facilities as a result of seismic activity are not anticipated at this time. The facilities will be designed in accordance with low to moderate levels of seismicity and comply with Canadian Geological Survey data and National Building Code minimum standards.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
NATURAL ENVIRONMENT			
Atmospheric Environment	***Construction*** Effects on the atmospheric environment from construction were previously assessed in the Environmental Report and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** There will be venting of natural gas for token relief at the proposed hydrogen-blending facilities during operations. Details on the venting will be provided in Enbridge's ECA permit application to MECP.	• For construction, no additional mitigation measures are recommended beyond the measures provided in the Environmental Report. • During operations, implement requirements/conditions of the ECA permit from MECP.	No significant net effect is anticipated following implementation of the recommended mitigation measures.
Wetlands	***Construction*** There are no wetlands located within 30 m of the proposed hydrogen-blending facilities and no interaction with wetlands is anticipated during construction. ***Operation*** No effects on wetlands are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Surface Water, Fish and Aquatic Habitat	***Construction*** There are no watercourses located within 30 m of the proposed hydrogen-blending facilities and no interaction with surface water, fish, and aquatic habitat is anticipated during construction. ***Operation*** No effects on surface water, fish, and aquatic habitat are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Terrestrial Habitat and Vegetation	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land adjacent to manicured lawns, sidewalks, and major roads (Woodbine Avenue and Honda Boulevard). Vegetation encountered will consist of common roadside vegetation of minor ecological value (vegetation capable of colonizing new roadside edges). Effects on terrestrial habitat and vegetation were previously assessed in the Environmental Report and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects on terrestrial habitat and vegetation are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Wildlife, Significant Wildlife Habitat and Species at Risk	***Construction*** No effects on wildlife, significant wildlife habitat, and species at risk are anticipated during construction of the proposed hydrogen-blending facilities. ***Operation*** No effects on wildlife, significant wildlife habitat, and species at risk are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Agriculture and Soils	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land adjacent to manicured lawns, sidewalks, and major roads (Woodbine Avenue and Honda Boulevard). Topsoil will be removed within the footprint of the facilities to accommodate site preparation and installation of the concrete pad. No interaction with agricultural soils is anticipated during construction. ***Operation*** No effects on agriculture and soils are anticipated during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
SOCIO-ECONOMIC ENVIRONMENT			
Noise	***Construction*** Construction activities have the potential to disturb residents south of Woodbine Avenue in the Victoria Square neighbourhood. Construction-related noise effects are expected to be minor, temporary, and localized, particularly given the existing acoustic environment which includes regular traffic noise on Woodbine Avenue. ***Operation*** There may be some noise from the facilities during operations, however, this will be permitted through the MECP ECA process.	• For construction, no additional mitigation measures are recommended beyond the measures provided in the Environmental Report. • During operations, implement requirements/conditions of the ECA permit from MECP.	No significant net effect is anticipated following implementation of the recommended mitigation measures.
Access Modifications and Restrictions	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge, however, there is the potential that construction of the District Station may require some workspace that extends into the sidewalk along Honda Boulevard, temporarily disrupting pedestrian traffic. Access restrictions on road traffic are not anticipated. ***Operation*** No effects on access will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are recommended beyond the measures provided in the Environmental Report.	No significant net effect is anticipated following implementation of the recommended mitigation measures.

Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Traffic Disruption	***Construction*** Effects on traffic as a result of construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects on traffic will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Vibration	***Construction*** Effects of vibration during construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects of vibration will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Construction Waste	***Construction*** Effects of construction wastes were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects of construction waste will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Bentonite Slurry	***Construction*** Bentonite slurry is generated during trenchless pipeline construction and, therefore, will not be generated during facility construction. ***Operation*** No effects of bentonite slurry will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Hydrostatic Test Water	***Construction*** Hydrostatic test water is not required for construction of the proposed hydrogen-blending facilities. ***Operation*** No effects of hydrostatic test water will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Aesthetics	***Construction*** Effects on aesthetics as a result of construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** The proposed hydrogen-blending facilities will be permanent and will alter the current aesthetics of the area; however, in the context of the existing setting, including the existing Enbridge and Mobis Parts Canada buildings, and the presence of Woodbine Avenue, a busy thorough-fare immediately adjacent to the property, the change in aesthetics is anticipated to be minor.	• No additional mitigation measures are required.	No significant net effect is anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Existing and Planned Land Use	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge. As such, there will be no effects on existing and planned land use at the proposed facility locations. ***Operation*** No effects on existing and planned land use will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Existing Linear Infrastructure Corridors and Other Infrastructure	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge that is currently vacant. No interaction with existing linear infrastructure corridors and other infrastructure is anticipated. ***Operation*** No effects on existing linear infrastructure corridors and other infrastructure will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Population and Demographics	***Construction*** No effects on population and demographics will occur during construction of the proposed hydrogen-blending facilities. ***Operation*** No effects on population and demographics will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Economic Activities, Employment and Labour Force	***Construction*** Effects on economic activities, employment, and labour force as a result of construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects on economic activities, employment and labour force will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Tourism and Recreation	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge. No interaction with tourism and recreation is anticipated. ***Operation*** No effects on tourism and recreation will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Indigenous Communities	***Construction*** The proposed hydrogen-blending facilities will be constructed on previously disturbed land owned by Enbridge. No interaction with Indigenous communities is anticipated. ***Operation*** No effects on Indigenous communities will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Archaeological and Heritage Resources	***Construction*** The Stage 1 Archaeological Assessment conducted for the Project concluded that the Phase 1 Study Area be considered free of archaeological concern and no further assessment was recommended. As such, no interaction with archaeological and heritage resources is anticipated during construction. ***Operation*** No effects on archaeological and heritage resources will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Community Services	***Construction*** No effects on community services will occur during construction of the proposed hydrogen-blending facilities. ***Operation*** No effects on community services will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

Table 1: Potential Construction and Operation Effects, Mitigation Measures, and Net Effects Associated with the Proposed Hydrogen-Blending Facilities

Component	Potential Construction and Operation Effects	Mitigation Measures	Potential Net Effects
Contaminated Sites	***Construction*** There is limited potential to encounter contaminated sites during construction. Effects of contaminated sites discovered during construction were previously assessed in the Environmental Report, and no new interactions have been identified as a result of the proposed hydrogen-blending facilities. ***Operation*** No effects of contaminated sites will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.
Planning Policies	***Construction*** The Project will need to conform to applicable provincial and municipal planning policies. No new interactions have been identified as a result of the proposed hydrogen-blending facilities ***Operation*** No effects on planning policies will occur during operation of the proposed hydrogen-blending facilities.	• No additional mitigation measures are required.	N/A – no new potential effects are anticipated.

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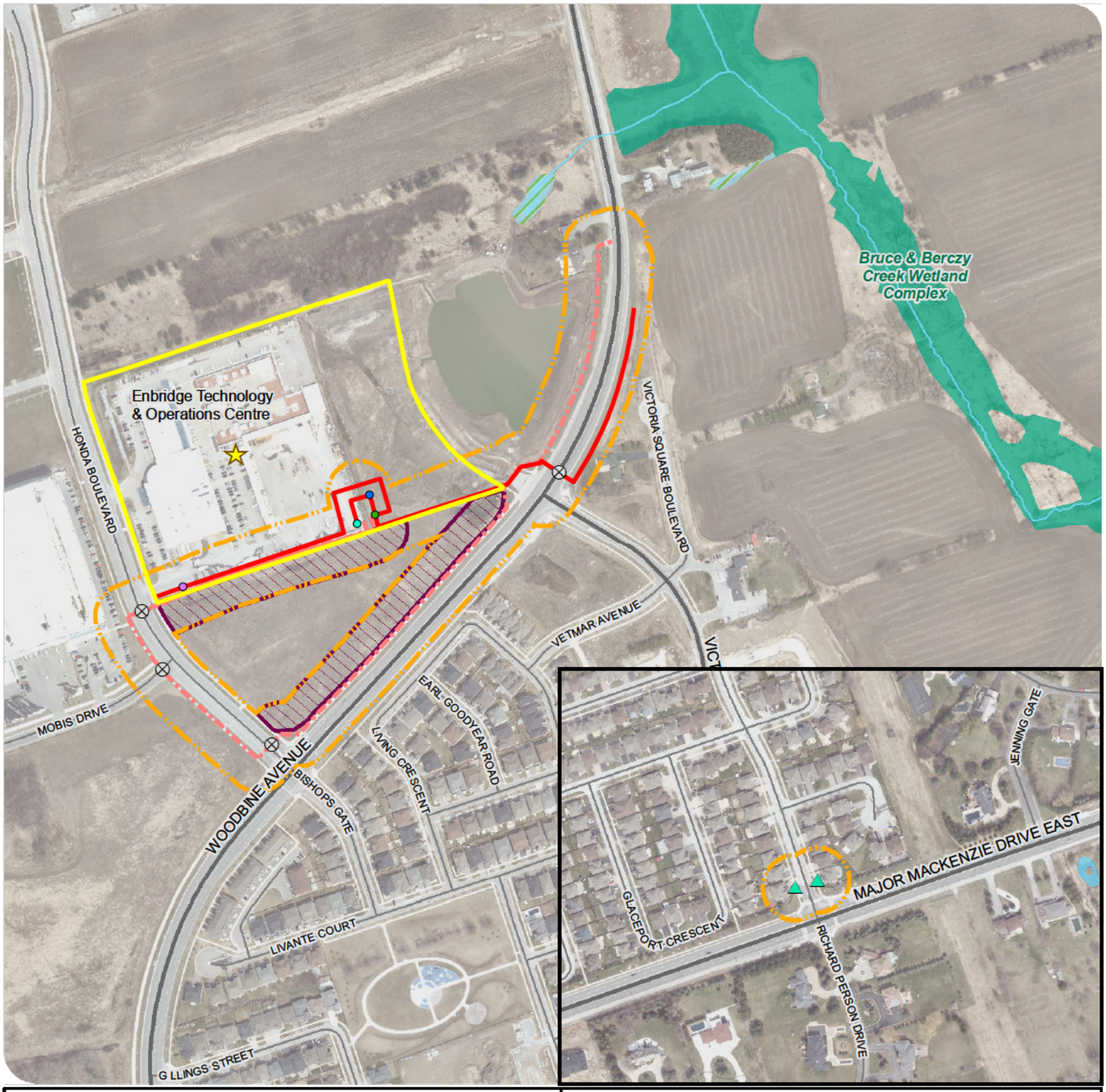

⊗ **Potential Road or Rail Crossing.** For minor road crossings, open-cut or trenchless crossings will be applied. Contact the local region or municipality. Enbridge to develop a Traffic Management Plan to ensure that traffic is maintained while the crossing is conducted. Flag persons will be provided as required. Refer to Section 18.0 of the Enbridge Environmental Construction and Maintenance Manual, 2019.

Candidate Significant Wildlife Habitat. These areas are known to contain Significant Wildlife Habitat. Abide by restricted activity periods and mitigation measures in Table 7.

ENBRIDGE GAS INC.

LOW-CARBON ENERGY PROJECT

MITIGATION

FIGURE 5

- Disconnect / Reconnect Location
- Existing Hydrogen Tanks
- Proposed District Station
- Proposed Hydrogen Blending Station
- Proposed Hydrogen Station
- New Preferred Route
- Previously Identified Phase 1 Preferred Route
- Project Footprint (30 m)
- Enbridge Property
- Watercourse
- Waterbody
- Unevaluated Wetland
- Provincially Significant Wetland

*As identified in the TRCA's 2010 Draft Rouge River Watershed Management Plan.

DILLON CONSULTING

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, YORK REGION

MAP CREATED BY: LK
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N
FILE LOCATION: I:\GIS\189005 - Enbridge

SCALE 1:5,000

0 0.0325 0.065 0.13 km

PROJECT: 18-9005 STATUS: DRAFT DATE: 2020-02-12

CUMULATIVE EFFECTS ASSESSMENT

Cumulative effects to the physical and natural environment are anticipated to be negligible given the land for the proposed hydrogen-blending facilities has been previously disturbed and the permanent facility footprints will be minimal in an area of existing high anthropogenic disturbances. Residual air and noise emissions are anticipated to be well within regulatory standards and will be in compliance with the MECP ECA permit.

There is a possibility of cumulative effects on the socio-economic environment related to construction traffic, noise, and dust; however, as described in Section 7 of the Environmental Report, the use of appropriate mitigation techniques and the short timeframe for construction will mitigate any cumulative impacts to a low magnitude. Consequently, no significant cumulative effects are anticipated as a result of the addition of the proposed hydrogen-blending facilities to the scope of the Environmental Report.

SUMMARY

The assessment of potential Project effects, cumulative effects, and recommended mitigation measures presented in the Environmental Report remains largely unchanged as a result of the proposed hydrogen-blending facilities.

The proposed hydrogen-blending facilities will result in a minor, localized alteration of topography, some air and noise emissions during operations, a minor alteration of visual aesthetics, and potential temporary pedestrian access restrictions; however, no significant net effects are anticipated with the implementation of mitigation measures. The mitigation measures recommended in the Environmental Report are considered adequate to address these potential minor effects in conjunction with the implementation of any requirements/conditions of the MECP ECA permit for air and noise emissions.

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6.0 STAKEHOLDER AND INDIGENOUS CONSULTATION UPDATE

This draft Amendment is being circulated to all individuals on the Project contact list developed for the Environmental Report. In addition, a Notice of Project Change is being circulated to all individuals who participated in the consultation process either by attending the Open Houses, sending emails to the Project email inbox, or who otherwise provided their contact details to a Project Team Member with an interest in staying informed of Project updates. The Notice of Project Change will also be circulated to approximately 2,700 residents and businesses located within the Phase 1 Study Area (see **Figure 4**). The Notice of Project Change requests public comment on the proposed changes and provides Project contact information.

A 30-day public comment period will be observed following the release of this draft Amendment. Any comments received as a result of consultation relating to the Amendment will be tracked and responses will be provided, as required. Meetings will be held with applicable agencies, Indigenous communities, and other stakeholders on an as-needed basis to review the proposed changes to the Project. A summary of the consultation results, as well as the consultation logs, will be provided in **Appendix A** of the finalized Amendment to be submitted to the OEB.

The final Amendment will be available for review by interested stakeholders on the Enbridge Project website at <https://www.enbridgegas.com/about-us>, following submission to the OEB (anticipated by March 31, 2020).

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7.0 CONCLUSIONS

This Amendment provides the results of Dillon's review of the proposed changes to the Project scope (as described in **Section 3**) since the completion of the Environmental Report in May 2019, as well as the Addendums in September and December 2019.

The new Preferred Route is similar to the Phase 1 Alternative Route evaluated in the Environmental Report. The setting and assessment of the previously identified Phase 1 Preferred Route can be applied to the new Preferred Route given their proximity to one another. The new Preferred Route results in some advantages over the previously identified Phase 1 Preferred Route, including a shorter overall length, fewer road crossings, and smaller overall construction footprint. The proposed hydrogen-blending facilities will be located entirely on Enbridge-owned property and will be subject to the MECP ECA process.

Based on this review, Dillon has determined that the proposed changes to the Project scope do not result in any material change to the assessment, recommended mitigation measures, or conclusions, as presented in the Environmental Report, and no further assessment is considered necessary.

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8.0 REFERENCES

Dillon Consulting Limited (Dillon). 2019a. *Low-Carbon Energy Project Environmental Report*. May 2019. Prepared for Enbridge Gas Inc. Markham, ON. ix + 100 pp. + Appendices. Available at: https://www.enbridgegas.com/about-us.

Dillon Consulting Limited (Dillon). 2019b. *Enbridge Gas Inc. Low-Carbon Energy Project Environment Report Addendum*. September 2019. Prepared for Enbridge Gas Inc. Markham, ON. ii + 5 pp. Available at: https://www.enbridgegas.com/about-us.

Dillon Consulting Limited (Dillon). 2019c. *Enbridge Gas Inc. Low-Carbon Energy Project Environmental Report Addendum #2*. December 2019. Prepared for Enbridge Gas Inc. Markham, ON. i + 8 pp. Available at: https://www.enbridgegas.com/about-us.

Ontario Energy Board (OEB). 2016. *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition*. 70 pp.

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APPENDIX A

Consultation Update – Summary and Logs

[Note: To be completed and included in Final Amendment for OEB submission]

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Energy, Low-Carbon <lowcarbonenergyea@dillon.ca>

FW: [redacted] Hiawatha FN Discuss Power to Gas Project

[redacted] <[redacted]@enbridge.com> Mon, Mar 16, 2020 at 8:59 AM
To: "LowCarbonEnergyEA@dillon.ca" <LowCarbonEnergyEA@dillon.ca>

From: [redacted] <[redacted]@enbridge.com>
Sent: Monday, March 16, 2020 8:58 AM
To: [redacted] <[redacted]@hiawathafn.ca>
Subject: RE: [redacted] Hiawatha FN Discuss Power to Gas Project

Aaniin Tom, Enbridge has done the same. Enbridge has cancelled all travel and face to face meetings. I left you a message last Friday hoping we could have a quick call instead of a face to face meeting? Does that work for you?

Miigwech,

[redacted]

-----Original Appointment-----
From: [redacted] <[redacted]@hiawathafn.ca>
Sent: Monday, March 16, 2020 8:37 AM
To: [redacted]
Subject: [External] Declined: Tom Cowie, Hiawatha FN Discuss Power to Gas Project
When: Tuesday, March 17, 2020 11:00 AM-12:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: [redacted] to Call [redacted]

EXTERNAL: PLEASE PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe.

Aaniin [redacted] due to the recent events. Hiawatha has cancelled all meetings, travel and programs until After April 6