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APPLICATION

ONTARIO ENERGY BOARD

IN THE MATTER OF The Ontario Energy Board Act, 1998, S.O. 1998, c.15, Schedule B, and in particular, s.90 thereof;

AND IN THE MATTER OF an Application by Union Gas Limited for an Order granting leave to construct a natural gas pipeline in the Township of Puslinch, in the County of Wellington.

UNION GAS LIMITED

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1. Union Gas Limited (the "Applicant") hereby applies to the Ontario Energy Board (the "Board"), pursuant to Section 90 of the Ontario Energy Board Act (the "Act"), for an Order granting leave to construct 4.9 kilometres of NPS 12 natural gas pipeline ("proposed pipeline"). The proposed pipeline will originate at Lot 16, Concession 1, crossing Highway 401 to Lot 16, Concession 2, adjacent to Wellington Road 34, Township of Puslinch, County of Wellington.

2. Attached hereto as Schedule "A" is a map showing the general location of the proposed pipeline and the municipalities, highways, railways, utility lines and navigable waters through, under, over, upon or across which the pipeline will pass.

3. The construction of the pipeline will allow the Applicant to transmit additional volumes of gas for the purpose of increasing the capacity of the existing Guelph System to accommodate forecasted growth on the system.

4. The Applicant requests that this Application be dealt with in accordance with Section 34 of the Board's Rules of Practice and Procedure for written hearings.

5. The Applicant now therefore applies to the Board for an Order granting leave to construct the proposed pipeline as described above.

Dated at Municipality of Chatham-Kent this 11th day of November, 2008.

Per: Dan Jones,
Assistant General Counsel for Union Gas

Comments respecting this Application should be directed to:

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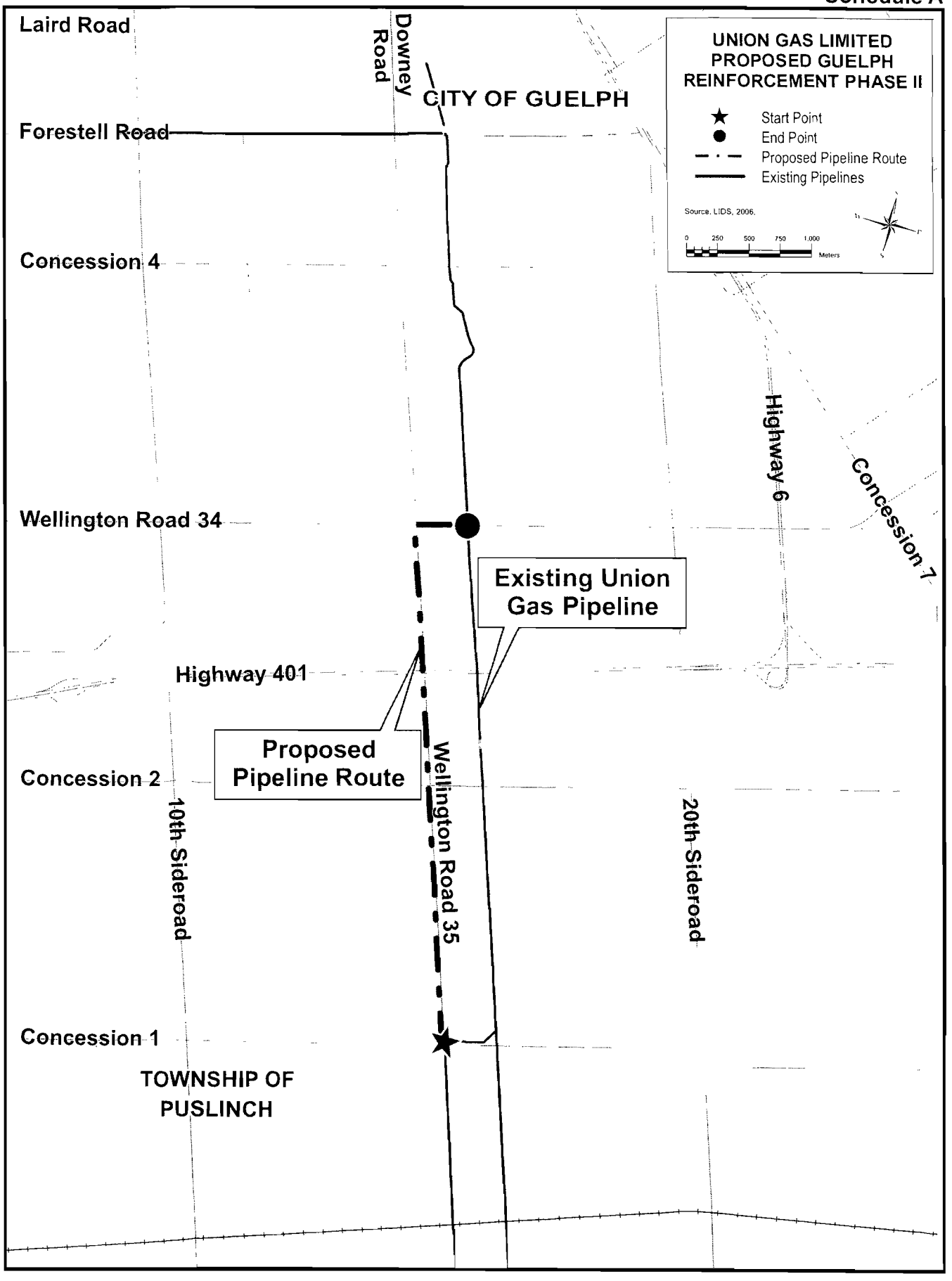
Schedule A

Schedule A



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PREFILED EVIDENCE

PROJECT SUMMARY

1. Union Gas Limited ("Union"), pursuant to Section 90 of the Ontario Energy Board Act, requests approval from the Ontario Energy Board ("OEB") for Leave to Construct 4.9 km of NPS 12 hydrocarbon (natural gas) pipeline ("proposed pipeline") in order to increase capacity of the existing Guelph system in the County of Wellington. The proposed pipeline will extend northerly from Lot 16, Concession 1, crossing Highway 401 to Lot 16, Concession 2, adjacent to Wellington Road 34, Township of Puslinch, County of Wellington.

2. The total project cost of the proposed pipeline is estimated to be $2,256,864.00, including Interest During Construction ("IDC").

3. An economic analysis has been completed in accordance with the recommendations of the Ontario Energy Board E.B.O. 188 report on *Natural Gas Expansion* and the project is economically justified.

4. An Environmental Report ("ER") has been prepared for the proposed pipeline. There will be minimal environmental impacts related to the construction of the pipeline given Union's standard construction procedures, the mitigation measures recommended in the ER, and the fact that the majority of the pipeline will be located within road allowance.

5. Construction of the proposed NPS 12 pipeline is scheduled to commence at the beginning of June, 2009 to utilize the favourable summer construction weather and environmental windows. The proposed latest in-service date for the project is November 1, 2009. In order to adhere to such a schedule, OEB approval is requested by March, 2009.

DESCRIPTION OF EXISTING SYSTEM

6. The existing Guelph System originates at the Guelph Valve Site at Union's Dawn Trafalgar Line, located on Lot 13, Concession 7, New City of Hamilton, formerly Township of Flamborough. An NPS 10 pipeline, the Guelph Line, runs northerly for 15 km to Puslinch

Transmission Station located in Lot 16, Concession 4, Puslinch Township. Gas is regulated at the Puslinch Transmission Station, which supplies gas to a northeast branch and a northwest branch of the Guelph System. In 2004, 5.9 km of NPS 12, (the Guelph Phase I Looping project) was constructed from Lot 13, Concession IX, New City of Hamilton, former Town of Flamborough to Lot 16, Concession 1, Township of Puslinch, County of Wellington.

7. The northeast branch of the Guelph System is a 4.2 km NPS 10 pipeline supplying gas to Guelph Gate Station.

8. The northwest branch of the Guelph System is 13 km in length. The first section of this branch is a 4.5 km NPS 12 pipeline supplying gas to Rozelle Road Station. At Rozelle Road Station, it becomes an 8.5 km NPS 8 pipeline supplying gas to the Guelph Hwy. 24 Station and the Guelph West Gate Station.

9. A map showing the existing Guelph system can be found at Schedule 1.

OPERATION OF EXISTING SYSTEM

10. The Guelph Line is an unregulated pipeline operating at a 6160 kPa Maximum Operating Pressure ("MOP") in common pressure with Union's Dawn Trafalgar system. At Puslinch Transmission Station, gas is regulated to a 3450 kPa MOP and delivered to a northeast branch and a northwest branch of the Guelph System; in addition gas is also regulated into a 420 kPa MOP system.

11. The northeast branch of the Guelph System delivers gas to Guelph Gate Station. At Guelph Gate Station, gas is regulated to a 1900 kPa MOP system and a 420 kPa MOP system.

12. The northwest branch of the Guelph System delivers gas to Rozelle Road Station, Guelph Hwy. 24 Station and Guelph West Gate Station. At Rozelle Road Station and Guelph Hwy. 24 Station, gas is regulated to a 420 kPa MOP system. At Guelph West Gate Station, gas is regulated to a 1900 kPa MOP system and a 420 kPa MOP system.

13. A map showing MOPs of the existing Guelph System can be found at Schedule 1.

FACILITIES BUSINESS PLAN APPROACH

14. The Facilities Business Plan ("FBP") is an internal planning process used by Union for the identification of reinforcement facilities required to support forecasted growth over a specific geographic area.

15. The FBP is developed for a study area which provides an overall business case for the long range system expansion for the study area. A study area represents the geographic area for which an FBP will cover.

16. Union's franchise area has been divided into a number of specific FBP study areas based on operational areas, pipeline system configuration and geographical features. The Guelph FBP covers the City of Guelph, Puslinch Township and portions of Woolwich, Wellington and Guelph-Eramosa townships. A map illustrating this FBP study area is found in Schedule 2.

17. FBPs provide a complete analysis of the study area based on a 10-year customer forecast ("FBP forecast"). A summary of this forecast can be found at Schedule 3.

18. Based on the FBP forecast, future facilities, both new and reinforcement, can be identified, economically evaluated, optimized and scheduled to meet the future growth demands on the system.

19. The advantages of this FBP long range planning approach can be summarized as follows:

    a) through the identification of future growth areas, Union can be more responsive to customer needs;
    b) optimum, least cost facilities can be identified to service the growth; and
    c) long-term security of supply to the overall system can be achieved.

20. The timing of facilities are based on current customer attachments and load forecasts which determine the need for additional facilities. Union updates each FBP on an "as required basis" to monitor the development of the system and to determine if the plan should be modified in any way.

MARKET DEMAND

21. It is Union's objective to provide adequate capacity to serve both current customers and new customers being added to the system. A specific objective of the Guelph FBP is to maintain adequate system pressure and provide additional capacity for the Guelph System to accommodate forecasted growth.

22. In recent years, areas served by the Guelph System have experienced growth in the number of customers requesting natural gas service to their home or business. This growth includes new residential and commercial/industrial customers using natural gas as their primary energy source, existing residential homes converting from other fuels to natural gas, and commercial/industrial businesses converting to natural gas for their energy needs.

23. As seen in Schedule 3, residential customers are forecast to increase by approximately 10,275 between Calendar 2009 and Calendar 2018. Over this same period, commercial customers are forecast to increase by approximately 905 and industrial and contract customers are forecast to increase by approximately 52.

24. Union is requesting approval to build the proposed pipeline in 2009, in order to increase system capacity to meet demand for Winter 2009/2010 and beyond.

NEED FOR ADDITIONAL CAPACITY

25. It is necessary to increase the capacity of the Guelph System in order to meet existing and forecasted loads during the Winter 2009/2010.

26. An unsteady state computer simulation of the Guelph system was performed or the Winter 2009/2010 using the forecasted market demand. Schedules 4 and 5 show the projected Winter 2009/2010 pressures at various locations on the Guelph system during a design day without and with the proposed facilities, respectively.

27. Puslinch Transmission Station has a required inlet pressure of 3067 kPa in order to deliver the Winter 2009/2010 design day demand of 2907 $10^3m^3/d$ on the Guelph system. Schedule 4

shows a minimum inlet pressure of 2702 kPa at Puslinch Transmission Station during design day conditions. The existing Guelph system has an available capacity of 2625 $10^3m^3/d$ resulting in a 282 $10^3m^3/d$ design day capacity shortfall during the Winter 2009/2010.

28. With the 4.9 km of NPS 12 reinforcement, Schedule 5 shows a minimum inlet pressure of 3550 kPa at Puslinch Transmission Station during Winter 2009/2010 design day conditions. This inlet pressure results in a system capacity surplus of 411 $10^3m^3/d$.

29. The forecasted regular growth will exceed existing capacity on the Guelph system. In order to avoid failure of natural gas service, it will be necessary to increase the capacity of the Guelph system by installing 4.9 km of NPS 12 reinforcement in 2009. The construction of the proposed pipeline will provide additional capacity to accommodate forecasted growth through Winter 2014/2015, with the next phase of NPS 12 looping required in 2015.

PROPOSED FACILITIES

30. Union proposes to construct 4.9 km of NPS 12 pipeline with a MOP of 6160 kPa. These proposed facilities will extend north from the terminal point of the Guelph Phase I Looping project constructed in 2004 at Lot 16, Concession 1 along Wellington County Rd 35 in Puslinch Township to a point south of Wellington Rd 34 at Lot 16, Concession 2. The proposed pipeline is shown in Schedule 6.

10 YEAR FACILITIES PLAN

31. The 5.9 km 2004 Loop was the first phase of the 10 year plan for the Guelph system. Union, in its design, attempts to integrate and stage the installation of facilities in a timeline to meet forecasted demand.

32. Phase II consists of 4.9 km of NPS 12 proposed looping of the Guelph system in 2009.

33. Phase III which is proposed to be constructed in 2015, would consist of 3.2 km of NPS 12.

34. These facilities will meet the 10 year forecasted demand for the Guelph system. The 10 year facilities are identified in Schedule 7.

ALTERNATIVES CONSIDERED

35. Attached at Schedule 8 is a document titled System Design Criteria for Reinforcement of the Guelph Distribution System Lateral. This document:

a) outlines the design methodology and process Union uses for reinforcement of system laterals;
b) provides a description of current Guelph facilities and system configuration; and
c) outlines the alternatives considered and the rationale for choosing the preferred alternative.

This schedule was prepared to comply with Board directive from the RP 2002-0001 Owen Sound Reinforcement Project proceeding.

DESIGN AND PIPE SPECIFICATIONS

36. The design and pipe specifications are outlined in Schedule 9. All the design specifications are in accordance with the *Ontario Regulations 210/01* under the *Technical Standards and Safety Act 2000, Oil and Gas Pipeline* Systems. This is the regulation governing the installation of pipelines in the Province of Ontario.

37. The proposed pipeline is located entirely within a Class 1 location. Since the majority of the pipeline is located on road allowance and in consideration for future potential development along the route, the proposed pipeline is designed to meet Class 2 location requirements.

38. The NPS 12 pipe has an outside diameter of 323.9 millimetres and a wall thickness of 5.6 millimetres. The pipe is to be manufactured by the electric resistance weld process and will have specified minimum yield strength of 448 MPa. The pipe will be manufactured to the *CSA Z245.1-07 Steel Line Pipe Standard for Pipeline Systems and Materials*.

39. The pipeline will be hydrostatically tested in accordance with the Ontario Regulation requirements.

40. The minimum depth of cover specified is 1.0 metre to the top of the pipe. Additional depth will be provided to accommodate existing or planned underground facilities, or in specific areas in compliance with the applicable regulated standards.

CONSTRUCTION PROCEDURES AND SCHEDULE

41. Schedule 10 describes the general techniques and methods of construction that will be employed in the construction of the proposed pipeline. Detailed are such activities as clearing, stringing of pipe, trenching, welding, backfill, tile repair, and clean up. Union's construction procedures have been continually updated and refined in order to be responsive to landowner concerns and mitigate potential environmental effects related to pipeline construction.

42. No blasting is anticipated along the route. When the project is constructed, Union's most up-to-date construction specifications will be followed.

43. Material is readily available for this project and Union foresees no problem in obtaining a contractor to complete the proposed construction.

44. Schedule 11 indicates the proposed schedule for 2009 construction. Construction of the proposed NPS 12 pipeline is scheduled to commence June of 2009, with the pipeline placed in service by November, 2009.

45. The ER will be provided to the construction contractor.

PROJECT COSTS

46. The total estimated cost of the proposed 4.9 km pipeline is $2,256,864.00 as shown in Schedule 12. This covers all costs related to material, construction and labour, environmental protection measures, land acquisitions, contingencies, and interest during construction.

47. The total estimated material cost of $745,682.00 covers the cost of all pipe, valves, fittings, coatings, miscellaneous items and stores overhead. These costs are based on historical values and current market conditions. The percentages for stores overheads cover all warehousing and handling costs of the material. The total estimated construction and labour cost amounting to $1,293,318.00 relates to the installation of the pipeline. This total includes the cost of all miscellaneous company and contract labour. Land rights are estimated at $40,000.00.

ECONOMIC FEASIBILITY

48. Union has employed an economic feasibility test in accordance with the OEB's recommendations in the E.B.O 188 report on *Natural Gas System Expansion* to assess the economics of this project.

49. The Board has found that new distribution facilities are in the public interest if no undue burden is placed on existing customers. When the proposed facilities are included in Union's 2009 new business investment portfolio, the resulting Profitability Index ("P.I.") would be 1.30. Similarly including the proposed facilities in Union's rolling portfolio as at October 31, 2008 would result in a P.I. of 1.54.

50. To provide the Board with additional information, a stand alone Discounted Cash Flow ("DCF") analysis has been completed. It can be found at Schedule 13. This schedule indicates that the proposed facilities have a Net Present Value ("NPV") of $3,060,976.00 and P.I. of 1.17.

51. Union therefore submits that this project is economically feasible and in the public interest.

Public Interest Considerations

52. There are a number of public interest factors for consideration as a result of the proposed facilities. These public interest considerations include the following:

i) Energy Cost Savings

Energy cost savings result as the Project Area residents and businesses are able to use lower cost natural gas that otherwise could not be delivered.

ii) Reduced Air Emissions

Natural gas, because of its clean-burning properties, has an increasingly important role to play in reducing the environmental impacts of energy use. Emissions from the combustion of natural gas are less than other fossil fuels on a per unit of energy basis.

iii) Utility Taxes

Income, property capital and provincial sales taxes paid by Union as a direct result of the project are included as costs in the economic analyses.

These taxes are not true economic costs of the project, but rather represent transfer payments within the economy as they are available for redistribution by the federal, provincial and municipal governments. Since these taxes have been included as a cost in the analyses, they must also be considered as a benefit in order to reflect the appropriate economic benefit on an overall basis.

LAND REQUIREMENTS

53. The majority of the proposed NPS 12 pipeline will be located within road allowance in the Township of Puslinch, County of Wellington.

54. At the northern terminus of the Project, Union purchased land which would allow the construction of the proposed pipeline and valve connection facilities. A plan showing the fee simple and temporary land use area is attached as Schedule 14.

55. Temporary land rights to facilitate Highway 401 crossing has been acquired. Attached as Schedule 15 is the temporary land use agreement for the Highway 401 crossing.

ENVIRONMENTAL MATTERS

56. Stantec Consulting Ltd. ("Stantec") has completed an ER to evaluate possible environmental and socio-economic effects of the proposed pipeline facility between the northern endpoint of the 2005 looping project and the Puslinch Station. During the process of completing the ER, Union determined that it would not be necessary to construct this entire length to meet the increased capacity requirements of the Guelph system. Union determined that it would only be necessary to construct 4.9 km at this time. The remaining length identified in the ER is proposed to be constructed at a later date.

57. The results of this ER indicate that the location of the proposed pipeline is environmentally acceptable. Mitigation measures to reduce the effects of construction are included in the ER.

58. Union believes that by following its standard construction practices and adhering to the mitigation measures proposed in the ER, construction of this project will have negligible impacts on the environment. No significant environmental or cumulative effects are anticipated from development of the proposed pipeline. A copy of the ER can be found at Schedule 16.

59. The ER has been prepared to meet the intent of the Ontario Energy Board's document *"Environmental Guidelines for Locating, Constructing and Operating Hydrocarbon Pipelines in Ontario [2003]"*. Union will comply with all mitigation measures recommended in the ER.

60. The objectives of the ER were to:

a) document existing environmental features;

b) identify agency and public concerns;

c) identify potential environmental impacts as a result of construction;

d) present mitigation techniques to minimize environmental impacts; and

e) Provide the pipeline contractor and environmental inspector involved in the construction of the pipeline with general and site-specific guidelines for environmental protection that supplement Union's construction specifications.

61. Copies of the ER were submitted to the Ontario Pipeline Coordination Committee ("OPCC") on September 19, 2008. Copies of the ER were also provided to the Grand River Conservation Authority and local municipalities. Copies were also made available upon request to landowners and First Nations. A summary of the comments regarding the ER and Union's responses will be provided in Schedule 17 as they are received.

62. Letters were sent out on June 5, 2008 to all directly and indirectly affected landowners along the pipeline route alternatives and on June 2, 2008 to agencies and First Nations. The letters were provided to inform these groups of the project and of the public information session.

63. To solicit input from the general public with respect to the project, a public information session was held. The session was used as a forum to identify the preliminary preferred pipeline route and provided the public an opportunity to review the details of the proposal and comment on the environmental information collected to date, as part of the ER process. The session was held on June 26, 2008, at the Valens Community Centre, North Flamborough. Attendees asked general questions concerning the location of the facility and pipeline construction methods as well as questions concerning natural gas service from the pipeline. There were no significant environmental concerns raised by the attendees of this session.

64. Union also met on site with each road superintendent from Wellington County and the Township of Puslinch, to solicit input on the alignment of the proposed pipeline. Following these discussions, each road superintendent was in agreement with Union's proposal. Union will continue to work with road superintendents until the project is completed.

65. During construction of the proposed pipeline, Union will implement an environmental inspection program. This program will ensure that the recommendations in the ER are followed. An environmental inspector will monitor pipeline construction activities and ensure that all activities comply with the mitigation measures found in the ER.

66. The total estimated environmental mitigation costs associated with the construction of the proposed pipeline are $257,000.00. These costs as shown in Schedule 18 are identified as preconstruction, construction and post-construction related.

67. Union will obtain approval from the Grand River Conservation Authority ("GRCA") for all watercourses crossed as part of this project. The GRCA is the "governing authority" and grants approval on behalf of the Ministry of Natural Resources and Department of Fisheries and Oceans as required.

SUMMARY

68. Union has experienced growth on the Guelph system since it was first constructed in the 1950's

and now requires additional facilities in order to serve the needs of the residents and businesses served by the Guelph system.

69. Union has completed a detailed review of facility alternatives and selected the most economical method for supplying additional supplies of natural gas to the Guelph area.

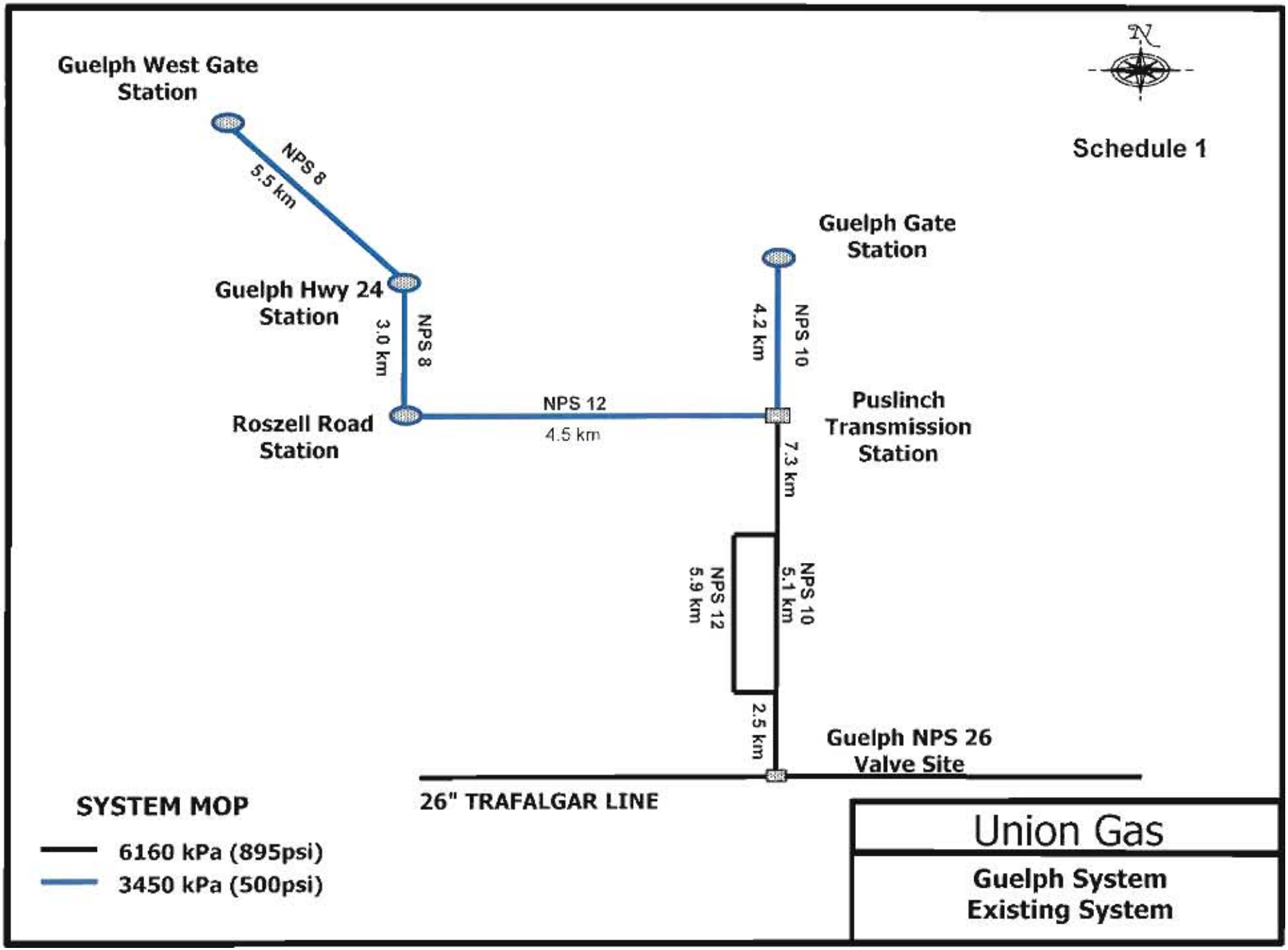
70. The proposed route of the pipeline is primarily along existing road allowances which will result in minimal impacts to the natural environment.

71. Union has completed an environmental assessment for the proposed pipeline and the results of the assessment show there will be no significant long term environmental impacts associated with the construction of the proposed facilities.

72. Union will construct the pipeline using experienced pipeline construction contractors following construction specifications which have been accepted in past projects and updated to reflect the site specific conditions found on this project.

73. Union will implement a lands relations program that will allow residents in the area of construction access to Union personnel so that in the event that there are landowner issues they may be resolved quickly.

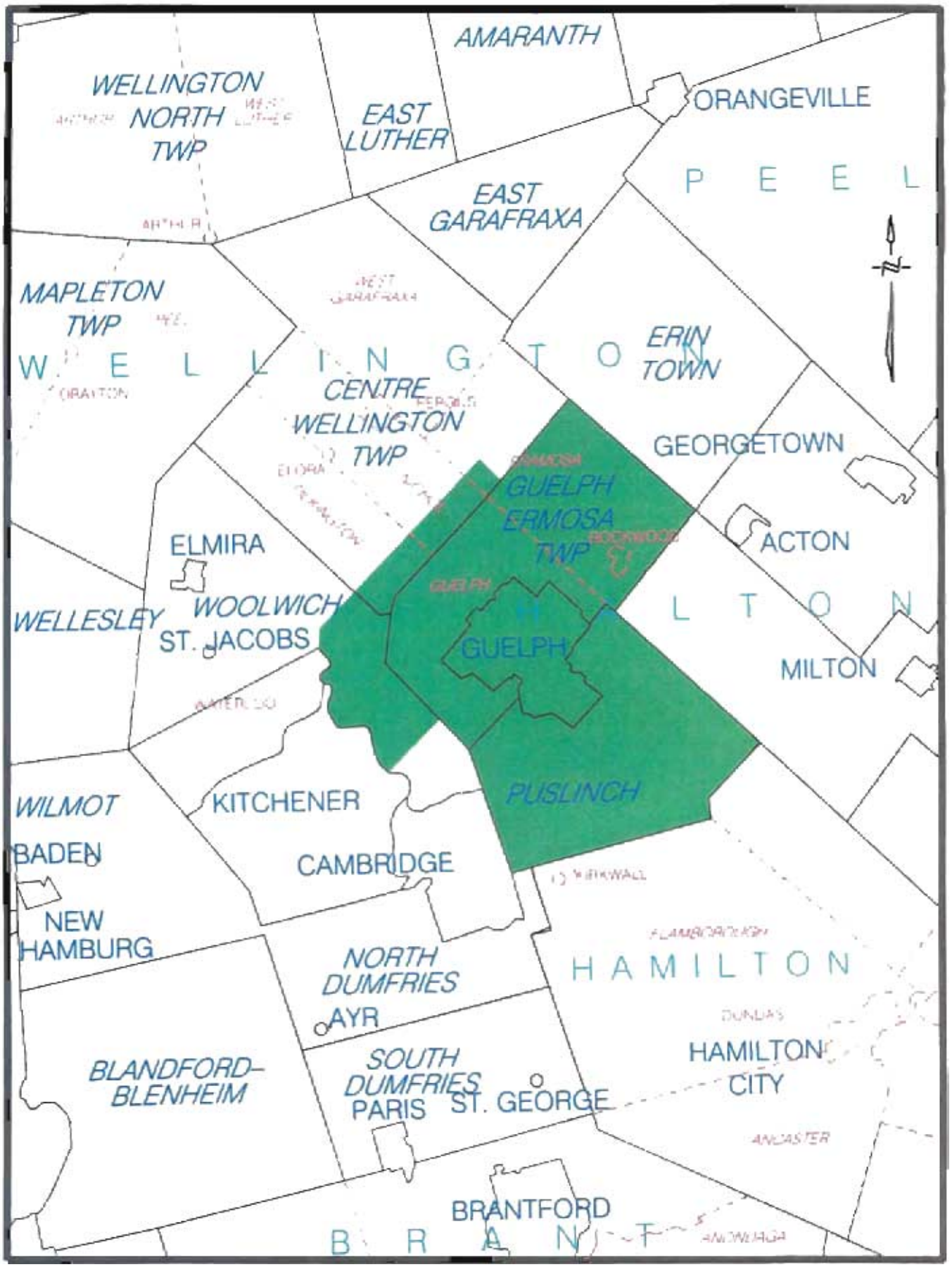
Schedule 1


Guelph West Gate Station
NPS 8
5.5 km
Guelph Hwy 24 Station
3.0 km
NPS 8
Roszell Road Station
NPS 12
4.5 km
Guelph Gate Station
4.2 km
NPS 10
Puslinch Transmission Station
7.3 km
NPS 12
5.9 km
NPS 10
5.1 km
2.5 km
Guelph NPS 26 Valve Site
26" TRAFALGAR LINE
N
Schedule 1
SYSTEM MOP
6160 kPa (895psi)
3450 kPa (500psi)
Union Gas
Guelph System
Existing System

Schedule 2

Schedule 2

FACILITIES BUSINESS PLAN STUDY AREA



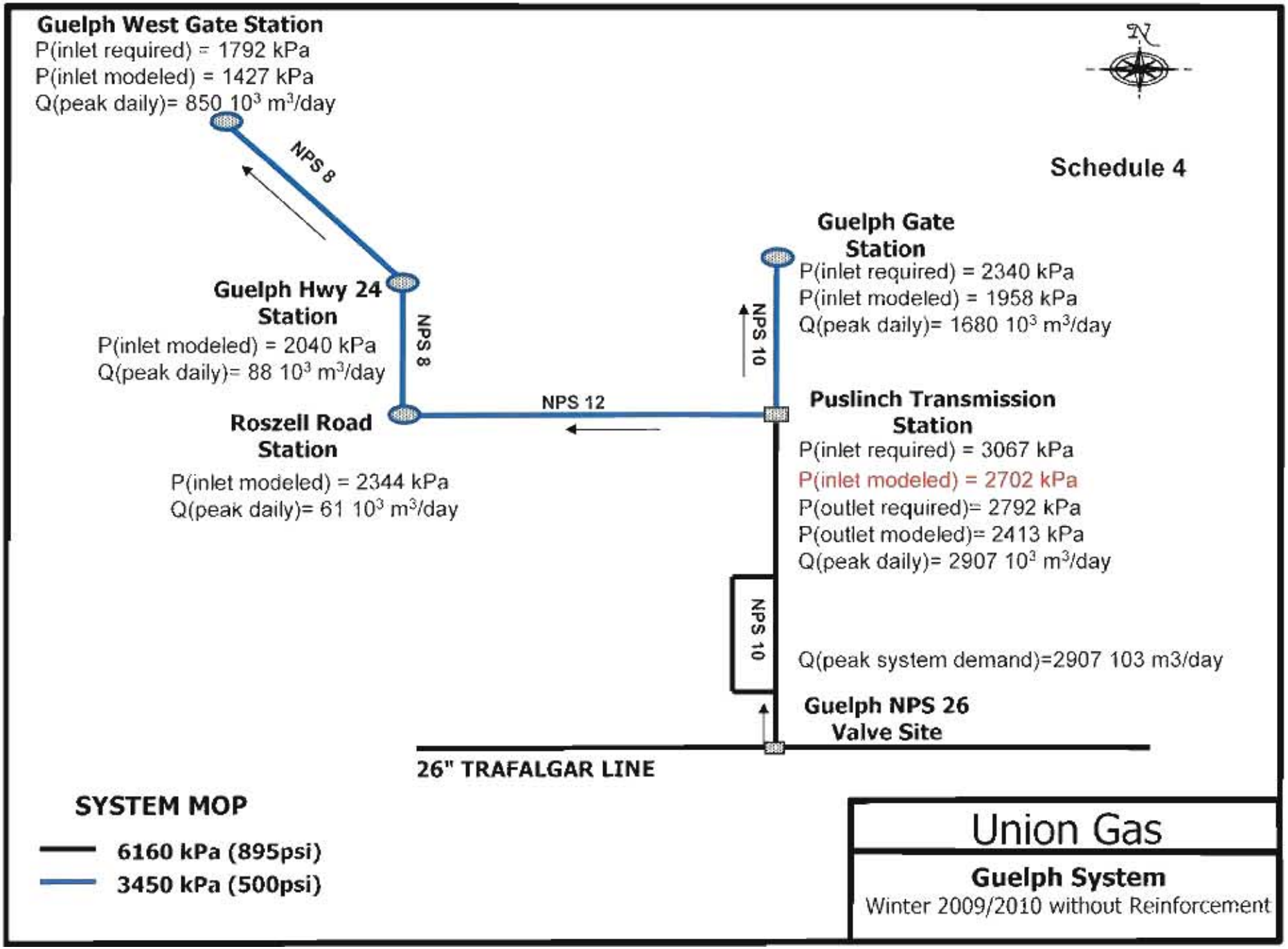
Schedule 3

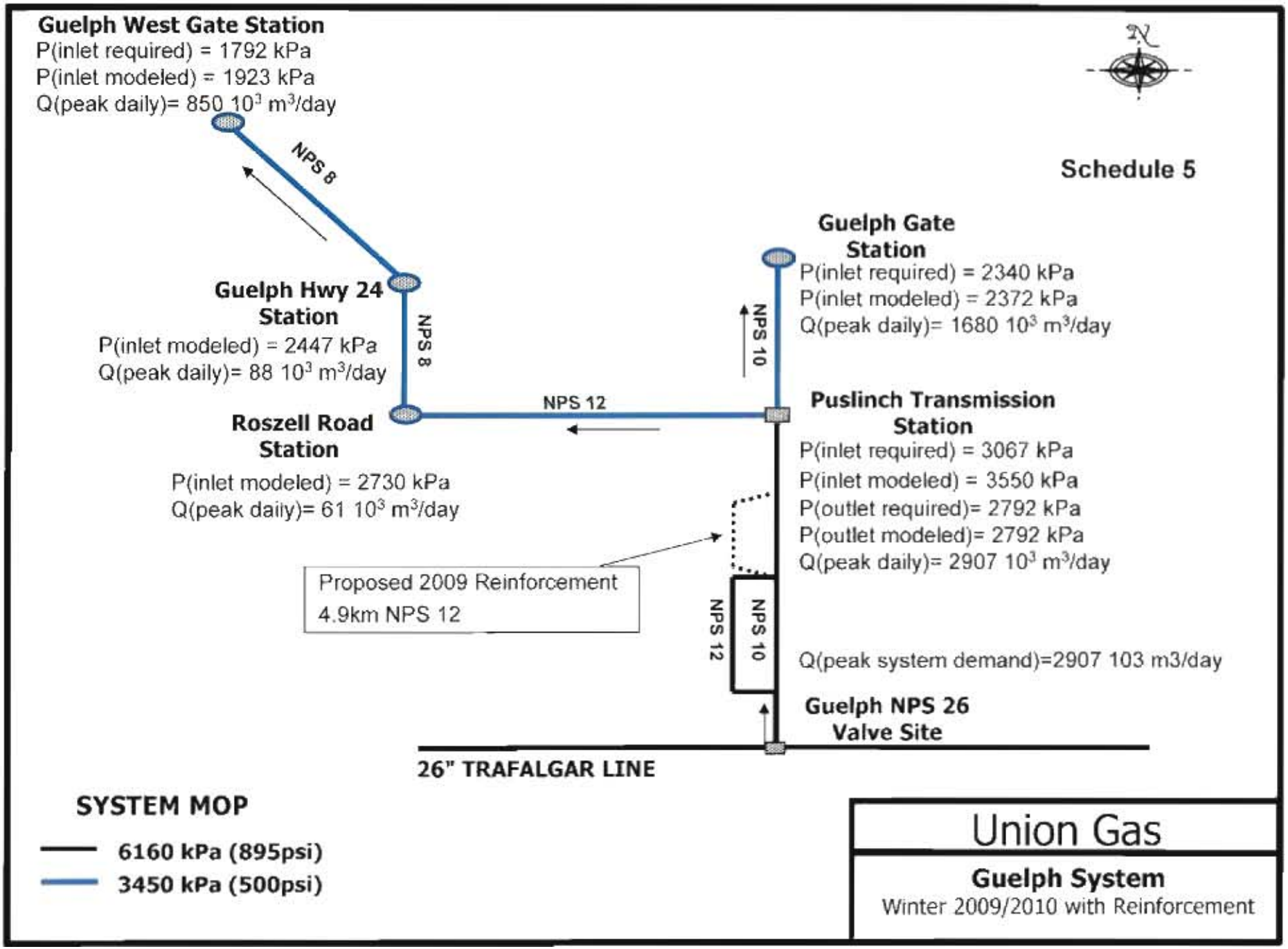
Schedule 3

Summary of FBP Forecast

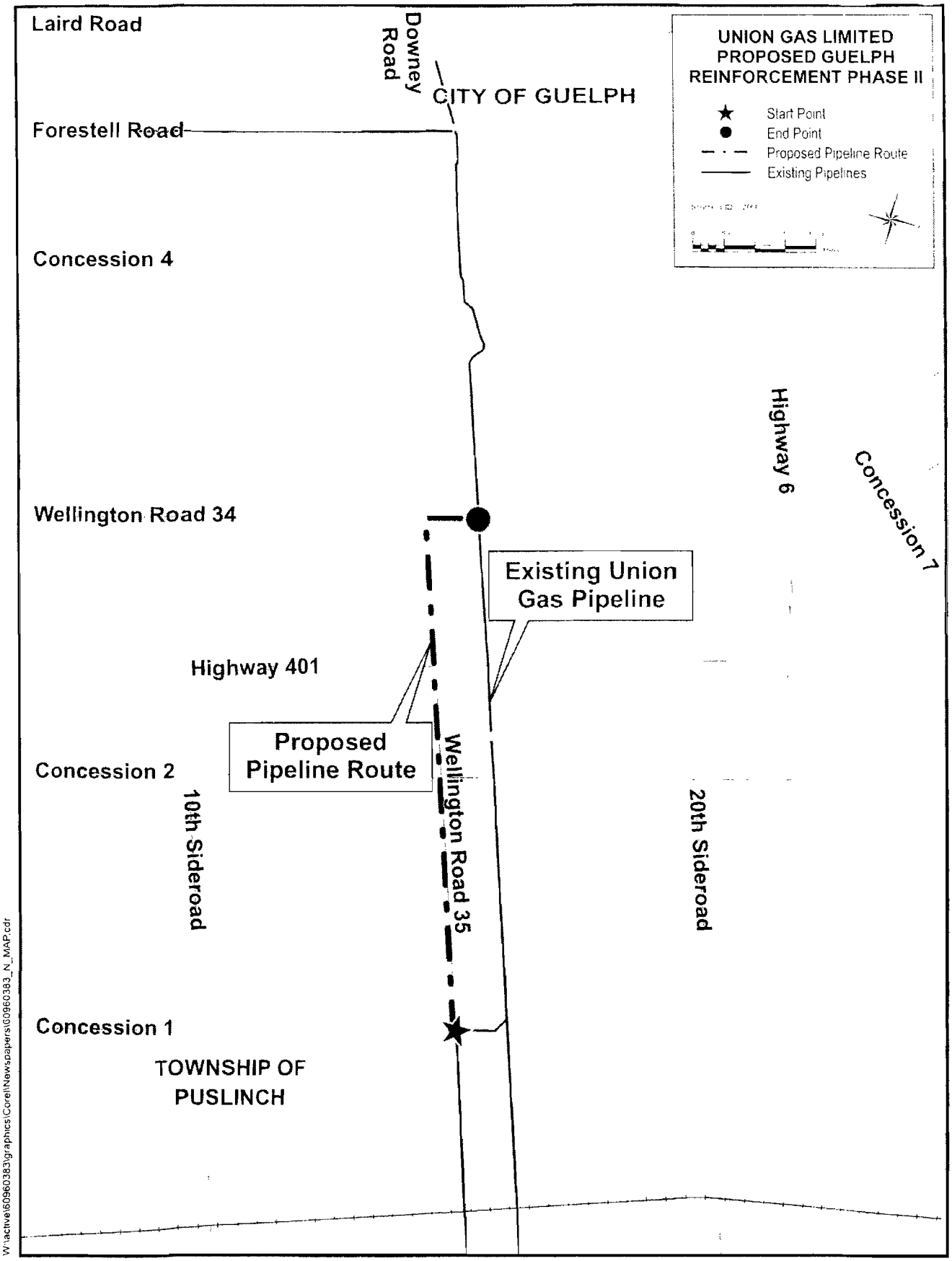
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Residential	975	1025	975	1050	1000	1050	1050	1050	1050	1050	10275
Commercial	85	95	95	85	95	90	90	90	90	90	905
Industrial	4	4	3	3	4	5	5	7	8	9	52
Total	1064	1124	1073	1138	1099	1145	1145	1147	1148	1149	11232

Schedule 4


Guelph West Gate Station
P(inlet required) = 1792 kPa
P(inlet modeled) = 1427 kPa
Q(peak daily)= 850 10³ m³/day
NPS 8
Schedule 4
Guelph Gate Station
P(inlet required) = 2340 kPa
P(inlet modeled) = 1958 kPa
Q(peak daily)= 1680 10³ m³/day
NPS 10
Guelph Hwy 24 Station
P(inlet modeled) = 2040 kPa
Q(peak daily)= 88 10³ m³/day
NPS 8
NPS 12
Roszell Road Station
P(inlet modeled) = 2344 kPa
Q(peak daily)= 61 10³ m³/day
Puslinch Transmission Station
P(inlet required) = 3067 kPa
P(inlet modeled) = 2702 kPa
P(outlet required)= 2792 kPa
P(outlet modeled)= 2413 kPa
Q(peak daily)= 2907 10³ m³/day
NPS 10
Q(peak system demand)=2907 103 m3/day
Guelph NPS 26 Valve Site
26" TRAFALGAR LINE
SYSTEM MOP
6160 kPa (895psi)
3450 kPa (500psi)
Union Gas
Guelph System
Winter 2009/2010 without Reinforcement

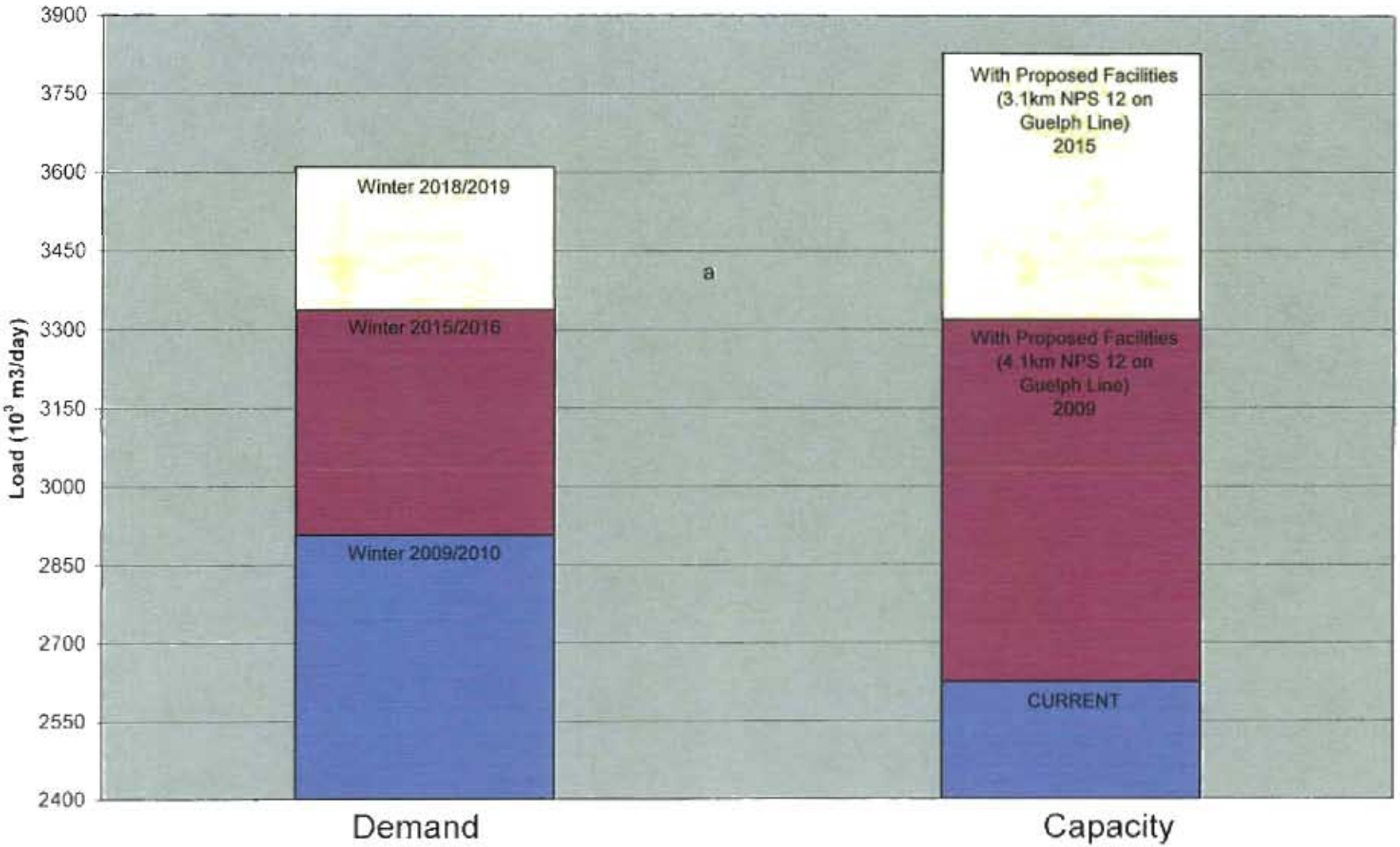

Guelph West Gate Station
P(inlet required) = 1792 kPa
P(inlet modeled) = 1923 kPa
Q(peak daily)= 850 10³ m³/day
NPS 8
Schedule 5
Guelph Gate Station
P(inlet required) = 2340 kPa
P(inlet modeled) = 2372 kPa
Q(peak daily)= 1680 10³ m³/day
Guelph Hwy 24 Station
P(inlet modeled) = 2447 kPa
Q(peak daily)= 88 10³ m³/day
NPS 8
NPS 10
NPS 12
Puslinch Transmission Station
P(inlet required) = 3067 kPa
P(inlet modeled) = 3550 kPa
P(outlet required)= 2792 kPa
P(outlet modeled)= 2792 kPa
Q(peak daily)= 2907 10³ m³/day
Roszell Road Station
P(inlet modeled) = 2730 kPa
Q(peak daily)= 61 10³ m³/day
Proposed 2009 Reinforcement
4.9km NPS 12
NPS 12
NPS 10
Q(peak system demand)=2907 103 m3/day
Guelph NPS 26 Valve Site
26" TRAFALGAR LINE
SYSTEM MOP
6160 kPa (895psi)
3450 kPa (500psi)
Union Gas
Guelph System
Winter 2009/2010 with Reinforcement

Schedule 6


Laird Road
Downey Road
CITY OF GUELPH
UNION GAS LIMITED
PROPOSED GUELPH
REINFORCEMENT PHASE II
Start Point
End Point
Proposed Pipeline Route
Existing Pipelines
Forestell Road
Concession 4
Highway 6
Concession 7
Wellington Road 34
Existing Union Gas Pipeline
Highway 401
Proposed Pipeline Route
Concession 2
Wellington Road 35
10th Sideroad
20th Sideroad
Concession 1
TOWNSHIP OF PUSLINCH
W:\active\60960383\graphics\CorelNewspapers\60960383_N_MAP.cdr

Schedule 7

10 Year Demand and Capacity of the Guelph System



Schedule 8

System Design Criteria for Reinforcement

on the

Guelph Distribution System Lateral

Union Gas Ltd.

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Schedule 8.3 - Start and End Points - Upstream of Puslinch

1.0 DOCUMENT PURPOSE

This document sets out the guidelines, process and criteria used to review the need for reinforcement of a lateral serving a distribution system, and to select the option that best meets the system demands.

The process involves examining existing facilities, forecasting system demand, understanding system operating constraints, identifying a range of reinforcement alternatives and selecting the best alternative.

Facilities selection process for the Dawn-Trafalgar system follows the process as described in Trafalgar Facilities Expansion Plan (TFEP) Review of System Design Criteria.

2.0 ASSESSMENT GUIDELINES

The process of developing a facilities reinforcement plan for a lateral serving a distribution system is summarized below.

1. Validate Model
2. Establish current and future system operating criteria
3. Forecast design day demands
4. Assess existing system demands and capacity
5. Identify alternative ways of creating additional capacity
6. Select the best alternative

2.1. Validate Model

The hydraulic model for the system in question is validated against actual flow conditions to ensure it properly reflects the current demands and system operation.

2.2. Establish Current and Future System Operating Criteria

A lateral will have a number of operating criteria to ensure the system can operate within its constraints:

- Maximum Operating Pressures (MOP) - by code, the lateral cannot operate in excess of its MOP.
- Minimum Delivery Pressure - the lateral must meet all required delivery pressures for customers it services.
- Minimum Inlet Pressure - the lateral must be able to maintain its minimum pressure with the actual operating pressures available to it at the upstream end of the lateral.
- Design Day Demands - these are normally the firm customer demands with interruptible customers off on a design day.
- Design Day Demand Profile - Typically, customers consume natural gas at varying rates over a 24-hour period. Heat sensitive customers generally consume a higher volume of gas in the early morning and the late afternoon. Union uses unsteady state modelling techniques to simulate this consumption pattern. Union is able to reflect the daily consumption pattern by developing profiles for each of its laterals using historical data. A typical demand profile is shown in Schedule 8.1.
- Weather - The majority of the customers served in Union South Area are heat sensitive and their peak demand occurs on a very cold winter day. Union designs its facilities to meet the demands on a very cold day, defined to be the design day. In this case, the design day temperature is -26 degrees Celsius, which is equivalent to a 44 degree day (DD). The probability of a 44 DD occurring is between 1% and 2 %, thus reasonably ensuring Union's customers can continue to be served during the coldest winters.

  A detailed study was completed in June 1998 and the results of this study supported the 44 DD design standard. This study was filed as part of E.B.L.O. 267 (1999/2000 Trafalgar System Expansion) Facilities hearing.

Current operating criteria may not be the same as future ones. For instance, flow patterns, looping or compression changes on the Dawn-Trafalgar system can impact the inlet pressures available to laterals off that system. Large customers (for example turbine powered cogeneration plants) may require higher minimum delivery pressure, adding a constraint to the system.

2.3. Forecast Design Day Demand

The design day demand is the peak demand of the customers served by the lateral. Future design day demands for a 10-year period are determined using the customer attachment forecast from the Facilities Business Plan (FBP).

The FBP is an internal planning process used by Union for the identification of reinforcement facilities required to support forecasted growth over a specific geographic area. The FBP includes a year-by year customer attachment forecast of demands and their locations on the system. Based on this forecast, future design day demands are used to develop long term reinforcement plans.

Based on the FBP forecast, future facilities requirements both new business and reinforcement, can be identified, economically evaluated based on the Board's E.B.O. 188 guidelines, optimized and scheduled to meet the future demands on the system.

2.4. Assess Existing Demands and Capacity

The existing system is reviewed to determine the ability of the existing lateral to meet the demands of current customers. If forecasted demands are not expected to exceed existing capacity, no further action is required within this guideline. If forecasted demands are expected to exceed existing capacity within 2 to 3 years (the lead time required to assess, design, obtain approval and construct facilities if required) the process continues through the following steps.

2.5. Identify Alternatives

If the existing facilities do not have sufficient capacity to meet the future demands, then a wide range of alternatives is generated. These may include, but are not limited to:

- upgrading the existing lateral;
- upgrading existing stations;
- looping (reinforcing along the existing route) the existing lateral;
- backfeeding (reinforcing through an entirely different route);
- joining two previously independent distribution systems;
- installing compression;
- obtaining supply from nearby non-Union pipelines.

2.6. Select Best Alternative

The above alternatives are established during the early stages of a reinforcement plan. All alternatives are given preliminary review for feasibility, and promising ones are organized into a key alternatives list.

Each alternative on the key alternatives list is further evaluated in detail to make a final recommendation for reinforcement.

Criteria for selecting the best alternative include, but are not limited to:

- economics;
- cost;
- construction feasibility;
- number of years of capacity created;
- reliability of supply;
- system integrity benefits;
- other benefits or shortcomings.

The resulting best alternative is carried forward for internal and external approvals. Schedule 8.2 provides a visual representation of the process described above.

2.7. Summary

Although each situation brings its own unique characteristics, the above guidelines set out the principles to be used for assessing the need for reinforcement of a lateral servicing a distribution system at Union Gas.

3.0 CURRENT APPLICATION

This section applies the assessment guidelines as discussed in Section 2.0 of the current OEB application for reinforcement of the Guelph System.

3.1. Facilities

The following section will describe the facilities of the Guelph system, including the pipelines and delivery locations. A schematic of the Guelph system can be found in Schedule 1 of the evidence.

3.1.1. Pipelines

The Guelph system is comprised of a single NPS 10 pipeline that was installed in 1957 from the Dawn-Trafalgar System to Puslinch Transmission Station. In 2004, a 5.9km NPS 12 loop was installed approximately 2.5 km north of the Dawn Trafalgar lines. The Guelph system is supplied by Union's NPS 26 Dawn-Trafalgar system to Puslinch Transmission Station which feeds the City of Guelph. This pipeline operates at a common pressure with Union's Dawn-Trafalgar system at a MOP of 6160 kPa.

At Puslinch Transmission Station there are two pressure reductions. One pressure reduction is to an outlet MOP of 3450 kPa which supplies high pressure lines feeding the northeast and northwest branches of the Guelph System. The other pressure reduction is an outlet MOP of 420 kPa which directly supplies a portion of the City of Guelph's distribution network.

3.1.2. Delivery Locations

The northeast branch of the 3450 kPa MOP Guelph System delivers gas to Guelph Gate Station. At Guelph Gate Station, gas is regulated into a 1900 kPa MOP system and a 420 kPa MOP system.

The northwest branch of the 3450 kPa MOP Guelph System delivers gas to Rozelle Road Station, Guelph Hwy. 24 Station, and Guelph West Gate Station. At Rozelle Road Station and Guelph Hwy. 24 Station, gas is regulated into a 420 kPa MOP system. At Guelph West Gate, gas is regulated into a 1900 kPa MOP system, and a 420 kPa MOP system. All of the above 1900 kPa and 420 kPa system are interconnected and form the urban Guelph distribution system.

3.2. Validate Model

The Guelph unsteady state model was validated for February 12, 2008 which was a 31.4 DD, and accurately models the system.

3.3. Operating Criteria

The following section will describe the operating criteria of the Guelph system.

3.3.1. Maximum Operating Pressure

The maximum operating pressure (MOP) of the Guelph system is 6160 kPa. The MOP of the lateral downstream of Puslinch Transmission Station is 3450 kPa.

3.3.2. Minimum Delivery Pressure

There are 3 key locations along the Guelph system where system pressures must be maintained above a specific minimum pressure during a design day. These locations are the inlet pressures to Guelph Gate Station, Guelph West Gate Station and Puslinch Transmission Station.

The required minimum inlet pressure to Guelph Gate Station is 2340 kPa, and the minimum required inlet pressure to Guelph West Gate Station is 1792 kPa.

As the system demand increases, flow rates in the lateral increase causing pressure losses to increase. Therefore the required outlet pressure at Puslinch Transmission Station may increase in order to maintain the required minimum inlet pressures to Guelph Gate Station and Guelph West Gate Station.

As the required outlet pressure at Puslinch Transmission Station increases, the minimum required inlet pressure at Puslinch Transmission Station also increases. During the winter of 2009/2010, Puslinch Transmission Station has a minimum required inlet pressure of 3067 kPa.

3.3.3. Minimum Inlet

The Guelph system is impacted by the operation of Union's Dawn-Trafalgar system since they operate at a common pressure. Union uses the Dawn-Trafalgar pressure profile at the Guelph system connection. This pressure profile is generated for a design day on Union's Dawn-Trafalgar system.

3.4. Existing and Forecast Design Day Demands and Capacity

The design day demands for the Guelph system were developed from the Guelph FBP Study. A summary of the forecasted demands on the Guelph System are found in Schedule 7.

3.5. Identify Reinforcement Alternatives

Union considers a broad range of alternatives during the development of a reinforcement plan. These alternatives are investigated at varying levels of detail depending upon their likely feasibility. The following alternatives were identified and assessed for the Guelph System Reinforcement:

3.5.1. New Lateral to Supply Guelph

A review was completed in 2001 to assess the feasibility of constructing a new lateral from Union's Dawn-Trafalgar system to Rozelle Road Station which would supply the Guelph system. This alternative involves installing 12.4 km NPS 12 pipe and 5.1 km of NPS 10 pipe, and tying into the 3450 kPa MOP Guelph System using a new pressure regulating station.

In order to benefit from this reinforcement alternative, the entire 17.5 km pipeline and new regulating station would have to be installed at once. Moreover, a new mainline valve assembly would be required along the Dawn-Trafalgar lines. Total cost of this reinforcement alternative was approximately $8,600,000, in 2001 and therefore was later rejected due to cost.

3.5.2. New Supply from Enbridge Consumers Gas

In discussion with Enbridge Consumers Gas, the closest supply point is the Erin distribution system. This system is 15 km from the end of the Guelph distribution system. There is not adequate pressure or capacity from that system to provide reinforcement to Guelph. Enbridge's closest major diameter HP system is located near Orangeville and is 37 km from Union's Guelph distribution system. A connection at this point would require approximately 37 km of NPS 8 diameter pipe and a new station at significantly more costs than other alternatives. Therefore this alternative was later eliminated.

3.5.3. Compression

Compression at Puslinch Transmission Station to boost system pressures was considered as a reinforcement alternative for the Guelph system. This alternative would require a 400 HP compressor in order to provide the required outlet pressures at Puslinch Transmission station over the next 5 years. The initial capital cost for this alternative is estimated at $4,000,000, not including the cost of back-up compression ("Loss of Critical Unit" protection or "LCU"). In addition, there are also fuel and maintenance costs associated with this option. Furthermore, compression would provide no security of supply by way of a second pipeline to the Guelph System. Therefore, this alternative was later rejected.

3.5.4. Loop Downstream of Puslinch Transmission Station

Looping the Guelph system downstream of Puslinch Transmission Station was considered as a reinforcement alternative to reduce the pressure loss in the 3450 kPa MOP Guelph system. However, inadequate inlet and outlet pressures at Puslinch Transmission Station made this option infeasible.

3.5.5. Loop Upstream of Puslinch Transmission Station

Looping a portion of the 6160 kPa MOP Guelph system from the Dawn-Trafalgar system was considered as an alternative. The evaluation indicated that this alternative was the preferred alternative. Within this alternative an iterative process was used to identify the optimal looping location.

Several start and end points were selected through site visits, taking into consideration construction issues and environmental concerns. An engineering and economic analysis was completed for each alternative to determine if it would meet the system demand for the next 3 to 5 years and ensure favourable project economics. The results of the engineering and economic analysis are shown in the table below, and the start and end points for each sub-alternative are shown in Schedule 8.3.

Start Point	End Point	Loop Length* (km)	Total Loop Cost ($M)	Years of Capacity	FBP P.I.
A	B	2.4	$2.308	2	1.07
C	D	4.9	$2.256	6	1.17
C	E	7.2	$4.378	13	1.14

Notes:
* Loop length is the total length of actual reinforcement pipeline, which due to routing is longer than a direct line between the points.

3.5.6. Selection of Best Alternative

The best alternative, of all considered which is highlighted in the above table is to loop the 6160 kPa Guelph system upstream of Puslinch Transmission Station. It was selected because it had the highest PI and lowest cost while accommodating 6 years of forecasted growth.

3.5.7. Summary

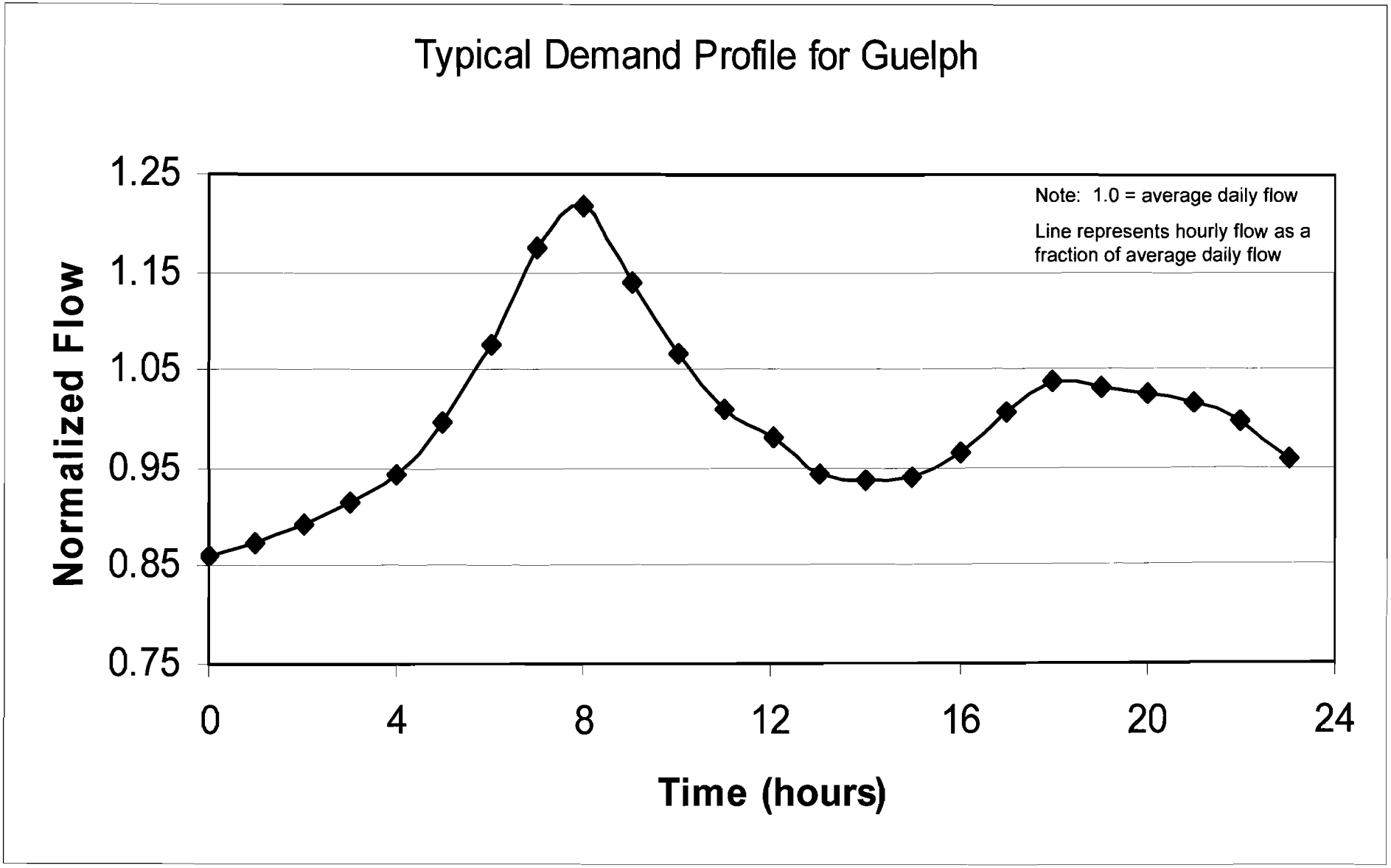
Union reviewed a number of alternatives including station upgrades, a new lateral to Guelph, looping the existing lateral, and taking a supply from Enbridge at Orangeville.

Union proposes to construct the best alternative which is 4.9 km looping of the NPS 12 6160 kPa MOP lateral between the intersection of Concession 1 and County Road 35 and Regional Road 34.

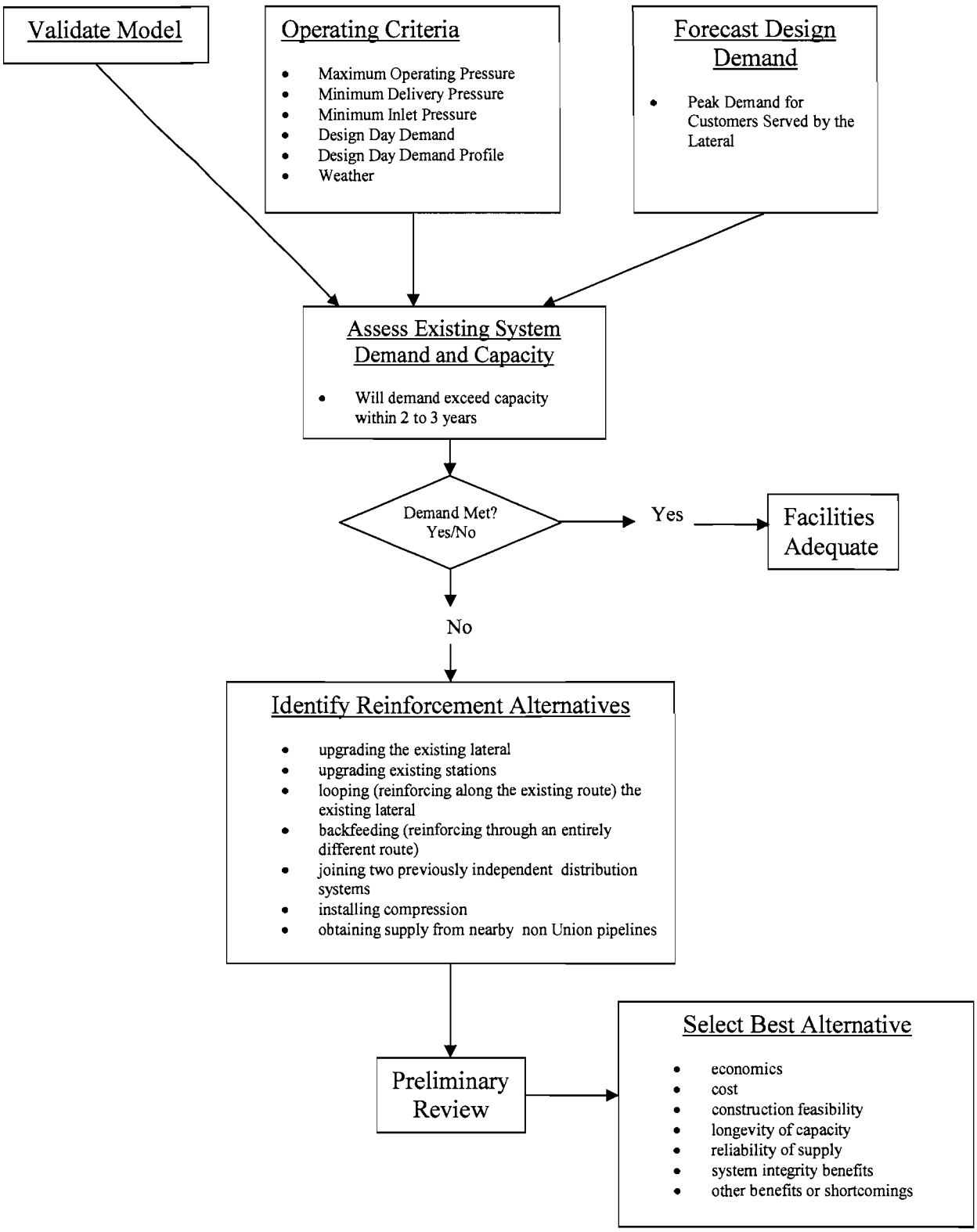
4.0 CONCLUSION

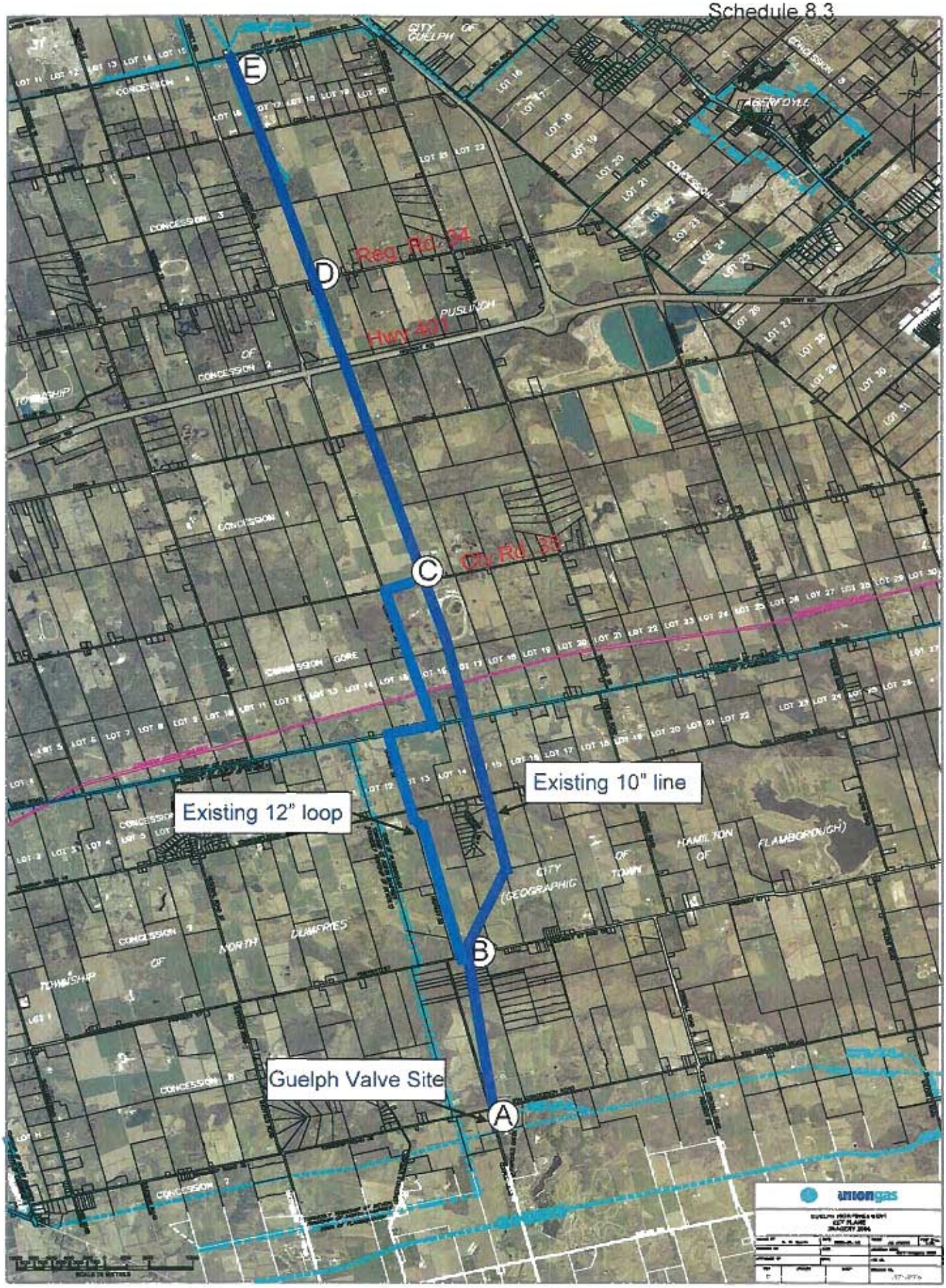
Union uses a number of criteria to review the need for reinforcement of a lateral serving a distribution system.

The process involves examining existing facilities, forecasting system demand, and understanding system operating criteria in order to identify a number of reinforcement alternatives. These alternatives are then investigated at varying levels of detail depending upon project feasibility including engineering, cost, and environmental considerations, and security of supply.


Typical Demand Profile for Guelph
Normalized Flow
1.25
1.15
1.05
0.95
0.85
0.75
Note: 1.0 = average daily flow
Line represents hourly flow as a fraction of average daily flow
0
4
8
12
16
20
24
Time (hours)

Reinforcement Assessment Flow Chart




E
D
C
B
A
Reg Rd 34
Hwy 401
City Rd 35
Existing 12" loop
Existing 10" line
Guelph Valve Site
CITY OF GUELPH
CONCESSION 4
CONCESSION 3
CONCESSION 2
CONCESSION 1
CONCESSION GORE
TOWNSHIP OF NORTH DUMFRIES
CITY OF HAMILTON (GEOGRAPHIC TOWN OF FLAMBOROUGH)
PUSLINCH
AGSTON HALL
aniongas

Schedule 9

Schedule 9

GUELPH REINFORCEMENT PROJECT
DESIGN AND PIPE SPECIFICATIONS

Design Specifications

Class Location	-	Class 2
Design Factor	-	0.800
Location Factor (General)	-	0.900
Location Factor (Roads)	-	0.625
Maximum Design Pressure	-	6160 kPa
Maximum Operating Pressure	-	6160 kPa
Test Medium	-	Water
Test Pressure	-	8624 kPa min.
Valves/ Fittings	-	PN 100
Minimum Depth of Cover	-	1.0 m

Pipe Specifications

Size	-	NPS-12
Wall thickness	-	5.6 mm
Type	-	Electric Resistance Weld
Description	-	C.S.A. Standard Z245.1-02
Grade	-	448 Mpa
Category	-	II
Coating	-	Extruded Polyethylene (Yellow Jacket)

GENERAL TECHNIQUES AND METHODS OF CONSTRUCTION

1. Union Gas Limited ("Union") will provide its own inspection staff to enforce Union's construction specifications and *Ontario Regulation 210/01 under the Technical Standards and Safety Act 2000, Oil and Gas Pipeline Systems.*
2. Pipeline construction is divided into several crews that create a mobile assembly line. Each crew performs a different function, with a finished product left behind when the last crew has completed its work.
3. Union's contract specifications require the contractor to erect safety barricades, fences, signs or flashers, or to use flag persons as may be appropriate, around any excavation across or along a road.
4. It is Union's policy to restore the areas affected by the construction of the pipeline to "as close to original condition" as possible. As a guide to show the "original condition" of the area, photos and/or a video will be taken before any work commences. When the clean up is completed, the approval of the landowner or appropriate government authority is obtained.
5. Construction of the pipeline includes the following activities:

Locating Running Line

6. Union establishes the location where the pipeline is to be installed ("the running line"). For pipelines within road allowances, the adjacent property lines are identified and the running line is set at a specified distance from the property line. For pipelines located on private easement, the easement is surveyed and the running line is set at the specified distance from the edge of the easement. The distance from the start of the pipeline (or other suitable point) is marked on the pipeline stakes and the drawings.

Clearing and Grading

7. The right-of-way is prepared for the construction of the pipeline. When required, bushes, trees and crops are removed and the ground leveled. When required, the topsoil is stripped and stored, and/or sod is lifted.

Stringing

8. The pipe is strung adjacent to the running line. The joints of pipe are laid end-to-end on supports that keep the pipe off the ground to prevent damage to the pipe coating.

Welding

9. The pipe is welded/fused into manageable lengths. The welds in steel pipe are radiographically inspected, if required, and the welds are coated.

Burying

10. Pipe may be buried using either the trench method or the trenchless method. All utilities that will be crossed or paralleled by the pipeline are located by the appropriate utility prior to installing the pipeline. Prior to trenching, all such utilities will be hand-located or hydro vacuumed.

    Trench Method: Trenching is done by using a trenching machine or hoe excavator depending upon the ground conditions. Provisions are made to allow residents access to their property, as required. All drainage tiles that are cut during the trench excavation are flagged to signify that a repair is required. All tiles are measured and recorded as to size, depth, type and quality. This information is kept on file with Union. If a repair is necessary in the future, Union will have an accurate method of locating the tile. Next, the pipe is lowered into the trench. For steel pipe, the pipe coating is tested using a high voltage electrical tester as the pipe is lowered into the trench. All defects in the coating are repaired before the pipe is lowered in. Next, if the soil that was excavated from the trench is suitable for backfill, it is backfilled. If the soil is not suitable for backfill (such as rock), it is hauled away and the trench is backfilled with suitable material such as sand. After the trench is backfilled, drainage tile is repaired.

    Rock Excavation: Rock in solid beds or masses will be removed by "Hoe Ram", where practical. Where rock that is too hard to "Hoe Ram" is encountered, blasting will be permitted in accordance to Union's construction procedures and the *Canadian Explosives Act*. The contractor shall obtain all necessary permits and shall comply with all legal requirements in connection with the use, storage and transportation of explosives.

    Trenchless Method: Trenchless methods are alternate methods used to install pipelines under railways, roads, sidewalks, trees and lawns. There are two trenchless methods that could be used for the proposed NPS 8 pipeline, depending on the soil conditions, and the length and size of the installation. These methods are boring (auguring) and directional drilling.

Tie-Ins

11. The sections of pipelines that have been buried using either the trench or trenchless method are joined together (tied-in).

Cleaning and Testing

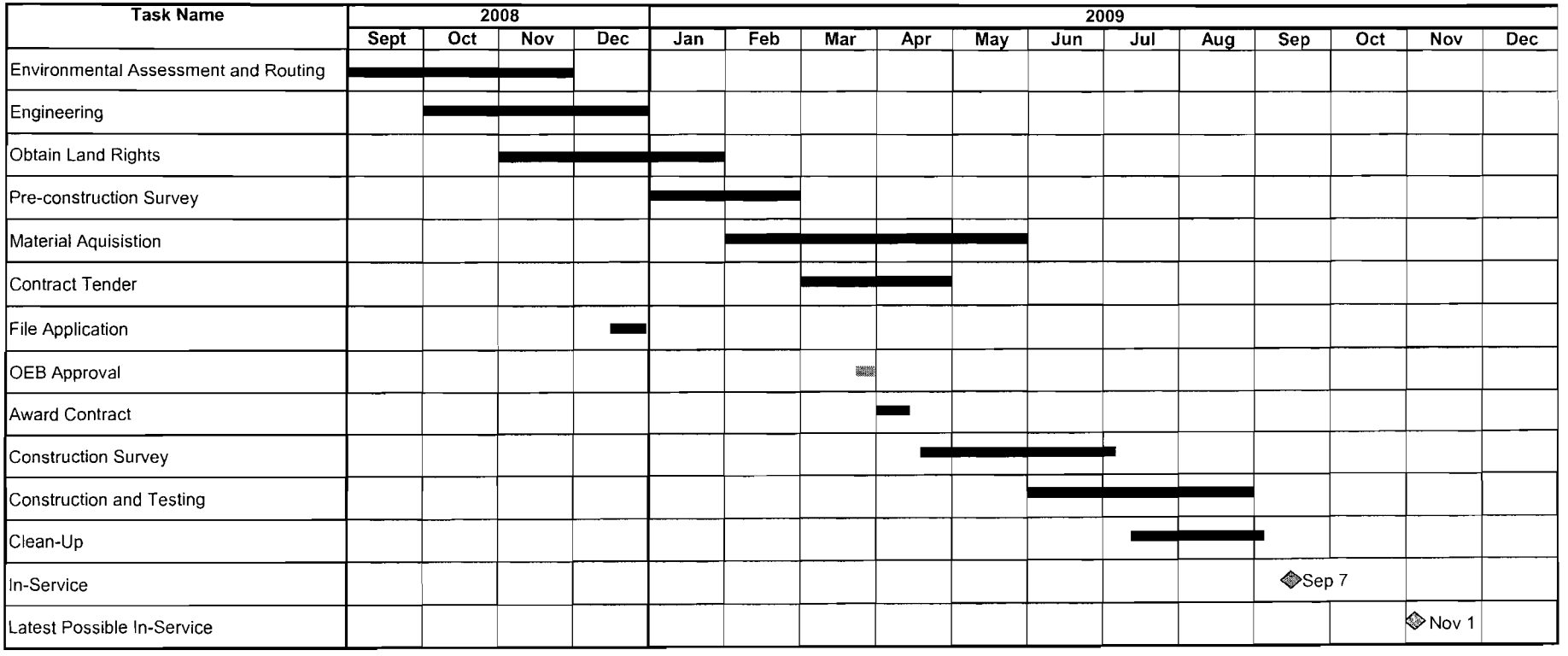
12. To complete the construction, the pipeline is cleaned, tested in accordance with Union's specifications using water.

Restoration

13. The final activity is the restoration. The work area is leveled, the sod is replaced in lawn areas and other grassed areas are re-seeded. Where required, concrete, asphalt and gravel are replaced to return the areas to as close to the original conditions as possible.

Schedule 11

Guelph Reinforcement
Pipeline Construction Schedule



Schedule 12

GUELPH REINFORCEMENT PROJECT
TOTAL ESTIMATED PROJECT COSTS

Pipeline and Equipment		
4900 metres of NPS 12	$ 637,400	
Valves, fittings, misc.	82,200	
Stores Overhead	26,082	
Total Pipeline and Equipment		$ 745,682
Construction and Labour		
Prime Contract	$ 973,268	
Ancillary Contracts	160,000	
Company Labour	120,050	
Land Rights	40,000	
Total Construction and Labour		$1, 293,318
Total Pipeline and Equipment and Construction and Labour		$2,039,000
Contingencies		185,364
Sub-Total		$2,224,364
Interest During Construction		32,500
Total Estimated Project Costs		$2,256,864

Includes the Estimated Environmental Costs Identified in Schedule 18

Union South

Project Information Summary

Guelph Phase II Re Inforcement FBP

November 7, 2008

Rate Area: UnionSouth
Description: Economic analysis for the 10 year project
Division: Waterloo
Project Numl No project number supplied
Comments: Economic analysis for the 10 year project

DCF Economic Results Base Case	
Profitability Index	**1.17**
Net Present Value	**3,060,976**
Total Project ROE	**12.56%**
No Rebase Cash Flow ROI	**13.05%**
First yr. of Corp. Revenue	**9**

Sensitivities on DCF Base Case			
Capital		Volume	
Less 5 %	Add 5 %	Less 5 %	Add 5 %
1.22	1.12	1.15	1.19
3,846,968	2,274,985	2,680,557	3,437,775
13.78%	11.43%	12.07%	13.05%
13.78%	11.43%	12.07%	13.05%
6	6	6	6

Cumulative Discounted Cash Flows:

Inflows	$	21,232,947
Outflows	$	18,171,971
Year the Cumulative PI =1 0		27

Revenue (Deficiencies)/Suffi		2009		2010		2011		2012		2013		Final Year
Company Total	$	(81,797)	$	(237,094)	$	(168,298)	$	(250,364)	$	(186,678)	$	1,499,167
Residential Class	$	(483,116)	$	(311,991)	$	(320,988)	$	(464,510)	$	(384,740)	$	1,533,978
Per Residential Customer	-	0.48	-	0 31	-	0 31	-	0 45	-	0 38		1.50
Earnings Before Interest and	$	(58,591)	$	192,446	$	388,446	$	563,935	$	744,399		
Financial Statement Earning	$	(28,776)	$	5,717	$	91,168	$	109,624	$	208,810		
Financial Statement ROE *		-10 47%		0.31%		3.92%		3 47%		5.44%		

Aid Information

Total amount of contribution required for desi	1.00	$ -
Remaining amount of contribution after lump sum for desired		$ -

Input Summary

	2009	2010	2011	2012	2013	Total Project
Number of Attachments	1,064	1,124	1,073	1,138	1,097	11,230
Gross Capital Expenditures	$ 4,597,567	$ 1 203,982	$ 1,849,713	$ 3,223,736	$ 1,178,419	$ 21,373,457
Contribution In Aid of Constr	$ -	$ -	$ -	$ -	$ -	$ -
Net Capital	$ 4,597,567	$ 1,203,982	$ 1,849,713	$ 3,223,736	$ 1,178,419	$ 21,373,457

Project Life	40 0
Discount Rate	5.36%
In Service Month	Nov
Rate Inflator	0.00%
Inflation Factor	0 00%

Union South

Discounted Cash Flow Analysis
Guelph Phase II Re Inforcement FBP
November 11, 2008

Project Year		2009 Year 1	2010 Year 2	2011 Year 3	2012 Year 4	2013 Year 5	2014 Year 6	2015 Year 7	2016 Year 8	2017 Year 9	2018 Year 10	2019 Year 11	2020 Year 12
Cash Inflows													
Total Sales Margin		32,200	510,347	857,964	1,204,179	1,553,909	1,906,750	2,259,300	2,630,802	2,995,300	3,362,329	3,546,860	3,546,860
O & M Expense		37,308	-114,056	-191,180	268,726	347,101	425,846	-506,250	-586,724	-667,384	-748,138	-788,573	-788,573
Property (Municipal) Tax		-20,875	-30,233	40,188	-75,783	-84,939	-94,402	-114,148	-123,661	-133,200	142,766	142,766	142,766
Capital Tax		12,841	-15,827	20,571	-29,398	-31,957	34,551	-46,208	-48,291	-50,322	52,307	-50,591	-48,955
Income Tax		47,235	-70,104	-149,855	-254,294	282,160	-376,328	-477,215	-494,240	-583,513	673,936	708,962	-719,698
Large Corporation Tax		0	0	0	0	0	0	0	0	0	0	0	0
Total Cash Inflow	$	8,413	280,127	450,170	575,977	767,752	977,624	1,125,484	1,377,888	1,560,901	1,745,177	1,855,968	1,846,889
Cash Outflows													
Capital Expenditure		-4,597,567	-1,203,982	-1,849,713	-3,223,736	-1,178,419	-1,222,316	-4,370,976	-1,235,316	-1,241,816	-1,249,616	0	0
Contribution		0	0	0	0	0	0	0	0	0	0	0	0
Change in Working Capital		-3,854	-16,934	-15,655	-15,423	-15,568	-16,015	-16,185	-16,257	-16,540	-16,787	-8,499	0
Total Cash Outflows	$	-4,601,421	-1,222,916	-1,865,368	-3,239,159	-1,193,987	-1,238,331	-4,387,161	-1,251,573	-1,258,356	-1,266,403	-8,499	0
Net Cash Flows	$	-4,593,008	-942,789	1,415,199	2,663,181	-426,235	260,706	3,261,677	126,313	302,544	478,774	1,847,469	1,846,889
NPV per Period		-4,588,129	-911,045	1,314,837	2,364,289	-327,585	204,702	2,489,127	88,903	202,512	304,340	1,115,572	1,056,847
Cumulative NPV	$	-4,588,129	-5,499,174	-6,813,811	-9,178,100	-9,505,685	-9,710,387	-12,199,514	-12,110,612	-11,908,100	-11,603,760	-10,488,189	-9,429,342
Net Present Value Project	$	3,060,976											
Profitability Index per Period		0.00	0.05	0.09	0.12	0.16	0.21	0.22	0.27	0.31	0.36	0.42	0.48
Profitability Index Project		1.17											

Union South

Discounted Cash Flow Analysis
Guelph Phase II Re Inforcement FBP
November 11, 2008

2021 Year 13	2022 Year 14	2023 Year 15	2024 Year 16	2025 Year 17	2026 Year 18	2027 Year 19	2028 Year 20	2029 Year 21	2030 Year 22	2031 Year 23	2032 Year 24	2033 Year 25	2034 Year 26
3,546,860	3,546,860	3,546,860	3,546,860	3,546,860	3,546,860	3,546,860	3,546,860	3,132,997	2,719,134	2,719,134	2,719,134	2,719,134	2,719,134
788,573	788,573	788,573	788,573	-788,573	-788,573	-788,573	-788,573	-749,578	-710,583	-710,583	-710,583	-710,583	-710,583
142,766	-142,766	142,766	-142,766	-142,766	-142,766	-142,766	-142,766	-142,766	-142,766	-142,766	-142,766	-142,766	-142,766
-47,396	45,910	-44,496	-43,149	-41,868	-40,649	-39,490	-38,390	-37,344	-36,352	-35,411	34,519	-33,674	-32,874
-729,999	-739,885	-749,371	-758,474	-767,209	-775,599	-783,630	-791,346	-663,347	-535,047	-541,861	-548,399	-554,671	-560,689
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1,838,126	1,829,726	1,821,654	1,813,898	1,806,445	1,799,283	1,792,400	1,785,786	1,539,962	1,294,386	1,288,513	1,282,867	1,277,440	1,272,222
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0	0	0	0	0	0	0	0	31,062	31,062	0	0	0	0
0	0	0	0	0	0	0	0	31,062	31,062	0	0	0	0
1,838,126	1,829,726	1,821,654	1,813,898	1,806,445	1,799,283	1,792,400	1,785,786	1,571,024	1,325,448	1,288,513	1,282,867	1,277,440	1,272,222
1,000,074	944,898	892,909	843,910	797,719	754,166	713,090	674,343	563,382	451,198	416,070	393,189	371,622	351,291
-8,429,467	-7,484,569	-6,591,660	-5,747,750	-4,950,031	-4,195,865	-3,482,775	-2,808,433	-2,245,051	-1,793,853	-1,377,783	-984,594	-612,972	-261,681
0.54	0.59	0.64	0.69	0.73	0.77	0.81	0.85	0.88	0.90	0.92	0.95	0.97	0.99

Union South
Discounted Cash Flow Analysis
Guelph Phase II Re Inforcement FBP
November 11, 2008

2035 Year 27	2036 Year 28	2037 Year 29	2038 Year 30	2039 Year 31	2040 Year 32	2041 Year 33	2042 Year 34	2043 Year 35	2044 Year 36	2045 Year 37	2046 Year 38	2047 Year 39	2048 Year 40
2,719,134	2,719,134	2,719,134	2,719,134	2,719,134	2,719,134	2,719,134	2,719,134	2,719,134	2,719,134	2,719,134	2,719,134	2,719,134	2,719,134
710,583	-710,583	-710,583	-710,583	-710,583	710,583	-710,583	710,583	-710,583	-710,583	710,583	710,583	-710,583	-710,583
-142,766	-142,766	-142,766	-142,766	-142,766	-142,766	-142,766	-142,766	142,766	-142,766	-142,766	-142,766	-142,766	-142,766
32,118	-31,403	30,728	30,092	-29,493	28,928	-28,398	-27,901	27,435	26,998	-26,591	26,211	-25,858	-25,531
-566,461	-571,096	577,310	-582,405	587,292	-591,980	-596,476	-600,788	-604,923	-608,889	-612,692	-616,339	-619,836	-623,189
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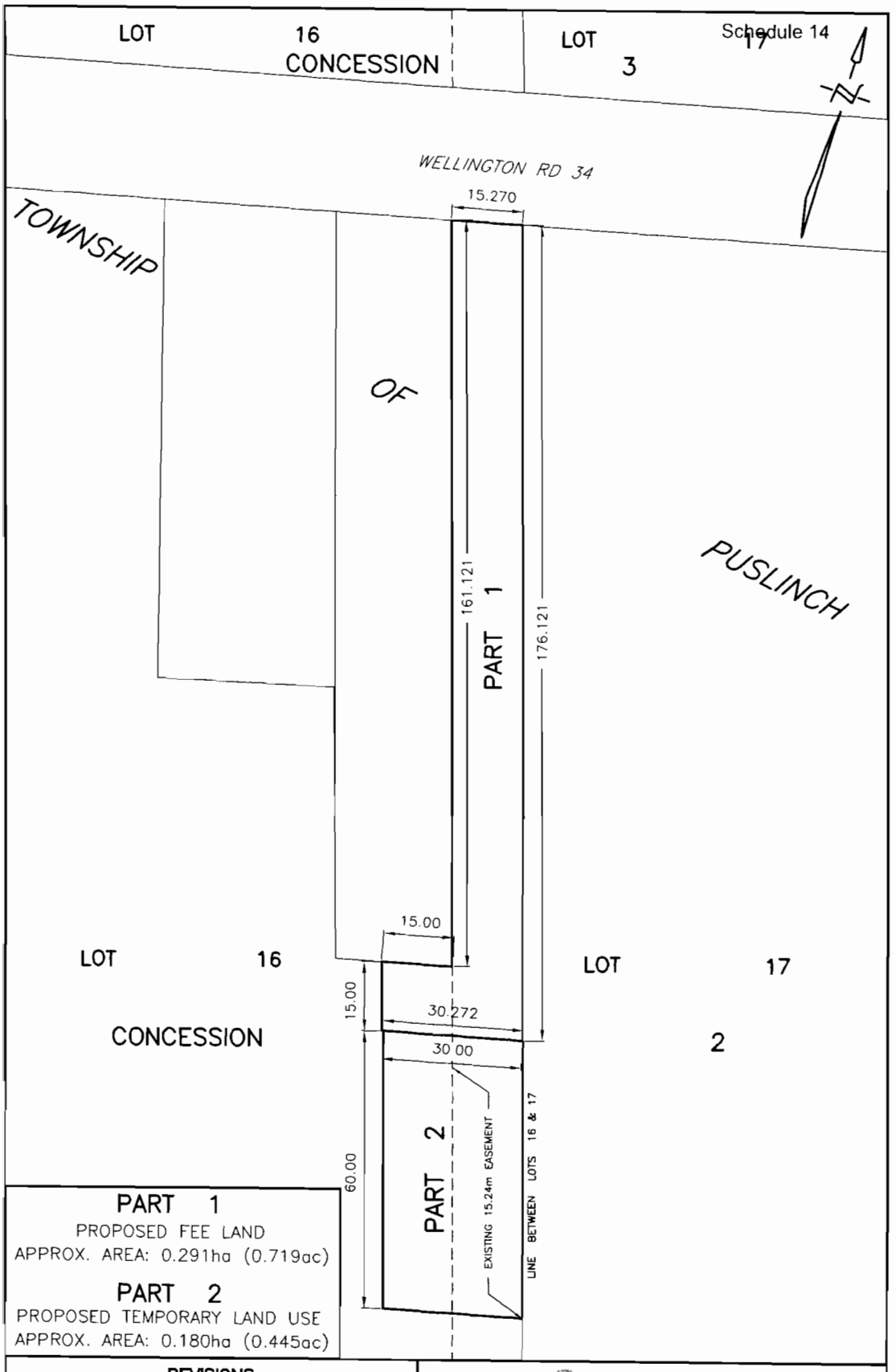
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,267,206	1,282,384	1,257,747	1,253,288	1,249,000	1,244,877	1,240,911	1,237,096	1,233,427	1,229,897	1,226,502	1,223,234	1,220,090	1,217,065
332,118	314,036	296,977	280,881	265,691	251,352	237,814	225,031	212,959	201,555	190,781	180,600	170,979	161,885
70,437	384,473	681,450	962,331	1,228,021	1,479,373	1,717,188	1,942,219	2,155,178	2,356,732	2,547,513	2,728,113	2,899,091	3,060,976
1.00	1.02	1.04	1.05	1.07	1.08	1.09	1.11	1.12	1.13	1.14	1.15	1.16	1.17



PART 1
PROPOSED FEE LAND
APPROX. AREA: 0.291ha (0.719ac)

PART 2
PROPOSED TEMPORARY LAND USE
APPROX. AREA: 0.180ha (0.445ac)

REVISIONS

NO.	DATE	BY	APP'D	REMARKS

union gas
A Spectra Energy Company

PART OF NORTH HALF LOT 16, CONCESSION 2
TOWNSHIP OF PUSLINCH
COUNTY OF WELLINGTON

DRAWN BY G.T. HANUSZAK	DATE 2008/10/24	SCALE 1=1000	PLOT SPEC. 1:1
CHECKED BY	DATE	AC/DRAW CODE	
APPROVED BY	DATE	JOB NO	
SIZE L / DRAWER N/A	SHEET 1 of 1	DRAWING NO.	

Name of Project: Guelph Reinforcement 2009 Phase II
File: General

TEMPORARY LAND USE AGREEMENT

In consideration of a payment of [redacted] the undersigned, Owner, of part of Lots 15, Concession 2, in the Township of Puslinch, in the County of Wellington; under PIN71208-0123(LT), hereby grant to **Union Gas Limited** (the "Company"), its servants, agents, employees, contractors and sub-contractors and those engaged in its and their business, the right on foot and/or with vehicles, supplies, machinery and equipment at any time and from time to time during the term of this Agreement to enter upon, use and occupy a parcel of land (the "said lands") more particularly described on the **Sketch** attached hereto and forming part of this Agreement, the said lands being immediately adjacent to and abutting the lands (the "said road allowance") for any purpose incidental to, or that the Company may require in conjunction with, the construction by or on behalf of the Company of a proposed NPS 12" diameter gas transmission pipeline, and appurtenances on the said lands including, without limiting the generality of the foregoing, the right to make temporary openings in any fence along or across the said lands and to remove any other object therein or thereon interfering with the free and full enjoyment of the right hereby granted and further including the right of surveying and placing, storing, levelling and removing earth, dirt, fill stone, debris of all kinds, pipe, supplies, equipment, vehicles and machinery and of movement of vehicles, machinery and equipment of all kinds. This Agreement is granted upon the following understandings:

(a) The rights hereby granted terminate on the 31st day of November 2009.

The actual use of the land shall be from the beginning of construction until December 31st of the year following construction.

(b) The Company shall make to the person entitled thereto due compensation for any damages resulting from the exercise of the right hereby granted and if the compensation is not agreed upon it shall be determined in the manner prescribed by section 100 of The Ontario Energy Board Act, R.S.O. 1998 S. O. 1998, c.15 Schedule B, as amended or any Act passed in amendment thereof or substitution there for;

(c) As soon as reasonably possible after the construction of the aforesaid pipe line, the Company at its own expense will level the said lands, remove all debris there from and in all respects, restore the said lands to their former state so far as is reasonably possible, save and except for items in respect of which compensation is due under paragraph (b) and the Company will also restore any gates and fences interfered with around the said lands as closely as reasonably possible to the condition in which they existed immediately prior to such interference by the Company.

(d) It is further agreed that the Company shall assume all liability and obligations for any and all loss, damage or injury, (including death) to persons or property that would not have happened but for this indenture or anything done or maintained by the Company hereunder or intended so to be and the Company shall at all times indemnify and save harmless the Owner from and against all such loss, damage or injury and all actions, suits, proceedings, costs, charges, damages, expenses, claims or demands arising there from or connected therewith provided that the Company shall not be liable under the Paragraph to the extent to which such loss, damage or injury is caused or contributed to by the gross negligence or willful misconduct of the Owner.

The Company and the Owner agree to perform the covenants on its part herein contained.

DATED this 23rd day of October, 2008.

UNION GAS LIMITED;per

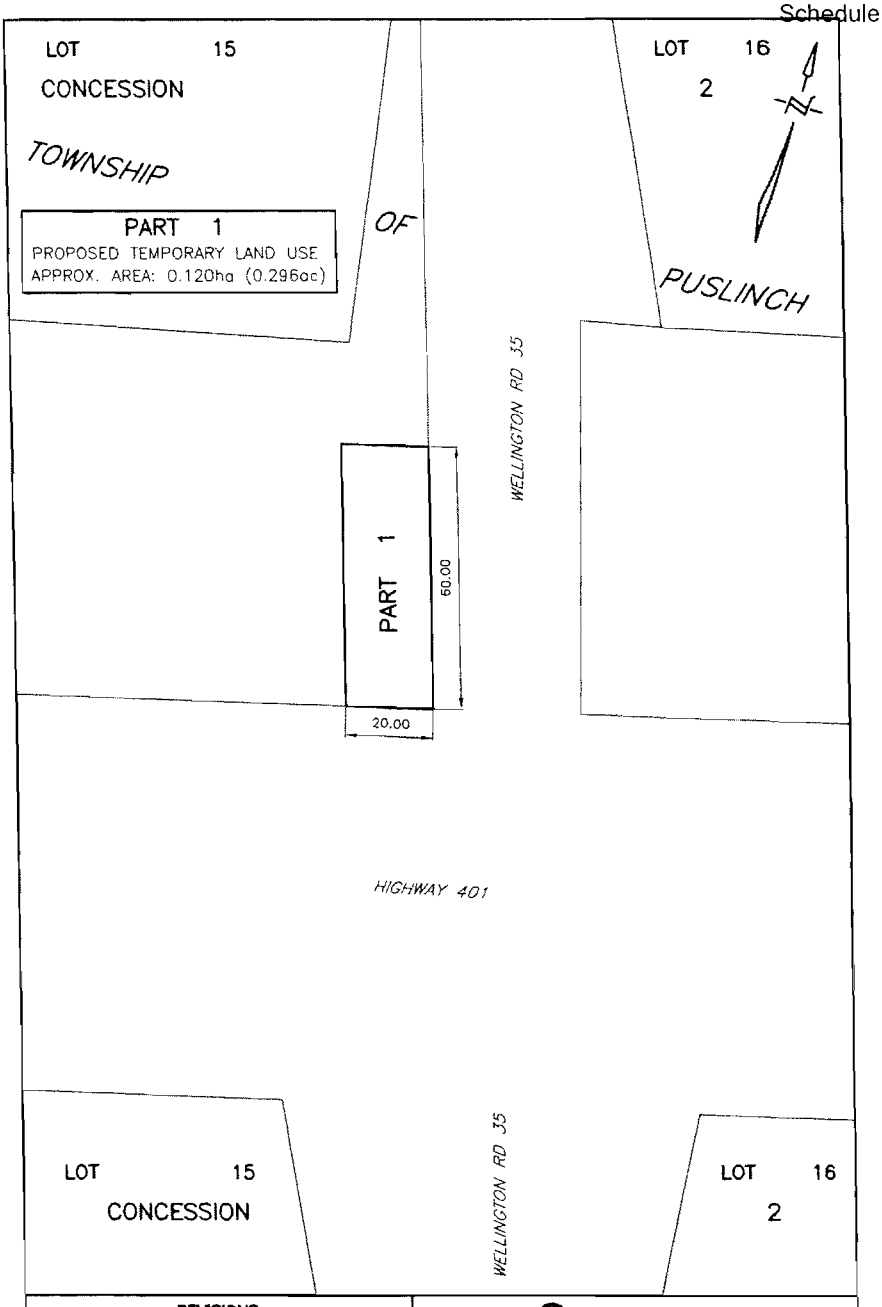
Melvyn R. Weishar, SR/WA
Senior Lands Agent
I have authority to bind the Corporation.

WITNESS:

981520 ONTARIO LIMITED;per

Ed Lorenowicz
Director
I have authority to bind the Corporation.

Paid [redacted] by cheque(s) #009993/009994, on October 23rd, 2008. Charged to 07-08-301-4900



REVISIONS				
NO	DATE	BY	APP'D	REMARKS

uniongas
A Spectra Energy Company

PART OF LOT 15, CONCESSION 2
TOWNSHIP OF PUSLINCH
COUNTY OF WELLINGTON

DRAWN BY	C.T. HANUSZAK	DATE 2008/10/24	SCALE 1 = 1000	PLOT SPEC 1:1
CHECKED BY		DATE	AC/DRAW CODE	
APPROVED BY		DATE	JOB NO	
SIZE L	DRAWER N/A	SHEET 1 of 1	DRAWING NO	

Schedule 16

ENVIRONMENTAL REPORT: UNION GAS LIMITED PIPELINE PROJECT – GUELPH REINFORCEMENT PHASE II

File No. 160960383

Prepared for:
Union Gas Limited
P.O. Box 2001
50 Keil Drive North
Chatham ON N7M 5M1

Prepared by:
Stantec Consulting Ltd.
361 Southgate Drive
Guelph, ON N1G 3M5

September 2008

Executive Summary

In response to the growing demand for natural gas, Union Gas Limited ("Union Gas") is proposing to install a natural gas pipeline in order to expand their existing Guelph Line natural gas pipeline system.

The proposed project involves the construction of a 12-inch (323.9-millimeter) diameter steel natural gas pipeline. The pipeline would commence at either the intersection of Concession 1 and County Road 35 or at an existing Union Gas station site located in Lot 16, Concession 1, Township of Puslinch and terminate at either the location where Union Gas's pipeline crosses County Road 34 or at the existing Union Gas station located on Forestell Road, approximately 400 m east of Downey Road. The pipeline would be approximately 4.6 to 7.4 km in length.

Union Gas retained Stantec Consulting Ltd. ("Stantec") to prepare an Environmental Report ("ER") for construction and operation of the proposed pipeline to meet the intent of the Ontario Energy Board's ("OEB") *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, Fifth Edition* (2003) *("*OEB *Environmental Guidelines* (2003)*")*. The ER accompanies Union Gas's application to the OEB for Leave to Construct the proposed pipeline.

The ER describes the process used to identify and evaluate route alternatives for the proposed pipeline, in order to select a Preferred Route. The ER also considers the environmental and socio-economic setting, and the potential environmental and socio-economic effects associated with the proposed pipeline. Based on these potential impacts, mitigation and protective measures are recommended to minimize these effects.

In preparing the ER, input was received from interested parties and stakeholders through a public consultation program, including local, provincial, and federal government agencies, First Nations, and residents within, or close to the Study Area. This information provided important data concerning local environmental and socio-economic features. Stantec has considered this information during route selection to address the potential environmental and socio-economic effects of the proposed pipeline and recommend appropriate mitigation and protective measures.

A Study Area was established based on a review of the area and preliminary assessment of routing opportunities and constraints between the Project endpoints. The principal objective in defining the Preferred Route was to select an acceptable route in consideration of environmental, socio-economic, technical, and economic factors.

The Preferred and Alternative Routes for the proposed pipeline were identified and analyzed by Stantec and Union Gas using published information, field reconnaissance, aerial photo interpretation, and information provided by agencies, First Nations, landowners, and members of the general public, through direct contact with Stantec or at the Public Information Session.

Stantec identified a Preferred Route and after review, Union gas has accepted this route alignment. The Preferred Route travels north within the road allowance of Wellington Road 35 and will terminate at either County Road 34 where an existing Union Gas pipeline intersects the road, or at the existing Union Gas Station located on Forestell Road, approximately 400 metres east of Downey Road.

Physical, biophysical, and socio-economic features were identified along the Preferred Route for the proposed pipeline. A detailed review of the potential effects of the Project on these features is provided in the ER. An analysis of the cumulative effects relating to construction and operation of the proposed pipeline along the Preferred Route are also summarized within the report.

In the opinion of Stantec, the recommended program of mitigation, monitoring, and contingency measures addresses the concerns raised to date during the public consultation program. It also addresses any effects, including potential cumulative effects, identified during the detailed technical review of the Preferred Route. With the implementation of all of the above-noted measures during the construction and operation phases of the Project, Stantec is of the opinion that no significant adverse environmental or socio-economic effects will occur.

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1.0 Introduction

1.1 DESCRIPTION AND PURPOSE OF THE PROPOSED PROJECT

In response to the growing demand for natural gas, Union Gas Limited ("Union Gas") is proposing to install a natural gas pipeline in order to expand their existing Guelph Line natural gas pipeline system.

The proposed project involves the construction of a 12-inch (323.9-millimeter) diameter steel natural gas pipeline. The pipeline would commence at either the intersection of Concession 1 and County Road 35 or at an existing Union Gas station site located in Lot 16, Concession 1, Township of Puslinch and terminate at either the location where Union Gas's pipeline crosses County Road 34 or at the existing Union Gas station located on Forestell Road, approximately 400 m east of Downey Road. Depending on the route selected and the tie-in points, the pipeline would be approximately 4.6 to 7.4 km in length. **Appendix A, Figure A-1** shows the location of the Study Area and the Alternative Routes.

Stantec Consulting Ltd. ("Stantec") was retained by Union Gas to complete an Environmental Report ("ER") study for the proposed Project. The ER was completed in accordance with the Ontario Energy Board's ("OEB") *Environmental Guidelines for Location, Construction, and Operation of Hydrocarbon Pipelines, Fifth Edition* (2003) ("OEB *Environmental Guidelines* (2003)").

1.2 PURPOSE AND ORGANIZATION OF THE REPORT

Companies planning to construct and operate natural gas pipelines in Ontario must consider the OEB *Environmental Guidelines* (2003). When seeking Leave to Construct approval, pipeline companies may apply to the OEB under appropriate sections of the *Ontario Energy Board Act, 1998*. Leave to Construct applications to the OEB must include information that allows the OEB to make an informed decision, including:

- Engineering design and construction plans for the proposed pipeline;
- An ER including a route evaluation study and mitigation plans in support of the Application; and,
- Easement acquisition and landowner and tenant relations' considerations.

In order to fulfill these criteria, the information presented in this ER has relied on technically sound and consistently applied procedures that are replicable and transparent. This report provides documentation of the ER activities undertaken for construction of the proposed pipeline; it is organized into eleven sections:

- Section 1 provides a description of the proposed facilities, the approval process, and the role of the ER study;
- Section 2 details the study process for the ER;
- Section 3 provides a summary of the inventory of existing environmental (physical, agricultural, and biophysical) and socio-economic conditions within the Study Area. Detailed background information pertaining to the Study Area is provided in **Appendix C2**;
- Section 4 describes the public consultation program for the ER;
- Section 5 describes the proposed pipeline route evaluation methodology;
- Section 6 describes existing environmental (physical, and biophysical) and socio-economic conditions along the Preferred Route; identifies potential impacts of construction and operation of the proposed pipeline; and recommends mitigation and protective measures;
- Section 7 describes the potential impacts associated with hydrostatic testing, and recommends mitigation and protective measures;
- Section 8 provides an analysis of potential cumulative effects associated with the proposed Project;
- Section 9 describes monitoring and contingency plans to address potential impacts of the proposed Project; and,
- Section 10 provides a summary and conclusions.

The ER also includes a list of references (**Section 11**) and appendices for supporting documentation. Environmental and socio-economic features figures and photomosaics are compiled in the appendices.

1.3 OBJECTIVES OF THE ER

The primary objective of this ER is to ensure environmental and socio-economic protection during construction and operation of the proposed project, and at the same time meet the intent of the OEB *Environmental Guidelines* (2003). To meet these objectives, the ER study:

- Identifies existing environmental and socio-economic features that could be affected by the Project;
- Identifies an environmentally and socio-economically acceptable Preferred Route for the proposed pipeline; and,

- Identifies stakeholder interests (including regulatory and landowner issues) and appropriate mitigation and protective measures to ensure concerns raised by interested parties are addressed.

In addition, this ER study considered relevant provincial and federal guidelines and regulations. The documents reviewed included:

- The Technical Standards and Safety Authority (TSSA) mandate derived from the Technical Standards and Safety Act (2000), specifically *Oil and Gas Pipeline Systems* Ontario Regulation 210/01 and the TSSA *Guidelines for Development in the Vicinity of Oil and Gas Pipeline Facilities* (1998) and *Guidelines for Locating New Oil and Gas Pipeline Facilities* (1998);

- The Ontario Ministry of Municipal Affairs and Housing ("MMAH") Provincial Policy Statement which includes interests in wetlands, mineral aggregate resources, and protection of agricultural lands;

- The Department of Fisheries and Oceans ("DFO") interests in fisheries (*i.e.*, no net loss policy, potential for Harmful Alteration, Disruption or Destruction of aquatic habitat; Government of Canada, 1995);

- The Ministry of the Environment's technical mandate derived from the Environmental Protection Act (1990b), and the Ontario Water Resources Act (1990c);

- The Government of Canada's Species at Risk Act (2002);

- The Species at Risk in Ontario List regulation (O.Reg. 230/08); and,

- The Grand River Conservation Authority's ("GRCA") jurisdiction under the Conservation Authority Act ("CAA") pertaining to Regulation 97/04 – Development Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (Generic Regulation).

The OEB *Environmental Guidelines* (2003) define the major steps in selecting a Preferred Route for a proposed pipeline. Based on these requirements, this report has been prepared to:

- Define a Study Area and compile an inventory of physical, agricultural, biophysical, and socio-economic features and conditions within this area;

- Identify and evaluate potential pipeline route alternatives in light of their individual and comparative environmental impacts;

- Identify an environmentally acceptable route that minimizes environmental and socio-economic impacts and meets Union Gas's operating system requirements;

- Complete a detailed review of environmental and socio-economic features along the proposed route and assess the potential effects of the pipeline on these features;
- Define mitigation and protective measures that may be utilized to minimize any potential environmental and socio-economic impacts of pipeline construction;
- Develop a consultation program to contact, record, and reflect the concerns and comments of area residents, landowners, federal and provincial ministries and agencies, municipalities, First Nations, and conservation authorities having jurisdiction within the Study Area and along the proposed route; and,
- Identify an environmental protection plan that includes monitoring, contingency plans, an inspection program, and commitments to additional work.

A key feature of this study has been early and frequent contact with landowners, the public, agencies, and First Nations, and continuous invitations to each of these parties to be involved through all stages of the process, including:

- Notice of study commencement and Study Area definition;
- Invitation to attend a Public Information Session to discuss the accuracy of environmental and socio-economic mapping and the ER study process, and to present the alternative routes and Preliminary Preferred Route;
- Specific input through discussions with affected residents concerning mitigation and protective needs along the Preferred Route; and,
- Telephone discussions with landowners and representatives from various environmental regulatory agencies.

Throughout the Project, contacts were made via letters, email and phone calls. A history of contacts with agencies, First Nations, landowners and the public is assembled in **Appendices B1, B2, B3** and **B4**.

1.4 APPROVAL PROCESS AND REGULATORY REQUIREMENTS

In order to obtain approval to construct a pipeline, proponents must submit an application to the OEB that establishes that the Project is in the public interest. As a regulatory body, the OEB must be assured that project sponsors meet all standards and regulations relating to both the protection of the environment and public health and safety.

This ER is consistent with the OEB *Environmental Guidelines* (2003), which must be considered when applicants, such as Union Gas, seek approval from the OEB. The OEB *Environmental Guidelines* (2003) provide direction as to the content of the ER with respect to project description, route selection process, environmental and socio-economic descriptions, environmental impact assessment, and mitigation. Other requirements of the OEB

Environmental Guidelines (2003) include compliance and effects monitoring programs, specific mitigation and contingency plans for implementation during construction, and public participation throughout the planning process.

Once completed, the ER is circulated or made available to the Ontario Pipeline Coordinating Committee ("OPCC"), other federal and municipal government agencies, interest groups, First Nations, landowners, and other interested parties for their review and comment prior to a hearing before the OEB.

The OPCC is an inter-ministerial committee that includes the following provincial government ministries with potential interest in the construction and/or operation of hydrocarbon transmission facilities:

- Ministry of Agriculture, Food, and Rural Affairs;
- Ontario Energy Board;
- Technical Standards and Safety Authority;
- Ministry of Transportation;
- Ministry of Municipal Affairs and Housing;
- Ministry of Environment;
- Ministry of Culture;
- Ministry of Natural Resources; and
- Ontario Realty Corporation.

The chairperson of the OPCC co-ordinates the review of the ER and ensures OPCC concerns are provided to the applicants. The report is only approved by the OPCC if it meets the concerns of each committee Ministry. If there are outstanding issues, the OPCC attempts to resolve these issues prior to the OEB hearing. The OPCC's position does not preclude any intervenor, including OEB staff, from raising environmental concerns at a hearing. The OEB will take the OPCC and all intervenor recommendations into account; however, the OEB always has the final decision.

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2.0 ER Study Process

This ER study was initiated and prepared in 2008 by a multidisciplinary team of environmental planners and scientists. Union Gas provided additional environmental support and engineering expertise throughout the study as required.

As described, the study has been completed with consideration to the requirements of the OEB *Environmental Guidelines* (2003). The various steps outlined in the process have been divided into three phases, as presented in **Figure 2-1**.

2.1 PHASE I – INVENTORY AND MAPPING OF ENVIRONMENTAL FEATURES

The study commenced with delineation of the Study Area for the Project and notification to relevant federal, provincial, and municipal agencies as well as First Nations and public interest groups. Environmental features and conditions in the Study Area were mapped and characterized based on published and unpublished literature, and maps. All geographically based environmental features and conditions were incorporated onto a series of digital base maps. Discussions with relevant agencies, as well as information collected from relevant sources, provided information essential to compilation of the environmental inventory. This phase also included the identification of feasible route alternatives. These Alternative Routes were identified and evaluated based on the criteria outlined in **Section 5.1**.

2.2 PHASE II – PIPELINE ROUTE SELECTION PROCESS

Phase II involved the evaluation of the alternative routes, identification of a Preliminary Preferred Route, and public consultation regarding the Preliminary Preferred Route. The alternative routes were assessed through an evaluation of the environmental and socio-economic features that may be affected by pipeline construction and operation. The identification of the Preliminary Preferred Route was carried out following discussions with agencies, and Union Gas, a review of the data collected in Phase I, field surveys of the Study Area, and consideration of significant environmental and socio-economic features identified in the Study Area. Comments received at the Public Information Session aided in the selection of the Preferred Route. The route identification objectives are described in **Section 5.1**.

2.3 PHASE III – RECOMMENDED MITIGATION MEASURES

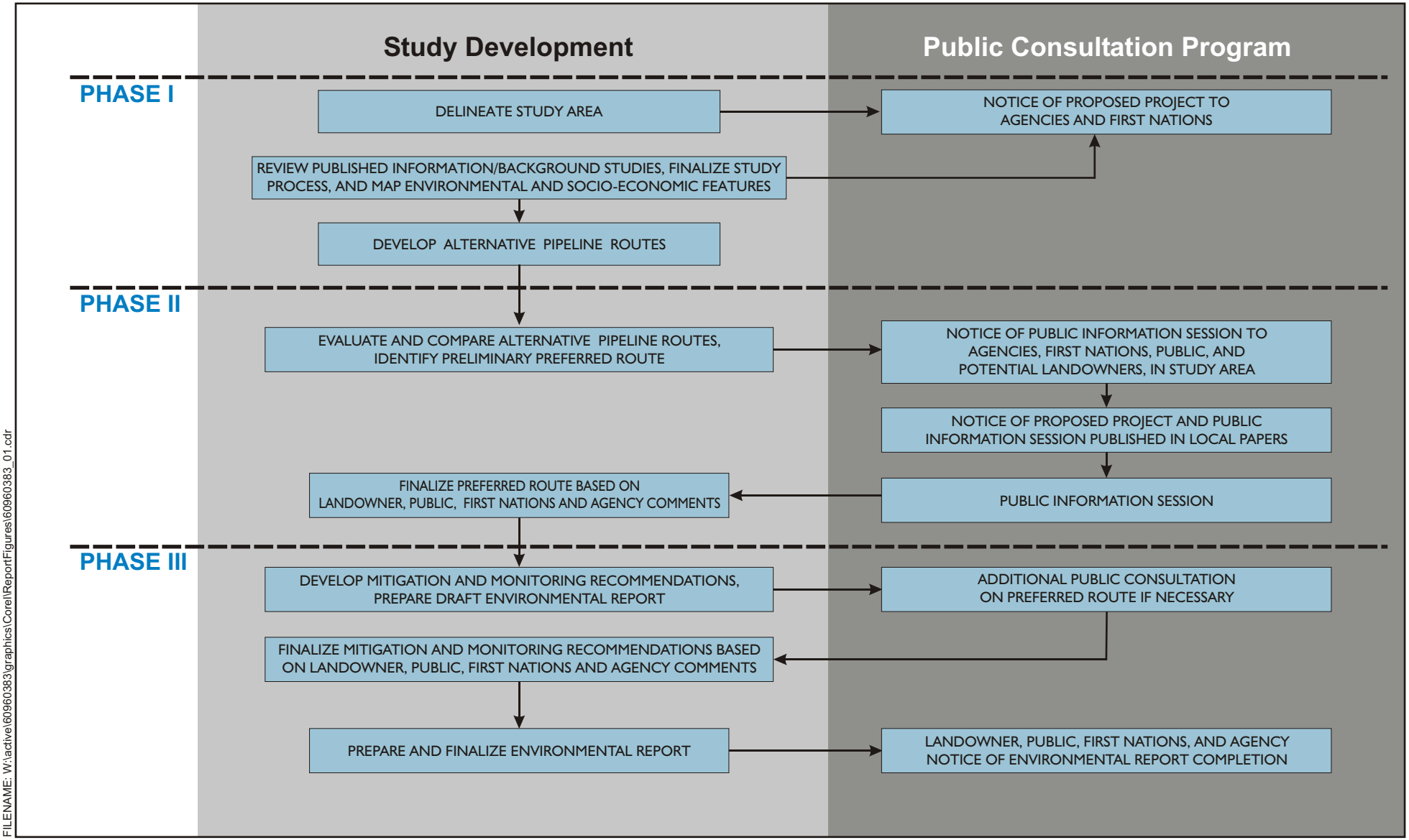
Phase III included a survey along the Preferred Route, refining the Preferred Route alignment, identification of mitigation and protective measures, and a description of the net environmental effects of the Project. Net environmental effects are considered to be the state of environmental features following construction of the Project and implementation of the recommended mitigation and protective measures. The proposed mitigation measures are based on Stantec's

previous experience in assessing the development of natural gas pipelines and understanding of Union Gas's Construction Specifications.

Refining the Preferred Route involved a detailed review of the alignment of the pipeline along the Preferred Route corridor in order to avoid and/or minimize potential effects through the consideration of minor route deviations. Additional mitigation and protective measures, such as watercourse crossing techniques, were identified to address specific concerns along the Preferred Route. Photomosaics were prepared showing the alignment of the Preferred Route, the environmental features along the route, locations where relevant construction specifications apply, and locations where additional site specific mitigation is required. Further analysis and refinement of the Preferred Route was conducted based on landowner and public input and agency comments. The location of the Preferred Route is illustrated in **Appendix A, Figure A-4**.

An important principle of planning is public participation. This study invited the participation of government agencies, First Nations, community interest groups, the public, and potentially affected landowners through letters and notices in local newspapers. A Public Information Session was held on June 26, 2008. Representatives from Stantec and Union Gas were available to answer questions. Additional communications about the Project were conveyed through direct agency contacts as well as telephone, email, and written correspondence. A summary and copies of the correspondence is provided in **Appendix B1** and **Appendix B3** respectively.

As part of the ER, a cumulative effects analysis was carried out for the Project. The ER will be distributed to relevant agencies, and to all others who request a copy.



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PREPARED FOR:
UNION GAS LTD.
GUELPH REINFORCEMENT PHASE II

FIGURE NO.
2.1

TITLE
ONTARIO ENERGY BOARD ENVIRONMENTAL REPORT STUDY PROCESS

Initiated: July, 2008
Revised:

Stantec

Back of Figure 2-1

3.0 Environmental Features in the Study Area

3.1 DATA SOURCES AND MAPPING

Selection of a Preferred Route, and the determination of mitigation and protective measures is a reflection of concerns expressed by government agencies and First Nations in correspondence and personal discussions, published and unpublished information available from various agencies, groups, and associations, field assessments, public consultation, and previous facilities development experience of Stantec and Union Gas.

By necessity, the analysis, integration, and synthesis of the data is an iterative process since information becomes available at various stages of the study and at different mapping scales. The level of detail of data and mapping increases as the study moves from analysis of the Study Area, to analysis of alternative routes, and finally, to a site specific survey of features along the Preferred Route.

The environmental and socio-economic information presented in this ER is based on data provided by individuals and agencies during the public consultation program, documented in published reports cited throughout the ER, and collected through ground surveys conducted by Stantec. Where agencies requested that information be kept confidential, such as the precise location of rare, threatened, vulnerable or endangered species and archaeological sites, such information has been withheld from the report or mapped in such a way that specific site locations are not identified.

The environmental features maps (**Appendix C1, Figure C1-1** to **Figure C1-4**), have been generated from mapping provided by Union Gas (2008). Scales have been adjusted from the original to better represent the features mapped. Further mapping sources are identified on the respective map, and in the Bibliography. Stantec has digitally reproduced features added to the base map.

A field survey of specific locations within the Study Area was completed during preparation of the ER. This information was used to confirm that the background information was sufficient to select a route, and develop the mitigation and protective measures presented in the report.

3.2 STUDY AREA

The Study Area for the proposed Project is shown in **Appendix A, Figure A-1**. The Study Area was delineated based on several criteria including:

- The terminal points as specified by Union Gas;
- An area of sufficient size such that a range of alternative routes linking the terminal points could be considered without unduly lengthening routes (aside from construction

costs, longer routes tend to encounter, and therefore affect, more environmental and socio-economic features in general);

- Incorporation of existing disturbed corridors or road allowance where feasible and appropriate; and,
- Paralleling roads, and linear features, to facilitate delineation of the Study Area where appropriate.

The Study Area is located in the County of Wellington, Ontario. The Study Area extends approximately 300 m north of Forestell Road in the north, the division of Township of Puslinch Lots 18 and 19 in the east, the middle of Concession 1 in the south, and the division between Township of Puslinch Lots 13 and 14 in the west (**Appendix A, Figure A-1**). The location of environmental and socio-economic features known to occur within the Study Area are illustrated on **Appendix C1, Figure C1-1**.

3.3 SUMMARY OF SIGNIFICANT ENVIRONMENTAL FEATURES IN STUDY AREA

The environmental and socio-economic inventory of the Study Area is described in detail in **Appendix C2**. The most significant features in the Study Area, including physical, agricultural, biophysical, and socio-economic features are summarized below.

3.3.1 Physical Features

The study area is located within the physiographic region known as the Horseshoe moraines. The majority of the Township of Puslinch is made up of rough moraines, gravel spillways and swamps associated with the Horseshoe moraine feature (Chapman and Putnam, 1984).

Based on Ministry of the Environment (“MOE”) water well records, the depth to bedrock within the Study Area varies from 5.5 m to 54.9 m (MOE, 2005).

In the Study Area, the main soil type is Dumfries, which comprises 60.9% of the soils within the Study Area. These soils have developed from stony soil material derived mainly from limestone. The material is calcareous and free carbonates can be found very close to the surface. Stones and boulders are numerous both on the surface and throughout the soil mass.

The climate of the Study Area is moderated by the proximity to Lake Huron to the west, and Lake Erie to the south. The mean annual temperature in the Guelph Arboretum, located just north of the Study Area is 6.5 degrees Celsius. Average temperatures above the freezing mark occur during the majority of the year (April through November). Precipitation, in the form of rain and snow, occurs throughout the year. Mean monthly rainfall varies between a high of 95.9 mm in April to a low of 17.6 mm in January. Approximately 160.8 cm of snow fall during the months of October to May. The elevation at the Guelph Arboretum weather station is 328 m above sea level (Environment Canada, 2002).

The Study Area is drained by three subwatersheds of the Grand River watershed. The main branch or tributaries of Irish Creek, Mill Creek and Fairchild Creek are located within the Study Area. Each of these watercourses is permanently flowing, and both Mill Creek and Fairchild Creek contain coldwater habitat (MNR, pers. comm., 2008). A number of tributaries associated with these watercourses are likely intermittent, conveying flows only during spring freshet and other times of the year when significant amounts of precipitation are received by the surrounding area.

3.3.2 Agricultural Features

Class 3 soils comprise approximately 60.9% of the soils within the Study Area. Soils in this class have moderately severe limitations that restrict the range of crops or require special conservation practices. Based on their subclass description, these soils have low fertility and moisture limitations (OMAFRA, 2006).

Approximately 1.6% of land in the Study Area have been improved with artificial drainage systems; approximately 1.3% are systematically drained, and an additional 0.3% are randomly drained (OMAFRA, 2006). **Appendix C1, Figure C1-3** illustrates the CLI categorization of lands and the location and type of artificially drained lands within the Study Area.

3.3.3 Biophysical Features

The Study Area is located within the Deciduous Forest Region, which includes the Carolinian Zone of Canada (MNR, 2002). Ontario's Deciduous Forest lies along the northern shores of lakes Erie and Ontario and the southeastern shore of Lake Huron. It is the northern extension of the large deciduous forest of the northeastern United States. Many of the trees found there are at the northern limit of their range.

The Deciduous Forest Region contains one percent of Ontario's forests. In this region, the forest life is the most diverse in Ontario. A number of nationally rare species of mammals, birds, plants and insects can be found there. Some examples are the sassafras and tulip tree and the southern flying squirrel (MNR, 2002).

There are three Provincially Significant Wetlands ("PSWs") in the Study Area. As determined by performing a search on the Ministry of Natural Resource's ("MNR") Natural Heritage Information Centre ("NHIC") website there is one Earth Science Site ("ESS") in the Study Area. As identified by the GRCA, there are two Life Science Areas of Natural and Scientific Interest ("Life Science ANSI") in the Study Area.

A review of the National Species at Risk (Environment Canada, 2006) and provincial Natural Heritage Information Centre databases (NHIC, 2005) identified 23 vulnerable or rare species whose habitat ranges overlap with the Study Area.

As noted in **Section 3.3.1**, two of the watercourses located within the Study Area possess coldwater thermal regimes; Mill Creek and Fairchild Creek. Natural Resources and Values

Information System ("NRVIS") mapping located on the GRCA website (www.grandiver.ca) indicates that reaches of both Irish Creek and Fairchild Creek within the study area are unclassified. Approximately 1km downstream of the study area, NRVIS data from the GRCA website shows Irish Creek as possessing a warmwater thermal regime. It is expected that due to their location within wetlands that the Irish Creek tributaries located within the study area may become intermittent during summer months. Approximately 4 to 6 km downstream of the Study Area, Fairchild Creek possesses both warmwater and coldwater thermal regimes at various locations.

Irish Creek converges with the Speed River immediately upstream of the eastern edge of Hespeler Road, in the City of Cambridge. Mill Creek converges with the Grand River in the City of Cambridge, approximately 10 km downstream and is known to support populations of brown and brook trout. Brown trout presence is most common downstream (south) of Highway 401 and brook trout presence is generally restricted to headwaters areas upstream of Highway 401. Fairchild Creek is generally a large subwatershed of the Grand River that converges with the river more than 20 km downstream, south of the City of Brantford.

3.3.4 Socio-Economic Features

The Study Area is located primarily in the Township of Puslinch. A very small portion of the Study area is within the City of Guelph, County of Wellington. In 2006, the population of The Township of Puslinch was 6,689, up 13.7% from 5,885 in 2001 (Statistics Canada, 2006). The Township of Puslinch represents approximately 0.06% of the population of Ontario.

Land use classifications in the Study Area include Primary and Secondary Agriculture, Greenlands and Core Greenlands, and Industrial (County of Wellington (2008), City of Guelph (2006)). According to these Official Plans the main land uses in the Study Area are Agriculture (Primary or Secondary). Land uses within the Study Area are illustrated in **Appendix C1, Figure C1-2**. Within the Study Area there is one active landfill which is identified in **Appendix C1, Figure C1-1**. The unemployment rate in the Township of Puslinch, at 4.6%, is lower than the average unemployment rate in Ontario (6.4%) (Statistics Canada, 2006).

The composition of economic sectors and industries in the Township of Puslinch is very similar to Ontario's. The majority of the labour force is employed in the service industry (tertiary), followed by the manufacturing industry (secondary), with the fewest people employed in resource extraction (primary) (Statistics Canada, 2006).

4.0 Public Consultation Program

Public consultation is a critically important component of an environmental assessment, and an essential requirement of the OEB *Environmental Guidelines* (2003). Public consultation is the process of identifying and informing landowners and the public about the Project, soliciting information about their values and the local environmental and socio-economic circumstances, and receiving advice about key project decisions before those decisions are finalized. This study included the meaningful participation of government agencies, First Nations, interest groups, the general public, and potentially affected landowners through various communication channels including a Public Information Session. Additional communication about the Project was undertaken through telephone, email, facsimile and written correspondence.

The public consultation program included the following objectives:

- Identify interested and potentially affected parties;
- Inform and educate the public about the nature of the Project, potential impacts and how to participate in the public consultation process;
- Provide a forum for the identification of issues;
- Identify how public input will be used in the planning stages of the Project; and,
- Summarize issues for resolution, and resolve as many issues as possible.

The public consultation process for the Project was divided into three phases. The main goal of the first phase was to identify and notify relevant agencies about the Project and to get their input early in the process. The focus of the second phase was to present the alternative routes and Preliminary Preferred Route to landowners and the public and to solicit their input. The third phase involved the compilation and incorporation of all of the information received in the first two phases into the ER, the selection of the Preferred Route, and the finalization of the mitigation and protective measures required for the construction of the proposed pipeline.

The main goal subsequent to the selection of the Preferred Route focuses on the review of the ER and ongoing availability of the study team for questions and concerns from agencies, First Nations and landowners.

4.1 IDENTIFYING, NOTIFYING, AND UPDATING THE PUBLIC

Newspaper ads and addressed mailings were used to invite residents potentially affected by the Project to become involved in the ER study. A Public Information Session was held during the study on June 26, 2008. Newspaper notices also helped identify other groups, persons, and associations that could be affected, either directly or indirectly, in a positive or negative manner, during the planning, construction, or operation stages of the Project.

Contact letters and project newsletters were developed to notify and introduce agencies, First Nations, landowners and the public to the Project and to identify how they could be included in the decision-making process.

The Study Area is located in the Township of Puslinch, and a very small portion within the City of Guelph, Ontario. The parties listed below were considered when identifying landowners and the relevant public:

- All residents potentially impacted by the Preliminary Preferred Route, which included those on Wellington Road 35, Forestell Road, and Wellington Road 34, and landowners with land on either side of the Cross Country Alternative Route (through direct mailings);
- The general public, and businesses in and around the Study Area (through newspaper advertisements and a Public Information Session);
- Agencies, First Nations, stakeholders and institutions *e.g.* GRCA, and MNR (through direct mailing, and newspaper advertisements);
- Interest groups in the Study Area (through newspaper advertisements, and a Public Information Session); and,
- Members of Municipal, Provincial, and Federal government (through direct mailings).

4.1.1 Project Newsletters

A newsletter was developed for distribution at the Public Information Session to inform landowners and the public of the study process and project developments. The newsletter identified key issues on which landowner, public, agency and First Nations advice was being sought, the schedule of the Project, and important contact information for members of the Project team.

The newsletter was provided to Public Information Session attendees on June 26, 2008. The newsletter introduced the Project, outlined a tentative project schedule, described the purpose of the Public Information Session, and presented the Preliminary Preferred and Alternative Routes. Through the newsletter, Stantec asked for input into selection of the Preferred Route and the study process. Issues discussed in the newsletter included how to get involved, route selection, and evaluation measures for the Preliminary Preferred and Alternative Routes.

A copy of the Project newsletters can be found in **Appendix B4**.

4.1.2 Mailouts

Addressed letters were mailed to agencies on March 18, 2008, to inform them of the commencement of the Project. A copy of this agency correspondence can be found in **Appendix B2**. Letters were mailed on June 2, 2008 to invite agencies and First Nations, to attend the Public Information Session. Letters were mailed on June 5, 2008 to invite potentially affected landowners to attend the Public Information Session. A copy of the agency, First Nations, and landowner correspondence can be found in **Appendix B4**.

4.1.3 Newspaper Ads

Notice of the Public Information Session for the Union Gas Limited Guelph Reinforcement Phase II Pipeline Project was published in two local newspapers; The Guelph Mercury and The Guelph Tribune on June 20, 2008. The advertisement identified the Project and the area being studied, and was intended to generate public interest in the proposed Project and the Public Information Session. The advertisement also indicated that a Preliminary Preferred Route had been chosen. Any interested parties were invited to comment on the Preliminary Preferred Route and construction procedures, and to suggest any areas where specific mitigation and protective measures might be necessary.

A copy of the newspaper notice is included in **Appendix B4**.

Once Union Gas has applied to the OEB for Leave to Construct the proposed pipeline, they will be directed by the OEB to publish a Notice of Application in local newspapers.

4.2 RECEIVING INPUT FROM THE PUBLIC

Landowners and the public provided invaluable input through two key mechanisms: the Public Information Session, and exit questionnaires. All comments and input received through the public consultation program were considered in the route selection and ER process.

4.2.1 Agency Contacts

An agency contact letter was sent to all interested agencies, including local municipal leaders, on March 18, 2008. Specific information was sought regarding policies, guidelines, and legislation that may affect routing, construction, or operation of the proposed natural gas pipeline. A copy of this letter and the contact list are provided in **Appendix B2**.

A copy of all correspondence between these parties is attached in **Appendix B3**. Recommendations and comments from corresponding agencies have been considered by Stantec and where practical, incorporated into the ER.

4.2.2 Public Information Session

The Public Information Session was held at the Valens Community Centre on June 26, 2008, from 6:30 p.m. to 9:00 p.m. The purpose of the Public Information Session was to provide landowners, agencies, First Nations and other stakeholders an opportunity to:

- View the environmental features mapping and background data collected to date;
- Ask questions and comment on the planning process followed; and
- Comment on the study methodology and the Alternative and Preliminary Preferred Routes.

Stantec and Union Gas representatives were present at the Public Information Session to provide information, answer questions, and receive comments. The sign-in book for the open house contained eight signatures. Each attendee was offered a newsletter and an exit questionnaire. The exit questionnaire was to be completed and returned to Stantec either that evening or through the mail using a postage paid envelope that was available at the Public Information Session.

Analysis of the open house registration book indicates that of the 8 addresses listed, 7 attendees were landowners within the Study Area. Only one of 7 attendees are landowners adjacent to the Preliminary Preferred Route. Questions and comments discussed with landowners and members of the public regarding the pipeline were mainly related to natural gas service, timing of constructing, side of the road preferred, general construction questions (access, maintaining one lane of traffic, pipe depth) and watercourse crossings (Mill Creek). Comments received at the Public Information Session indicated that the Preliminary Preferred Route was the most ideal route. One information session attendee preferred the Cross Country Alternative Route due to the potential disruption to wetlands adjacent to the Preliminary Preferred Route.

Exit questionnaires were developed to solicit input from attendees at the Public Information Session. The exit questionnaire sought input from information session attendees regarding the Preliminary Preferred Route, the route selection process, site-specific features, and any other comments or feedback. A total of two completed exit questionnaires were returned.

Exit questionnaires received from the Public Information Session indicated that attendees were primarily concerned with the impacts of construction on agricultural operations, wildlife, and wetlands. None of the exit questionnaires received indicated that there were environmental features in the Study Area which were incorrectly mapped, or omitted. Both of the exit questionnaires were from landowners within the Study Area. Both respondents indicated that the Preliminary Preferred Route was the optimal route.

A summary of the returned exit questionnaires from the Public Information Session is included in **Appendix B5**.

4.2.3 Stakeholder Consultation

During preparation of the ER, Stantec received various phone calls and written correspondence from interested parties including representatives of the County of Wellington, Ministry of Transportation ("MTO"), GRCA, Township of Puslinch, Ducks Unlimited Canada, MMAH and the City of Guelph.

In an email sent on April 2, 2008, the County of Wellington stated that sections of Wellington Road 35 between Wellington Road 34 and Concession 4 have several wet/swamp areas adjacent to the road. The County is concerned about the fragile base and further settlement or failure of the road which may result from pipeline construction activities. They would also be concerned with traffic control during construction adjacent to Wellington Road 35, as well as cleanup after construction. On June 24, 2008 the County of Wellington further emphasized their concern for the proper restoration of the easement and repair of any problems occurring a year or two after initial restoration.

The MTO stated in an email sent on April 2, 2008 that permits will be required when crossing Highway 401 or any land within MTO's Building & Land Use Permit control area. In a letter dated June 25, 2008 the MTO stated that they have no objections to the routing options outlined by Stantec. They also stated that the crossing of Highway 401 must be completed by jack and bore method, delivery and receiving pits must be located outside of the highway road allowance, and that an encroachment permit will be required for the crossing operation which will require plans and profiles to be submitted to the MTO. On September 10, 2008 Stantec contacted the MTO to determine if HDD would be an acceptable technique for crossing Highway 401, and the MTO agreed that it would be.

In a letter dated April 11, 2008, the GRCA identified several areas of concern within the Study Area and stated that they should be avoided to the extent possible. They also stated that large portions of the Study Area are regulated by the GRCA.

Gamsby and Mannerow Limited sent a letter dated April 16, 2008 on behalf of the Township of Puslinch. In this letter they stated that the Official Plan should be referenced for the location of woodlots, core green lands, and crossing of Mill Creek. They also stated that the Township of Puslinch may wish to have G.W.S. Ecological & Forestry Services Inc. comment on the environmentally senstitive natural features within the Study Area.

Ducks Unlimited Canada stated in a letter dated April 21, 2008, that there are three wetland conservation projects within the Study Area and that although these areas have experienced past man-made disturbances, they still provide important habitat areas for a variety of wetland species. They requested that ground work should have regard for the sustainability of the wetland and its surrounding upland habitat.

In a letter dated May 1, 2008 the MMAH provided information regarding, and the link to, the Provincial Policy Statement, the Growth Plan for the Greater Golden Horseshoe area, and the Greenbelt Plan for the Greater Golden Horseshoe area. They stated that the local Official Plan

policies regarding energy should be integrated into the ER process. Finally, they stated that the Study Area appears to be within the proximity of the Haldimand Tract and that the appropriate First Nations should be contacted.

A letter was received from the MNR dated June 2, 2008 that informed Stantec of three PSWs, Cranberry – Oil Well Bog, Mill Creek, and Fairchild Creek Headwaters, tributaries to two coldwater creeks, Mill Creek and Irish Creek, one Life Science ANSI, Oil Well Bog – Little Tract, and rare species that exist within the Study Area including: Blanding's Turtle, Milksnake, Eastern Ribbonsnake, Least Bitten, Wild Bean, Harbinger of Spring, Carey's Sedge, and Shrubby St. Johnswort. They stated that it may be necessary to complete site surveys prior to construction in order to determine/confirm the presence of rare species and/or their habitat.

The City of Guelph sent a fax on July 10, 2008 informing Stantec that they are in support of any enhancements to the natural gas delivery system in the City of Guelph. They provided information from the City of Guelph Official Plan relating to the land adjacent to Forestell Road.

A summary table displaying information, questions, and concerns received from stakeholders, as well as responses, is located in **Appendix B1**. Copies of correspondence with agencies are located in **Appendix B3**.

4.2.4 First Nations Consultation

To ensure that any adverse effects on existing or asserted Aboriginal treaty rights were identified during the course of the study, Stantec consulted with First Nations proximal to the Study Area, as well as various departments within INAC. The consultation approach adopted by Stantec is consistent with the OEB's proposed Aboriginal Consultation Policy (EB-2007-0617).

Indian and Northern Affairs Canada's (INAC), Ontario Research Team, Litigation and Management and Resolution Branch, Specific Claims Branch, and Comprehensive Claims Branch, the Ontario Secretariat for Aboriginal Affairs, the Ministry of the Attorney General, and the following First Nations: Mississaugas of the New Credit; Six Nations of the Grand River Territory; Mississaugas of Scugog Island First Nation; Hiawartha First Nation; Curve Lake First Nation; and, Alderville First Nation, were contacted on March 18, 2008 to seek information regarding the status of lands within the Study Area. These stakeholders were also sent letters on June 2, 2008 to notify them of the Public Information Session scheduled for June 26, 2008.

In a letter dated April 8, 2008, INAC's Specific Claims Branch confirmed that there are no specific claims in the Study Area.

The Six Nations Council sent a letter dated April 10, 2008 informing Stantec that the Study Area is within the 1701 Treaty Territory (within six miles on either side of the main channel of the Grand River). They stated that they have no comments at this time but would like to be kept up to date on the archaeological work that will be conducted within the Study Area.

INAC's Litigation and Resolution Management Branch advised in a letter dated June 16, 2008 that their inventory includes active litigation in the vicinity of the Study Area. The litigation is entitled: *Six Nations of the Grand River Band of Indians v. Attorney General for Canada and Her Majesty the Queen in Right of Ontario*. They were unable to comment with respect to possible effects of this claim since the case had not been adjudicated at the time this letter was written.

Summaries of correspondence with First Nations are located in **Appendix B1**. Copies of correspondence related to First Nations are located in **Appendix B3.**

4.3 COMPILATION AND INCORPORATION OF INPUT

At each stage of the public consultation process, input received from landowners, the public, agencies, and First Nations was compiled, reviewed, and incorporated into project mapping and ER decision-making. Responses were provided to relevant agency and First Nations comments and all questions and concerns received from landowners and the public, either by letter, email, or telephone. Information and input provided by landowners, the public and agencies were considered throughout the process in identifying and describing environmental features within the Study Area, evaluating the route alternatives, selecting and refining the Preferred Route, and developing appropriate mitigation measures. Incorporation of landowner and public input assisted in decision making throughout alternative route generation, Preferred Route selection and fine-tuning, and development of mitigation and protective measures.

4.3.1 Follow-up

All issues identified during the public consultation program have been addressed through clarification by project team members, selection of the Preferred Route, and development of mitigation and protective measures that minimized potential impacts upon environmental or socio-economic features. Ongoing meetings with directly affected landowners are expected to resolve any outstanding issues.

Following completion, the ER will be circulated to relevant agencies, First Nations, and members of the public who have requested a copy for review. Union Gas will continue to work to resolve issues of interest and concern to landowners and other stakeholders, through a combination of individual meetings with landowners and interested parties, and through other project initiatives. Communication channels will remain open throughout the regulatory, construction, and operational phases of the Project.

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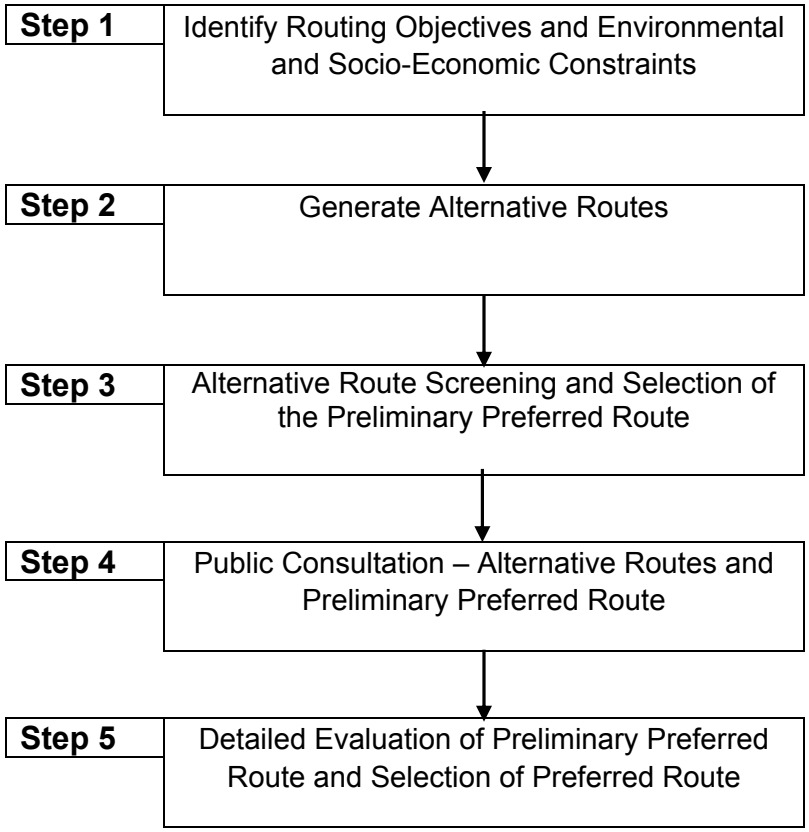
5.0 Proposed Pipeline Route Evaluation Methodology

The Preferred Route for the proposed pipeline was selected through a five-step process, illustrated in **Figure 5-1**. The five-step process confirmed many findings and assumptions made by the study team through the implementation of a public consultation program.

Figure 5.1 Route Evaluation Methodology



5.1 STEP 1: ROUTING OBJECTIVES AND ENVIRONMENTAL AND SOCIO-ECONOMIC CONSTRAINTS

5.1.1 Routing Objectives

The process of developing alternative routes commenced with the identification of routing objectives. Routing objectives are the general principles used to create reasonable and/or feasible alternative routes. The following objectives were used to assist in the generation of alternative routes within the Study Area:

1. Routes should follow a reasonably direct path between end-points, minimizing length as well as potential for environmental and socio-economic impacts;

2. Routes should avoid sensitive environmental and socio-economic features to the extent possible, where sensitive features cannot be avoided, alternative routes should be located to minimize impacts;

3. Existing linear features should be utilized or paralleled to the greatest extent possible in order to minimize impacts to previously undisturbed land.

Consideration was also given to provincial planning policies, guidelines, and regulations as described in **Sections 1.3** and **1.4** of this report.

5.1.2 Environmental and Socio-Economic Constraints and Opportunities

Environmental constraints are features that would be adversely affected by pipeline construction or operation, or features that possess unique attributes. Opportunities are existing features, such as a linear corridor or physical boundary, which provide a suitable location for the alignment of a pipeline. The environmental inventory, undertaken in Phase I of the study process, identified many of the features considered either as pipeline routing constraints or opportunities.

The identification of sensitive environmental and socio-economic features (*i.e.* constraints) was based on the following criteria:

- Site-specific mitigation measures would be required to minimize potential impacts;

- The feature has been selected or designated for protection; or,

- The feature has been recognized through local, regional, provincial, or federal policy, plan, or statute, or is otherwise valued as a social or economic resource.

Considering the criteria listed above, examples of significant environmental and socio-economic features in the Study Area include:

- Natural areas such as PSWs, ESSs, and Life Science ANSIs;
- Residential homes;
- Mill Creek, Irish Creek, and Fairchild Creek;
- Contaminated lands, and waste disposal sites; and,
- Utilities within road allowance.

Sensitive environmental and socio-economic features were avoided to the extent possible during the development of alternative routes. The large size of the Study Area resulted in the identification of several sensitive features and very few routing opportunities. The location and extent of some of these features precluded them from being avoided entirely in the generation of alternative routes. The locations of all environmental and socio-economic features are illustrated in **Appendix C1, Figure C1-1** to **Figure C1-4**.

Within the Study Area existing opportunities that were considered in the generation of alternative routes include road allowance, pipeline easements, and lot and property lines.

5.2 STEP 2: GENERATE ALTERNATIVE ROUTES

Generation of the alternative routes was based on the routing objectives and environmental and socio-economic constraints and opportunities identified in Step 1. Routes were generated in a manner that allowed a reasonably direct connection of the end points. Linear features within the Study Area that met the first routing objective, while avoiding and/or minimizing impacts to sensitive environmental and socio-economic features, were considered as alternative routes.

At the onset of the study, reasonable, or logical opportunities (i.e. road allowance, existing linear facilities) were considered in the generation of the alternative routes. The study team undertook a field survey to identify potential routing opportunities and constraints. The field survey, which was an important component of the preliminary route screening, included an assessment of the following opportunities in the Study Area:

- All north/south road allowances including Wellington Road 35
- All east/west road allowance including Forestell Road, Concession 4, Wellington Road 34, Highway 401, and Concession 2; and,
- All north/south oriented easements and right-of-ways.

At this stage potential alternative route segments that resulted in significant environmental impacts were eliminated from further consideration. During this step opportunities that did not

provide a reasonable or logical interconnection of the endpoints or resulted in unacceptable impacts were no longer considered as potential routes.

During this phase Stantec eliminated Concession 4, Highway 401 and Concession 2 from consideration due to the greater potential for disruption of environmental or socio-economic features along these road allowances as compared to Wellington Road 4 and Forestell Road. Concession 4 and Concession 2 both have wooded areas adjacent to the majority of the road allowance between Wellington Road 35 and the existing pipeline easement. Highway 401 is a major highway in Southern Ontario which experiences significant traffic volume. Construction adjacent to Highway 401 would result in significant potential effects which could be avoided by alternative route alignments.

This step resulted in the identification of two alternative routes in the Study Area which represented the most feasible alignments for connecting the end points.

- The Road Allowance Alternative Route travels north along Wellington Road 35, then east along Forestell Road until it terminates at the existing Union Gas station located on Forestell Road approximately 400 m east of Downey Road.

- The Cross Country Alternative Route travels north adjacent to an existing Union Gas pipeline easement and terminates at the existing Union Gas station located on Forestell Road approximately 400 m east of Downey Road.

There is potential that the natural gas requirements of the City of Guelph will require construction of approximately 4.6 km of pipeline to Wellington Road 34, where it will terminate approximately 400 m east of Wellington Road 35 (“mid-point”). Both of the alternative routes have been designed to accommodate this shorter route; the environmental and socio-economic analysis of each route will include the analysis of any necessary tie-in points.

The location of each Alternative Route is illustrated on **Appendix A, Figure A-2**.

5.3 STEP 3: ALTERNATIVE ROUTE ANALYSIS AND SELECTION OF THE PRELIMINARY PREFERRED ROUTE

5.3.1 Alternative Route Analysis

The Alternative Routes were subject to a comparative analysis with included both quantitative and qualitative analysis. **Table 5.1** shows the quantitative analysis of the Alternative Routes. The quantitative evaluation is a desktop exercise that involves measuring or counting the potential impacts of each route upon existing environmental and socio-economic features. The cells in the table that are not shaded identify which route has the least potential impact upon a particular feature. For example, the first row of the table identifies that when considering route length, the Cross Country Alternative Route is preferable to the Road Allowance Alternative Route since it is shorter.

Note that in this table the results for the Road Allowance Alternative Route are from adding the features on both sides of the road allowance and dividing by two to get the average, since at the time of report completion, it had not been determined which side of the road allowance the pipeline would be aligned in. Note that in this table the results for the Cross Country Road Allowance were determined by adding the features on both sides of the existing easement and dividing by two to get the average, then multiplying by 7.5 m since at the time of report completion, it had not been determined which side of the existing easement the pipeline would be aligned in. Although the proposed pipeline will require a 15 m easement, approximately 7.5 m is this easement can overlap the existing pipeline easement, therefore only 7.5 m will be on previously undisturbed land and considered in the quantitative route evaluation.

Table 5.1 Quantitative Route Evaluation

Features	Road Allowance Alternative Route	Cross Country Alternative Route
Length of Route (m)	8,129	7,328
Residences within 100 m (no.)	34	11
Water wells within 100 m (no.)	1	2
Area of Provincially Significant Wetlands potentially affected (m^2)*	64	7,031
Area of Non-Provincially Significant Wetlands potentially affected (m^2)*	155	424
Area of Area of Natural and Scientific Interest (ANSI) potentially affected (m^2)*	725	6,784
Number of watercourse crossings (no.)	2	2
Area of greenlands or core greenlands land use potentially affected (m^2)*	1,893	17,219
Area of primary agriculture land use potentially affected (m^2)*	2,213	25,543
Area of secondary agriculture land use potentially affected (m^2)*	3,204	11,828
Area of industrial land use potentially affected (m^2)*	387	414

* Alignment of the proposed pipeline within road allowance is not anticipated to have an impact on these features. Calculations in Table 5.1 represent a worst case scenario.

As indicated in the quantitative evaluation shown in **Table 5-1**, the Road Allowance Alternative Route has the least number of shaded boxes, indicating that it is the route with the least potential environmental and socio-economic impacts from a quantitative perspective.

The Alternative Routes were also compared qualitatively by considering stakeholder input and the professional opinion of Stantec and Union Gas.

In an email sent on April 2, 2008, the County of Wellington stated that sections of Wellington Road 35 between Wellington Road 34 and Concession 4 have several wet/swamp areas adjacent to the road. The county expressed concern regarding the fragile base and further settlement or failure of the road that may be associated with pipeline construction activities. The County is also concerned with traffic control during construction adjacent to Wellington Road 35, as well as cleanup after construction.

The MTO stated in a letter dated June 25, 2008 that they have no objections to the routing options outlined by Stantec. They also stated that the crossing of Highway 401 must be completed by jack and bore method, delivery and receiving pits must be located outside of the highway road allowance, and that an encroachment permit will be required for the crossing operation which will require plans and profiles to be submitted to the MTO. On September 10, 2008 Stantec contacted the MTO to determine if HDD would be an acceptable technique for crossing Highway 401, and the MTO agreed that it would be.

In a letter dated April 11, 2008, the GRCA identified several areas of concern within the Study Area including Mill Creek, tributaries to Mill Creek, tributaries of Fairchild Creek, the Cranberry-Oil Well Bog Complex PSW, Mill Creek Wetland PSW, Fairchild Creek PSW and the Oil Well Bog – Little Tract and stated that they should be avoided to the extent possible. They also stated that large portions of the Study Area are regulated by the GRCA.

Ducks Unlimited Canada stated in a letter dated April 21, 2008, that although the natural areas within the Study Area have experienced past man-made disturbances, they still provide important habitat for a variety of wetland species. Ducks Unlimited requested that ground work should have regard for the sustainability of wetlands and their surrounding upland habitat.

In a letter dated May 1, 2008 MMAH provided information regarding, and the link to, the Provincial Policy Statement, the Growth Plan for the Greater Golden Horseshoe area, and the Greenbelt Plan for the Greater Golden Horseshoe area.

A letter was received from the MNR dated June 2, 2008 that informed Stantec of three PSWs, Cranberry – Oil Well Bog, Mill Creek, and Fairchild Creek Headwaters, tributaries to two coldwater creeks, Mill Creek and Irish Creek, one Life Science ANSI, Oil Well Bog – Little Tract, and rare species that exist within the Study Area including: Blanding's Turtle, Milksnake, Eastern Ribbonsnake, Least Bitten, Wild Bean, Harbinger of Spring, Carey's Sedge, and Shrubby St. Johnswort. They stated that it may be necessary to complete site surveys prior to construction in order to determine/confirm the presence of rare species and/or their habitat.

The City of Guelph sent a letter dated July 10, 2008 informing Stantec that they are in support of any enhancements to the natural gas delivery system in the City of Guelph. They provided information from the City of Guelph Official Plan which has identified 100 m on either side of Forestell Road as an 'Area of Archaeological Potential'. The City of Guelph Official Plan also designates a narrow strip of land located along the north side of Forestell Road, east of Downey Road and approximately 200 m in length, as 'Other Natural Heritage Features'. Both of these designations require that a Stage 1 Archaeological Assessment be completed by a licensed archaeologist prior to development activities.

It has been identified by the County of Wellington that there are a few areas along Wellington Road 35 that they are concerned about as well as traffic control during construction and clean up after construction of the proposed pipeline. The City of Guelph has also identified two areas of concern along Forestell Road. With proper protective and mitigative techniques, these

concerns will be addressed and it is unlikely that any significant impacts will result from construction of the proposed pipeline.

A summary and copies of this correspondence is located in **Appendix B1** and **Appendix B3** respectively.

Based on information received from stakeholders, there are several natural areas within the Study Area that should be avoided to the extent possible. As both the Road Allowance Alternative Route and the Cross Country Alternative Route traverse all of these natural areas, the Road Allowance Alternative Route will have less potential to impact these areas since it can be constructed entirely within road allowance, resulting in less total area potentially impacted.

5.3.2 Selection of the Preliminary Preferred Route

Stantec considered several factors prior to identification of the Preliminary Preferred Route. The comparison of the routes considered the advantages and disadvantages of each route.

Based on the quantitative and qualitative analysis described in **Section 5.3.1**, the Road Allowance Alternative Route was determined as preferable from an overall environmental and socio-economic perspective and was identified as the Preliminary Preferred Route. The location of the Preliminary Preferred Route appears as a solid blue line on **Appendix A, Figure A-3.**

Based on field evaluations and a review of published data, either side of Wellington Road 35, Wellington Road 34, and Forestell Road are environmentally acceptable. From a constructability and engineering perspective, the west side of Wellington Road 35, the south side of Wellington Road 34, and the north side of Forestell Road are preferable. Alignment of the proposed pipeline within each road allowance is subject to the review and acceptance by each affected municipality.

5.4 STEP 4: PUBLIC CONSULTATION – ALTERNATIVE ROUTES AND PRELIMINARY PREFERRED ROUTE

The Preliminary Preferred Route and Alternative Routes were identified to agencies, First Nations, landowners, and the public through written correspondence and public consultation, including a Public Information Session held on June 26, 2008.

Seven of the eight attendees to the June 26, 2008 Public Information Session indicated through discussion that the Preliminary Preferred Route was the most ideal route. The main concern of the attendee that did not prefer the Preliminary Preferred Route was the potential impact to wetland areas along Wellington Road 34.

Exit questionnaires received from the Public Information Session indicated that attendees were primarily concerned with the impacts of construction on agricultural operations, wildlife, and wetlands. Both of the exit questionnaires were from landowners within the Study Area. Both

respondents indicated that the Preliminary Preferred Route was the optimal route. Exit questionnaire results from the Public Information Session can be seen in **Appendix B5**.

5.5 STEP 5: SELECTION AND CONFIRMATION OF PREFERRED ROUTE

5.5.1 Preferred Route Selection

The alignment of the Preliminary Preferred Route was reviewed by Stantec and Union Gas at an increased level of detail. The increased level of detail involved a field survey to determine the location of significant environmental and socio-economic features and a thorough analysis of the entire Preliminary Preferred Route alignment for constructability.

The detailed field analysis of the Preliminary Preferred Route alignment confirmed the location of the Preferred Route.

5.5.2 Confirmation of Preferred Route

Stantec selected the Preferred Route for the proposed pipeline based on more detailed field surveys, environmental and socio-economic constraints, consultation with stakeholders, comments received during the Public Information Session (held on June 26, 2008), and completed exit questionnaires. The Preliminary Preferred Route forms the Preferred Route. The location of the Preferred Route is illustrated in **Appendix A, Figure A-4**.

Comments regarding potential impacts upon environmental and socio-economic features were also used to help determine appropriate mitigation measures to further reduce potential impacts along the Preferred Route.

5.5.3 Preferred Route Alignment

Union Gas has reviewed and accepted Stantec's Preferred Route recommendation. Following Union Gas's review, they have proposed to use the west side of Wellington Road 35, the south side of Wellington Road 34, and the south side of Forestell Road. Once detailed engineering is completed to establish the location of utilities within the road allowance, the final alignment of the Preferred Route within the road allowances will be determined. The location of the Preferred Route is illustration in **Appendix A, Figure A-4** and **Appendix D.**

6.0 Proposed Pipeline Route Mitigation

This section identifies opportunities such as construction methods and timing to reduce potential negative impacts on environmental and socio-economic features along, or in close proximity to, the Preferred Route for the proposed pipeline. The mitigation photomosaics, included as **Appendix D**, illustrate the proposed alignment of the pipeline; as well as locate many of the mitigation measures outlined in this section.

This section:

- Describes the physical, biophysical, and the socio-economic features which occur along the Preferred Route;
- Discusses the impact of construction and operation of a natural gas pipeline; and,
- Recommends mitigation measures to reduce potential negative effects associated with construction and operation of a natural gas pipeline.

Constructing within or adjacent to road allowance significantly reduces the potential negative impacts that pipeline construction could have. The majority of the Preferred Route travels adjacent to the road allowance of Wellington Road 35. The route alignment was selected by Stantec to reduce the amount of potential impacts to environmental features by aligning it within a previously disturbed road allowance. Many environmental and socio-economic effects have been minimized through the route selection process. However, a number of mitigation measures are recommended to reduce or eliminate potential adverse effects, and are provided in the following sections.

6.1 PHYSICAL FEATURES

6.1.1 Physiography

Potential Impacts

The Study Area is located in the physiographical formation known as the Horseshoe moraines, which is primarily comprised of the Paris and Galt moraines. Topography along the Preferred Route is gently rolling with the occasional larger hill. Potential impacts to physiographic features typically occur on slopes adjacent to watercourses. Potential impacts may include surface soil erosion, trench slumping, and in extreme cases, sedimentation in watercourses. There are three watercourses and their tributaries within the Study Area; Irish Creek, Mill Creek and Fairchild Creek.

During construction, soils are more prone to erode due to the loss of vegetative cover, intensity and duration of rainfall events, antecedent soil moisture, surface soil cover, slope, soil texture, soil structure, and organic matter levels.

Mitigation and Protective Measures

It is recommended that HDD be used for the southern Mill Creek crossing. If this is not possible, the banks of Mill Creek may require grading to accommodate installation of the pipeline. Grading involves the removal of topsoil from the creek banks and "cutting" into the bank to accommodate installation of the pipeline. Essentially, the slopes approaching the creek bed are temporarily removed, the pipeline is installed, and the creek banks are restored to their original pre-construction condition.

To reduce the risk of complications associated with grading the slopes of the waterways, site-specific mitigation measures are required. Preparation for grading, which includes vegetation clearing, should not be initiated until the date of the actual watercourse crossing is imminent. Retaining trees and grasses on the approach slopes of the creek will minimize the risk of slope failure and siltation of the creek bed.

Clearing, topsoil stripping, and grading activities within the crossing area, should be initiated as close as possible to the date of a crossing. Prior to any construction activity, sediment control fence, fronted with a row of straw bales, should be securely installed on both banks of the watercourse parallel to the waters edge. The sediment control fence should be set back at least 10 m to 15 m from the waters edge or as directed by the Environmental Inspector. This barrier will protect the watercourse from receiving deleterious sediment.

All soil removed from the slope of the watercourse, including topsoil and spoil, should be stockpiled a minimum of 5 m from the edge of the watercourse. The section of the creek bank immediately adjacent to the creek bed (i.e. between the erosion control fences) should not be disturbed during grading activities.

As soon as possible following completion of the creek crossing, the slopes of the watercourse should be restored to their original grade. Topsoil should be replaced at a uniform depth, retaining the cross diversion berms across the slope. Seeding should be completed during favorable climatic conditions. Once sown, seed should be protected with a layer of erosion control matting that will assist in stabilizing the slope and propagation of the seed mixture. In the event that broadcast seeding is not feasible due to climatic season restrictions, hydroseeding should be considered. The silt fence, fronted with a row of straw bales, should remain securely installed on both banks of the watercourse throughout construction, restoration, and rehabilitation of the slopes.

If excavated, the banks of the creek should be restored to the original grade and profile, and stabilized immediately following backfilling.

To prevent erosion, during and after rainfall events, the area of land disturbed for construction should be monitored for erosion activity. Where evidence of erosion exists, corrective action should be implemented as soon as conditions permit. Recommended mitigation measures that may be considered include installation of silt fencing, straw bales, and erosion control matting. If possible, construction activities should take place during the summer months and be completed by early fall, when soil moisture levels are anticipated to be low.

Upon completion of construction and prior to September 30th, seeding should be done to allow for germination prior to winter. Where appropriate, seeded areas should be protected with appropriate stabilizing techniques. In the event that broadcast seeding is not feasible, hydroseeding should be considered. If installed, silt fencing should be maintained throughout construction, restoration, and rehabilitation until vegetative cover is fully established. The requirement for, and location of, silt fencing should be determined by Union Gas's Environmental Inspector.

With the effective implementation of the mitigation measures recommended above, construction activities should have no adverse environmental effects upon physiographical features traversed by the Preferred Route.

6.1.2 Bedrock

Potential Impacts

The Study Area consists of Paleozoic bedrock of the Guelph Formation. The Guelph Formation overlies the Lockport and Amabel Dolomites and consists of a buff-coloured, fine-grained sugary dolomite usually of high purity. This formation, combined with the Lockport and Amabel dolomites ranges in thickness from 60 m to 122 m (Hewitt, 1972). Based on Ministry of the Environment ("MOE") water well records, the depth to bedrock within the Study Area varies from 5.5 m to 54.9 m (MOE, 2005). It is very unlikely that bedrock would be encountered during construction of the pipeline.

Mitigation and Protective Measures

Since bedrock is not anticipated to be encountered during construction of the pipeline, specific mitigation measures have not been developed.

6.1.3 Mineral and Aggregate Resources

Potential Impacts

Outside of the Study Area the till deposits within the County of Wellington provide for a large aggregate extraction industry. There are no active aggregate extraction sites in the Study Area.

Data from Natural Resources Canada (2004) indicates that there are no major producers of base metals, coal, ferrous, or precious metals in the Study Area. There are also no exploration projects for these resources in the Study Area (Natural Resources Canada, 2004).

Mitigation and Protective Measures

Since there are no active mineral of aggregate resource extraction facilities within the Study Area, specific mitigation measures have not been developed.

6.1.4 Surficial Deposits

Potential Impacts

The pipeline alignment is situated entirely within road allowance. Disturbance of agricultural soils is not anticipated to occur as a result of pipeline construction.

During construction, soils are more prone to erode due to the loss of vegetative cover. The degree of erosion is also affected by the intensity and duration of rainfall events, soil moisture, surface soil cover, slope, soil texture, structure, and organic matter content.

Mitigation and Protective Measures

Where erosion develops or is evident, silt fence and straw bales should be installed to reduce soil transport. Reseeding should occur as soon as possible following installation of the pipeline when climatic conditions permit.

6.1.5 Seismicity

Potential Impacts

The Preferred Route is in zone 2, medium-low risk, on a risk scale from 1 through 5 (Natural Resources Canada, 2005). The probability of significant seismic activity in the area traversed by the proposed pipeline is extremely low.

Mitigation and Protective Measures

Since seismicity is not a concern along the Preferred Route, mitigation and protective measures have not been developed.

6.1.6 Climate

Potential Impacts

The entire pipeline is proposed to be constructed within road allowance, therefore during construction, potential impacts associated with inclement weather are not anticipated to be significant.

In dry conditions, high winds may generate airborne dust, which, if persistent, becomes a nuisance to residents adjacent to construction areas. Persistent, uncontrolled airborne dust is an irritant to residential and business properties located in close proximity to the proposed pipeline.

A period of heavy rainfall may cause a significant increase in the water level and flow velocity of roadside ditches and watercourses, as well as surface and groundwater levels. High water

levels and rapid flows may result in flooding of the trench line, and flooding of adjacent lands. Heavy rainfall may also increase the risk of soil erosion from the construction area.

Mitigation and Protective Measures

To protect natural areas adjacent to the road allowance, during and after rainfall events, the area of land disturbed for construction should be monitored for erosion activity. Where evidence of erosion exists, corrective action should be implemented as soon as conditions permit. Recommended mitigation measures that may be considered include installation of silt fencing, straw bales, and erosion control matting. If possible, construction activities should take place during the summer months and be completed by early fall, when soil moisture levels are anticipated to be low.

Erosion associated with high winds, resulting in soil loss and nuisance dust, can be reduced or eliminated by stabilizing spoil piles with straw mulch. Applying a low energy water spray to the work area can temporarily control nuisance dust.

If the mitigation measures recommended to reduce the impact of the inclement weather are followed, there should be no adverse environmental effects from climatic events that occur during construction.

6.1.7 Hydrology

Surficial Hydrology

Potential Impacts

As outlined in **Section 3**, there are three watercourses and their associated tributaries located within the Study Area; Irish Creek, Mill Creek and Fairchild Creek. The Preferred Route crosses two branches of Mill Creek and two ponds associated with Irish Creek.

There is the potential for water quality to be affected during construction of the pipeline through the following means:

- Accidental spills, from construction vehicles working in or adjacent to the watercourses and due to inappropriate handling or storage of fuel, dust suppressants, lubricants, or other potential contaminants; and,
- Unavoidable removal of stabilizing vegetative cover.

Specific issues related to hydrostatic testing are discussed in **Section 7**.

Potential impacts can be minimized by implementing Horizontal Directional Drill (“HDD”) technology. While using HDD technology, directional control of the drill bit is achieved using pressurized water and bentonite (an inert, non-toxic clay that eliminates concerns related to toxicity) directed through jets mounted on the drill bit. As the drill bit progresses a series of

sections of drill pipe will be attached to the drill head. Once the pilot hole is successfully drilled, the hole will be shaped and widened up to its final diameter using a series of progressively larger 'cutters' and 'reamers', which are run from one end of the hole to the other. The pre-welded pipe will then be attached to a pull head and pulled into position under the watercourse.

The main environmental issues pertaining to surficial water quality associated with the HDD method include:

- Sedimentation and contamination of the watercourse through the release of 'inadvertent returns' of drilling mud through the bed of the watercourse. Inadvertent returns occur when a significant amount of drilling fluid returns to the surface other than the entry or exit point due to migration of the fluid under pressure through cracks or fractures in the soil;
- Sedimentation and contamination of the watercourse through the release of 'inadvertent returns' of drilling mud onto the surface and the subsequent flow of this mud into the channel; and,
- Disposal of drilling mud that is collected at the entry and exit points of the HDD.

Mitigation and Protective Measures

Horizontal Directional Drill

In order to minimize the effects of erosion and sediment deposition while using the HDD method, standard erosion and sediment control measures must be implemented around the drill and pipe staging areas.

Once vegetative cover is removed and soil is disturbed at the drill exit site the potential for erosion and sediment deposition increases. Topsoil stripped from the drill exit site must be stockpiled in a location designated by the Environmental Inspector. The topsoil stockpile must be located as far as possible from adjacent surface receptors such as bar ditches, municipal drains and culverts.

General Mitigation and Protective Measures

General mitigation measures to protect the watercourses during pipeline construction are provided below.

Prior to construction, the contractor must obtain adequate quantities of the materials listed below in order to control erosion and sediment deposition. Additional supplies, as dictated by the Environmental Inspector, should be maintained onsite in a readily accessible location for maintenance and contingency purposes. Required supplies may include:

- Silt fencing;

- Straw bales;
- Wooden stakes;
- Sand bags;
- Water energy dissipater;
- Filter cloth;
- Water pumps (including stand-by pumps and sufficient lengths of hose); and,
- Snow fencing with sufficient quantities of t-bars.

Prior to construction, silt fencing must be erected at the discretion of the Environmental Inspector. Silt fencing must be properly keyed-in and maintained at all locations in order to work effectively and achieve maximum sediment control. Silt fencing must be inspected on a daily basis for wear and tear. Damaged or worn silt fencing must be replaced immediately.

To minimize effects on fish and fish habitat, the pipeline is planned for construction when water flows are minimal. The dam and pump water crossing technique must be implemented following the approved DFO Endorsed Sediment Control Plan **(Appendix F)**.

Groundwater

Potential Impacts

As discussed in **Appendix C2**, and illustrated in **Appendix C1, Figure C1-1**, there are 8 reported water wells within the Study Area. The average depth at which the water was found is 31.3 m ranging from 5.2 m to 54.9 m. Static water levels are variable, they average 27.0 m and range between 4.0 m to 53.9 m. The use for water wells known to occur within the Study Area is recorded as domestic. There is one documented water well within 100 m of the Preferred Route (MOE, 2005).

Due to the shallow depth of excavation associated with an NPS 12 pipeline, approximately 2 m, construction is not anticipated to affect groundwater; however, in wet areas dewatering may be required to lower the near-surface water table to enable excavation of a trench.

Mitigation and Protective Measures

The presence of recently drilled or non-documented water wells will be investigated with landowners and corridor tenants along the Preferred Route prior to construction. Union Gas's Standard Water Well Monitoring Program will be implemented, which involves retaining the services of a hydrogeologist to identify the wells that require monitoring.

Although not anticipated, if a high water table is encountered in isolated areas during trench excavation, dewatering may be required. Associated dewatering should be discharged in a vegetated, non-agricultural area, or into a filter system to eliminate ground scouring. An MOE

Permit to Take Water is required if more than 50,000 L per day is withdrawn as a result of dewatering activities.

Fuels, chemicals, and lubricants should be stored on level ground in properly contained/sealed storage areas. Refueling activities should be monitored at all times; vehicles should never be left unattended while being refueled. In the unlikely event of a spill, the MOE Spills Action Centre should be contacted, and spills containment and clean-up procedures implemented immediately.

Potential for effects to groundwater quality and quantity along the Preferred Route is low because the route travels adjacent to road allowance. With proper implementation of these measures, construction related activities should have no significant adverse effects upon hydrology along the Preferred Route.

6.2 BIOPHYSICAL FEATURES

6.2.1 Watercourses and Fisheries

Potential Impacts

The Preferred Route crosses two tributaries of Mill Creek and two ponds associated with Irish Creek. As discussed in **Section 3.3.1**, and shown in **Table 6.1**, Mill Creek has permanent flow throughout the year and has the potential to support coldwater fisheries.

Table 6.1 Watercourse Crossings by Preferred Route

Features	Mill Creek Tributary (southern)	Mill Creek Tributary (northern)	Pond associated with Irish Creek (southern)	Pond associated with Irish Creek (northern)
Location of watercourse crossing by Preferred Route	Wellington Road 35 between Concession 1 and Concession 2	Wellington Road 35 between Concession 1 and Concession 2	Wellington Road 35 between Wellington Road 34 and Concession 4	Wellington Road 35 between Wellington Road 34 and Concession 4
Latitude	43 25’ 53.16”	43 25' 33.92"	43 27’ 36.56”	43 27’ 42.11”
Longitude	80 12’ 19.05”	80 12' 14.47"	80 13’ 10.94”	80 13’ 13.38”
UTM Coordinate Easting	564326.348	564429.06	563123.872	563067.521
UTM Coordinate Northing	4808416.145	4808440.779	4812212.154	4812382.838

Table 6.1 Watercourse Crossings by Preferred Route				
Features	**Mill Creek Tributary (southern)**	**Mill Creek Tributary (northern)**	**Pond associated with Irish Creek (southern)**	**Pond associated with Irish Creek (northern)**
Significance	Potential to support coldwater fisheries	Potential to support coldwater fisheries	Do not have potential to support coldwater fisheries (classified as warmwater)	Do not have potential to support coldwater fisheries (classified as warmwater)

It is recommended that the southern crossing of Mill Creek be performed using the HDD method. While using HDD technology, directional control of the drill bit is achieved using pressurized water and bentonite (an inert, non-toxic clay that eliminates concerns related to toxicity) directed through jets mounted on the drill bit. As the drill bit progresses a series of sections of drill pipe will be attached to the drill head. Once the pilot hole is successfully drilled, the hole will be shaped and widened up to its final diameter using a series of progressively larger 'cutters' and 'reamers', which are run from one end of the hole to the other. The pre-welded pipe will then be attached to a pull head and pulled into position under the watercourse.

The main environmental issues pertaining to surficial water quality associated with the HDD method include:

- Sedimentation and contamination of the watercourse through the release of 'inadvertent returns' of drilling mud through the bed of the watercourse. Inadvertent returns occur when a significant amount of drilling fluid returns to the surface other than the entry or exit point due to migration of the fluid under pressure through cracks or fractures in the soil; and

- Sedimentation and contamination of the watercourse through the release of 'inadvertent returns' of drilling mud onto the surface and the subsequent flow of this mud into the channel.

The primary concern regarding potential effects of pipeline construction on fish and fish habitat is species viability and potential impacts to spawning/nursery activities.

Mitigation and Protective Measures

In order to minimize the effects of erosion and sediment deposition while using the HDD method, standard erosion and sediment control measures must be implemented around the drill and pipe staging areas.

Once vegetative cover is removed and soil is disturbed at the drill exit site the potential for erosion and sediment deposition increases. Topsoil stripped from the drill exit site must be stockpiled in a location designated by the Environmental Inspector. The topsoil stockpile must be located as far as possible from adjacent surface receptors such as bar ditches, municipal drains and culverts.

The following mitigation measures should be followed for all watercourse crossings when constructing in or near fish habitat. These actions should be completed in accordance with the DFO Endorsed Sediment Control Plan **(Appendix F)** where necessary:

- Water crossings should be constructed during the summer months, when fish are not migrating or spawning, and water flow is low;
- Prior to removal of the vegetation cover, effective mitigation techniques for erosion and sediment must be in place to protect water quality. Limit disturbance to the area during construction and delay grubbing activities until immediately prior to grading operations;
- Materials removed or stockpiled during construction (e.g. excavated soil, backfill material) must be deposited and contained in a manner to ensure sediment does not enter the watercourse;
- There must be no fording of any flowing stream;
- All exposed mineral soil must be graded to a stable slope and treated as quickly as possible to prevent erosion and sediment from entering the water; and,
- Union Gas is to ensure that additional materials (e.g. rip rap and silt fencing) are readily available in case there is an urgent need for erosion and sediment control.

6.2.2 Forest and Vegetation Cover

Potential Impacts

Road allowances undergo continual management by municipalities. Grass and brush cutting, pesticide spraying, and salt deposition are common occurrences. As a result, vegetative cover within road allowance generally consists of common and hardy plant species that are adaptable to disturbed environments.

Most trees situated adjacent to the proposed pipeline have been previously impacted during installation of utilities, hydroelectric lines, for road construction and maintenance and historical disturbances. Consequently, minimal tree removal will be required as part of this project.

Mitigation and Protective Measures

When designing and planning the right-of-way for the Preferred Route, Union Gas should consider the minimum width required to facilitate construction. Specifically, Union Gas should give consideration to clearing the least amount of trees as possible. Where trees are present adjacent to the Preferred Route, protective measures such as snow fencing and working outside

the drip line should reduce impacts. To minimize the extent of disturbance to vegetation cover, vehicle movement and equipment storage should be confined to the right-of-way areas.

It is anticipated that a quick recovery of herbaceous ground cover will result due to natural in growth from adjacent areas. The seed mix, fertilizer, and application rates should be determined prior to initiation of construction. Union Gas will work with the Township of Puslinch, the City of Guelph, the County of Wellington, and the GRCA to determine rehabilitation measures and vegetation replacement requirements for trees and vegetation removed along the Preferred Route.

No significant adverse impacts are anticipated to vegetation adjacent to the Preferred Route, provided the measures described above are followed. No forests or woodlots are anticipated to be impacted by the proposed Project

6.2.3 Wetlands

Potential Impacts

The Preferred Route for the proposed pipeline has the potential to affect provincially significant and other wetland areas. The northern limit of the Fairchild Creek Headwaters Complex PSW is located near the start point of the Preferred Route. The Preferred Route travels through the Mill (Galt) Creek Wetland PSW, an unnamed wetland complex just north of HWY 401 and the Cranberry – Oil Well Bog Complex. These wetland areas will be traversed by the Preferred Route within the road allowance of Wellington Road 35.

Although it is unlikely since the Preferred Route will be aligned within the road allowance of Wellington Road 35, there is the potential for water quality to be affected during construction of the pipeline through the following means:

- Accidental spills, from construction vehicles working in or adjacent to the watercourses and due to inappropriate handling or storage of fuel, dust suppressants, lubricants, or other potential contaminants;
- Unavoidable removal of stabilizing vegetative cover resulting in soil erosion; and,
- Release of inadvertent returns during HDD operations.

Mitigation and Protective Measures

The following mitigation measures should be followed when constructing in close proximity to a PSW:

- Construction should occur during the summer months, when water levels are low;

- Prior to removal of the vegetation cover, effective mitigation techniques for erosion and sediment must be in place to protect water quality. Limit disturbance to the area during construction and delay grubbing activities until immediately prior to grading operations;
- Materials removed or stockpiled during construction (e.g. excavated soil, backfill material) must be deposited and contained in a manner to ensure sediment does not enter the wetland;
- All exposed mineral soil must be graded to a stable slope and treated as quickly as possible to prevent erosion and sediment from entering the wetland;
- Union Gas is to ensure that additional materials (e.g. rip rap and silt fencing) are readily available in case there is an urgent need for erosion and sediment control;
- Implement HDD technology where possible;
- Locate pipeline as close as possible to traveled portion of the road; and,
- Store excavated trench material on traveled portion of the road.

6.2.4 Wildlife

Potential Impacts

Due to the presence of woodlots, watercourses, and fencelines in close proximity to the Preferred Route, opportunities for bird, mammal, reptile or amphibian habitat exists. Species that could possibly be encountered during construction include white-tailed deer, raccoons, groundhogs, squirrels, skunks and various bird species. Since the Preferred Route is within a road allowance, it is not anticipated that wildlife will be impacted during construction or operation of the pipeline.

Mitigation and Protective Measures

Since it is not anticipated that construction and operation of the Preferred Route will impact wildlife populations, no mitigation or protective measures are necessary.

6.2.5 Rare, Threatened, or Endangered Species

As discussed in **Appendix C2, Section 3.5**, a review of the NHIC (2005) and National Species at Risk (Environment Canada, 2004) databases identified 23 rare or at-risk wildlife and vegetation species that could possibly inhabit the Study Area. The exact location of rare species is kept confidential. The entire length of the Preferred Route will be aligned within road allowance; therefore no rare or significant species are anticipated to be affected by the construction of this Project.

Mitigation and Protective Measures

To confirm that no rare or significant wildlife and vegetation species are anticipated to be encountered during construction of this Project, aquatic and terrestrial field surveys should be completed along the length of the Preferred Route alignment.

If the field surveys indicate that significant species are likely to be encountered during construction, Union Gas should consult with the MNR regarding appropriate protective measures.

6.2.6 Natural Areas

Potential Impacts

The Preferred Route traverses the Galt (Mill) Creek forest Life Science ANSI and the Oil Well Bog – Little Tract Life Science ANSI. These Life Science ANSIs will be traversed by the Preferred Route within the road allowance of Wellington Road 35.

Most trees situated adjacent to the proposed pipeline have been previously impacted during installation of utilities, hydroelectric lines, road construction and maintenance and historical disturbances. Consequently, minimal tree removal will be required as part of this project.

Mitigation and Protective Measures

When designing and planning the right-of-way for the Preferred Route, Union Gas should consider the minimum width required to facilitate construction. Specifically, Union Gas should give consideration to clearing the least amount of trees and vegetation as possible. Where trees are present adjacent to the Preferred Route, protective measures such as snow fencing and working outside the drip line should reduce impacts. To minimize the extent of disturbance to vegetation cover, vehicle movement and equipment storage should be confined to the right-of-way areas. In addition, mitigation from **Section 6.2.3** Wetlands should be followed.

6.3 SOCIO-ECONOMIC ENVIRONMENT

6.3.1 Municipal Structure

Potential Impacts

The Preferred Route crosses greenlands and core greenlands, primary agriculture, and secondary agriculture land uses. Several residences and farming businesses are situated within 100 m of the proposed pipeline alignment. There is one documented water well within 100 m of the Preferred Route.

After short-term disruption and use of municipal roads during the construction phase, it is expected that the overall impact to this area will be positive. The anticipated municipal taxes paid by Union Gas on an annual basis will be a significant long-term economic benefit of the

pipeline. The amount of these taxes has not yet been determined, but will be based upon provincial assessment standards for the length of the pipeline.

While the increased number of personnel present in the area during pipeline construction will demand some services from the local municipality, the demand is expected to be minimal and short-term. Once the pipeline is in operation, it will require minimal municipal services.

Mitigation and Protective Measures

The presence of recently drilled or non-documented water wells, such as the above mentioned well, will be investigated with residents adjacent to the Preferred Route prior to construction. Union Gas's Standard Water Well Monitoring Program will be implemented, which involves retaining the services of a hydrogeologist to identify water wells that will require to be monitored.

Prior to commencing construction of the proposed pipeline, Union Gas should continue to consult with municipalities to identify specific concerns and potential mitigation measures to eliminate present and future problems. Concerns expressed during construction and operation of the proposed pipeline by affected municipalities should be addressed in an expeditious and courteous manner.

No significant adverse impacts on municipal structure are anticipated.

6.3.2 Population and Institutional Facilities

Potential Impacts

The preferred route generally avoids urban areas. However, the route does travel in relatively close proximity to homes within the Village of Paddock's Corners. Dust, noise, vibration or disruption related to construction can be expected to dissipate within 100 m of the construction area; consequently, a 100 m distance was used as the environmental and socio-economic inventory boundary within which most features were identified. A total of 34 homes were identified to be within 100 m from either side of the preferred route.

Residents may experience a temporary disruption in the enjoyment and use of their property during pipeline construction. Short-term impacts associated with disturbance, disruption or loss of use may occur during construction as a result of noise, dust, or additional traffic volumes.

Construction activity and construction crews may pose an undesirable presence during pipeline construction. Furthermore, increased traffic along municipal roads may increase potential for vehicle accidents. Residents may experience occasional inconveniences where local purchases and pipeline purchases are from the same retail outlet.

Mitigation and Protective Measures

Union Gas should address concerns expressed by residents, businesses, and institutions in an expeditious and courteous manner. Prior to construction, Union Gas should provide residents and businesses along the Preferred Route with a construction communication procedure and every reasonable effort should be made by Union Gas to address concerns and maintain good landowner relations.

Measures for reducing noise and dust on the affected properties, and post-construction landscaping requirements to replace or repair laneways and business entrances should be taken.

Traffic safety planning, barriers to public access to construction sites and other construction safety measures should be in place during construction. Signs indicating a buried pipeline should also be placed at all road and watercourse crossings.

Should landowners express concerns during construction or operation of the pipeline, every effort should be made by Union Gas to address concerns and maintain landowner relations.

To minimize inconveniences brought on by excessive noise, all engines associated with construction equipment should be equipped with mufflers. Nuisance dust can be minimized by proper maintenance of road surfaces. Traveled surfaces should be kept moist during excessively dry and/or windy conditions by frequently applying a low energy water spray. Road surfaces should be cleared of debris as required.

Public safety is a primary focus of Union Gas. Safety issues, both perceived and real, can be mitigated by implementing the standard proven safety measures during construction, ensuring that the pipeline is constructed and operated in accordance with all applicable codes and regulations, and monitoring pipeline integrity once it is in service. As part of its annual awareness campaign, Union Gas provides each landowner with a Landowner Information Booklet which educates landowners on pipeline safety. Union Gas should continue the Landowner Relations Program through construction and operation of the proposed pipeline. Union Gas should also maintain their toll free number used to field any enquiries at any time of the day.

The proposed pipeline will be constructed and operated in accordance with the CSA code and the Technical Standards and Safety Authority (TSSA, 1998) guidelines. Health and Safety Risks are the primary focus in the CSA design codes that this project will adhere to for design, construction and operation. The pipeline will be constructed and operated safely, allowing mitigation of perceived risks by implementation of risk communication strategies during construction and operation.

6.3.3 Culture and Tourism

Potential Impacts

There is one recreational area within the Study Area. The Vance trails are located within the Oil Well Bog - Little Track which is a Life Science ANSI located south east of the intersection of Wellington Road 35 and Concession 4. These trails are managed the GRCA for public recreation and preservation.

It is not anticipated that construction of the Preferred Route will have a significant impact on this recreational area. There are two entrances to the Vance trails from Wellington Road 35.

Mitigation and Protective Measures

Union Gas should ensure that during construction, at least one of the two entrances into the Vance Trails is unobstructed. Union Gas should consult with the GRCA to identify specific concerns and potential mitigation measures to eliminate present and future problems. Concerns expressed during construction and operation of the proposed pipeline by the GRCA should be addressed in an expeditious and courteous manner.

6.3.4 Land Use

Potential Impacts

The Preferred Route traverses rural areas in the Township of Puslinch and the City of Guelph, County of Wellington, Ontario. Land uses along the Preferred Route are classified as being Greenland and Core Greenland, Primary Agriculture, Secondary Agriculture, and Industrial (County of Wellington, 2008; City of Guelph, 2006). Land uses within the Study Area are illustrated in **Appendix C1, Figure C1-2**.

The pipeline has been aligned within the road allowance of Wellington Road 35, Wellington Road 34, and Forestell Road.

Short-term impacts associated with disturbance, disruption, or loss of use may occur during construction due to noise, dust, or additional traffic volumes. Residents and businesses may experience a temporary disruption in the enjoyment and use of their property during pipeline construction.

Temporary disruption of commercial and industrial activities may occur where the Preferred Route crosses entrances and exits to residences.

Construction activity and construction crews may pose an undesirable presence during pipeline construction. Furthermore, increased traffic along municipal roads may increase potential for vehicle accidents. Residents may experience occasional inconveniences where local purchases and pipeline purchases are from the same retail outlet. A temporary increase in economic activity, particularly at local restaurants, can be expected during pipeline construction.

Mitigation and Protective Measures

While the Preferred Route avoids direct impacts on urban areas, it does travel in close proximity to residences and businesses. Dust, noise, or disruption related to construction can be expected to dissipate within 100 m of the construction area. Consequently, a 100 m distance was used as the environmental and socio-economic inventory boundary within which most features were identified.

Safety issues, both perceived and real, can be mitigated by implementing proven safety measures during construction, ensuring that the pipeline is constructed and operated in accordance with all applicable codes and regulations, and monitoring pipeline integrity once it is in service.

Along the Preferred Route if residential laneways are encountered, they may be open cut provided that asphalt driveways are sawed rather than dug. Residential laneways that are excavated should be restored to their pre-construction condition. Access to and from residential homes must be maintained at all times. During trench excavation, steel plates should be available on-site in the event a homeowner or tenant requires access.

Traffic safety planning, barriers to public access to construction sites, and other construction safety measures should be in place and minimized during construction. Signs indicating the presence of a buried pipeline should be placed at all road and watercourse crossings.

The Union Gas Chief Inspector and Lands person will be available to assist in maintaining good relations throughout construction and operation of the proposed pipeline. Concerns expressed during construction by residents in the area of the Preferred Route should be addressed in an expeditious and courteous manner.

To minimize inconveniences brought on by excessive noise, all engines associated with construction vehicles should be equipped with mufflers. Where possible, noise levels arising from equipment should be below the maximum acceptable limits at the nearest residence as recognized by the MOE.

Construction activities that could create noise should be restricted to daylight hours and adhere to any local noise by-laws. If construction activities must be carried out which cause excessive noise outside of these time frames, adjacent residents and the appropriate municipality should be notified.

Occasional disruptions at construction access locations can be minimized by providing advance notice to local police, posting construction signs to warn oncoming motorists of construction activity, assigning a traffic control duty officer to assist with truck entry and exit where possible, and providing proper training, safety attire and equipment to the traffic control officer.

Another potential effect on land use is the temporary removal of fences. Fences cut on, or adjacent to, the pipeline alignment should be reconstructed to their pre-construction condition.

6.3.5 Land Claims

Potential Impacts

Indian and Northern Affairs Canada's (INAC), Ontario Research Team, Litigation and Management and Resolution Branch, Specific Claims Branch, and Comprehensive Claims Branch, the Ontario Secretariat for Aboriginal Affairs, the Ministry of the Attorney General, and the following First Nations: Mississaugas of the New Credit; Six Nations of the Grand River Territory; Mississaugas of Scugog Island First Nation; Hiawartha First Nation; Curve Lake First Nation; and, Alderville First Nation, were contacted on March 18, 2008 to seek information regarding the status of lands within the Study Area. These stakeholders were also sent letters on June 2, 2008 to notify them of the Public Information Session scheduled for June 26, 2008.

In a letter dated April 8, 2008, INAC's Specific Claims Branch confirmed that there are no specific claims in the Study Area.

The Six Nations Council sent a letter dated April 10, 2008 informing Stantec that the Study Area is within the 1701 Treaty Territory (within six miles on either side of the Grand River). They stated that they have no comments at this time but would like to be kept up to date on the archaeological work that will be conducted within the Study Area.

INAC's Litigation and Resolution Management Branch advised in a letter dated June 16, 2008 that their inventory includes active ligitagion in the vicinity of the Study Area. The litigation is entitled: *Six Nations of the Grand River Band of Indians v. Attorney General for Canada and Her Majesty the Queen in Right of Ontario*. They were unable to comment with respect to possible effects of this claim since the case had not been adjudicated at the time this letter was written.

Summaries of correspondence with First Nations are located in **Appendix B1**. Copies of correspondence related to First Nations are located in **Appendix B3.**

Mitigation and Protective Measures

There are First Nations claims within the Study Area, as such the ownership of the land is being disputed with regards to this claim. Union Gas should continue to work closely with the Six Nations of the Grand River Band in the case that information regarding the land claim and affecting the routing of the proposed pipeline is brought forward by INAC or any of the First Nations contacted as part of this study.

6.3.6 Heritage and Archaeological Features

Potential Impacts

A Stage 1 archaeological assessment was completed to assess archaeological potential for both of the Alternative Routes within the Study Area. The Stage 1 assessment consisted of background research to identify known or potential archaeological sites within the Study Area. A variety of sources were consulted in the course of this work. These included a thorough

review of published and unpublished reports on past archaeological surveys and excavations, including the previous Stage 1 and 2 archaeological assessments prepared for the Guelph Reinforcement Pipeline (DPA 2003, 2004), a review of the history of land-use in the area, and an examination of archaeological site inventories and archival materials. The report concluded that lands within the vicinity of the Preferred Route have a moderate potential for the presence of archaeological remains.

Mitigation and Protective Measures

Prior to construction, a Stage 2 assessment is recommended to be completed along the alignment of the Preferred Route. This work should be conducted by a licensed archaeologist. The survey should be undertaken in accordance with the Ministry of Culture guidelines. The survey will serve to confirm the presence or absence of significant archaeological resources subject to potential impact from the proposed pipeline. In addition, these assessments should determine the extent to which the inherent archaeological potential of the alignment has been degraded by previous disturbances. Recommendations for mitigation and protection outlined in the Stage 2 report should be implemented during construction.

If deeply buried cultural remains are encountered during construction, all activity should be suspended and the Archaeological Review Officer of the Culture Programs Unit, Ontario Ministry of Culture, and the Cemeteries Regulation Unit of the Ontario Ministry of Government Services should be contacted to determine an appropriate course of action.

6.3.7 Existing Linear Facilities

Linear facilities that may be affected along the Preferred Route include: roads, hydroelectric distribution lines, and utilities.

Potential impacts include limitations to access to residences, business properties, emergency vehicle access and general impedance to traffic. The potential also exists for the temporary disruption of services such as telephone and electricity due to accidental severance of these services during trench excavation.

Roads

Potential Impacts

The Preferred Route is being constructed within road allowance. Impedance to vehicle transportation is the largest potential impact to residents, businesses, and vehicles using the roadways. **Table 6-2** lists roads that may be impacted during construction.

Table 6.2 Location of Preferred Route Relative to Roads

Road Name	Ownership	Location of Pipeline Relative to Road
Wellington Road 35	Municipal (County of Wellington)	Adjacent and Crossing
Concession 2	Municipal (Township of Puslinch)	Crossing
Highway 401	Provincial (Province of Ontario)	Crossing
Wellington Road 34	Municipal (County of Wellington)	Adjacent and Crossing
Forestell Road	Municipal (City of Guelph)	Adjacent and Crossing

Road crossings represent the construction activity with the most potential to disrupt traffic flow. The potential impact of constructing within the road allowance and road crossings includes the temporary disruption of traffic flow throughout construction. HDD under the road surface may be used for road crossings. Open cut road crossings are used for roads without significant traffic volumes. Although bored crossings allow traffic flow to continue across the work area throughout construction, these require additional temporary workspace on either side of the crossing location to accommodate excavation of the bore bays. Construction activities required to excavate bore bays results in additional disturbance at each crossing. Increased movement of construction equipment and materials on paved roads may also result in some deterioration of road surfaces.

The portion of Wellington Road 35 that is adjacent to the two ponds associated with Irish Creek has been identified by the County of Wellington as having a fragile base.

Mitigation and Protective Measures

Depending on the frequency of use, road crossings may be directionally drilled, bored, or open cut. HDD is the preferred method for roadways with high traffic volumes, such as those designated as Arterial or Expressway. Should the road be open cut, the area affected by construction should be returned to its original condition or better following construction. The period of time that the road is closed should be reduced to the shortest extent possible. Union Gas should meet with representatives of the Township of Puslinch, the City of Guelph, and the County of Wellington to address the following issues:

- Deterioration of roadways due to increased traffic;
- Preferred method of road crossings;
- Crossing procedures including resurfacing or grading of roadways, and traffic safety;
- Road restrictions and haul routes; and,

- Road surface and municipal drain restoration.

Equipment should be stored and operated only within the curb lane portion of the roadway to the extent possible. To reduce the risk of vehicle accidents or pedestrian injury, warning signs and construction barricades should be erected at all areas of construction activity near road crossings. Appropriate traffic control measures should be used if construction activity occurs before dawn or after dusk.

While constructing the pipeline within the road allowance of Wellington Road 35, along the sections that are in close proximity to the ponds associated with Irish Creek, Union Gas should consult with the County of Wellington to ensure that the fragile road base that has been identified in these areas is not compromised. It is not anticipated that construction of the pipeline along these sections of Wellington Road 35 will compromise the integrity or result in further settlement or failure of the road.

Although a short-term disruption in traffic will result from construction of the proposed pipeline, no long-term significant adverse impacts on roadways are anticipated with proper implementation of the measures described above.

Hydroelectric Distribution Lines

Potential Impacts

There are no major electrical transmission lines that run through the Study Area. Electric Distribution lines that operate below 115 kilovolts, using metal, concrete, or wooden poles are located within the Study Area. These service local communities, businesses and residences (Hydro One, 2005). Overhead cement pole hydroelectric wires are located on the west side of Wellington Road 35.

Mitigation and Protective Measures

During construction, all machine operators should be informed that power lines are present overhead. Lines that may interfere with the operation of construction equipment should be identified with red flags. Signs should be posted along the alignment of the Preferred Route stating “Danger - Overhead Power Lines.” The final alignment of the Preferred Route should consider the location of existing utility poles and their supporting guy wires.

Utilities

Potential Impacts

The Preferred Route crosses various buried utilities. Union Gas owns and operates a network of natural gas distribution pipelines within the Study Area. The Preferred Route will travel adjacent to an existing natural gas pipeline that travels parallel to north side of Forestell Road.

Telephone and television lines could be located along roadways in proximity to the Preferred Route. Careless trenching or HDD activities during construction may affect the operation of existing buried utilities. Heavy machinery crossing these utilities may potentially impact their integrity and disrupt their operation. The buried utilities traversed by, or in close proximity to, the proposed pipeline provide a vital service to the residents and businesses within the Study Area. Severing any of these utilities would result in disruptions to a number of industries, businesses, or residents.

Mitigation and Protective Measures

Prior to construction, Union Gas should coordinate with the Township of Puslinch, the City of Guelph, the County of Wellington, and all local utility companies to determine the location of all buried utilities, and potential future utilities, in the area of excavation and construction activity. Safety and distance requirements should be determined prior to construction adjacent to existing natural gas pipelines. Heavy machinery should cross underground utilities as little as possible. All heavy machinery operators should be advised of the location of all buried utilities and the concerns associated with construction in the vicinity of buried utilities.

6.3.8 Waste Disposal and Potentially Contaminated Sites

Potential Impacts

There is one known, registered, active waste disposal site within the Study Area, however it is not in close proximity to the Preferred Route (MOE, 1991). The Aberfoyle Landfill site is located at 6922 Concession 4 in the Township of Puslinch, and is approximately 2 km from the closest point of the Preferred Route. It is not anticipated that there will be any impacts on the construction or operation of the pipeline associated with this landfill.

Mitigation and Protective Measures

Since it is not anticipated that there will be any impacts from this landfill on the construction or operation of the Preferred Route, mitigation measures have not been developed.

6.4 PERMITS REQUIRED

Permits should be secured prior to construction of the pipeline. Permits may be required from federal and provincial levels of government and the GRCA.

7.0 Hydrostatic Testing

The hydrostatic test is proposed to be completed for the entire length of the proposed pipeline. The required volume of water (approximately 593,140 L) may be obtained from either a municipal source or from a natural source. As the pipeline does not traverse any municipal or natural source capable of providing this volume of water, it must be hauled to a designated filling station.

When the hydrostatic test is complete, discharge water is released. The flow of the hydrostatic test water has the potential to impact downstream domestic users, as well as fish, and aquatic and waterfowl habitats. An uncontrolled discharge of water from the hydrostatic test could cause downstream flooding, erosion or sedimentation. Other potential effects associated with uncontrolled discharge include the introduction of foreign aquatic organisms to a drainage basin and introduction of hazardous materials or pollutants to soils or bodies of water. Careless refueling or failure of pumps that are adjacent to watercourses could result in watercourse contamination. In addition, the high pressures associated with testing could potentially endanger the general public or construction personnel in the event of line failure.

Nearby residents may experience temporary inconveniences related to noise associated with the operation of pumps utilized to fill the pipeline with test water, as well, lighting may inconvenience residents if pumping and testing continues into the night.

A Permit to Take Water from the MOE must be obtained should water be withdrawn from a natural source and the volume exceeds 50,000 L/day. Prior to the withdrawal of water from a municipal source, the Township of Puslinch should be contacted to confirm the maximum rate of withdrawal.

Temporary lighting should be turned on at dusk and extinguished at dawn. Lighting should be directed towards the work site but away from the direction of any nearby residences. To reduce noise levels all pumps should be properly muffled.

To reduce the potential for erosion and scouring at dewatering points, appropriate energy dissipation techniques should be utilized. At all dewatering points, discharge piping should be free of leaks and should be properly anchored to prevent bouncing or snaking during surging. The rate of discharge should be monitored to ensure no erosion or flooding occurs. If energy dissipation measures are found to be inadequate, the rate of dewatering should be reduced or ceased until satisfactory mitigation measures are in place.

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8.0 Cumulative Effects

Policy makers are increasingly seeing Cumulative Effects Assessment (CEA) as representing a *best practice* for effects assessment (IAIA, 1999). Consequently, the recognition of CEA as a best practice is now reflected in many provincial regulatory documents. With regard to development of hydrocarbon pipelines in Ontario, this best practice principle is reflected in the OEB *Environmental Guidelines* (2003), which notes that cumulative effects of pipeline construction should be identified and discussed in the EA as an integral part of the assessment.

Building upon the intent of the OEB *Environmental Guidelines* (2003), past OEB decisions provide for clarification on the assessment of cumulative effects associated with new pipeline systems (RP-2005-0022 and RP-2005-0478). The OEB (RP-2005-0022) specified that only those effects that are additive or interact with the effects that have already been identified as resulting from the pipeline construction are to be considered under cumulative effects. If the environmental impacts are compounded, it will be necessary to determine whether these effects warrant mitigation measures such as alterations in routing, timing of construction or other measures that can address the cumulative impacts.

This CEA has been prepared with consideration of the above noted decision as well as the OEB *Environmental Guidelines* (2003).

8.1 METHODOLOGY

This CEA describes the potential cumulative effects of pipeline construction in combination with the existing environment and the effects of unrelated existing or approved projects that have a high likelihood of proceeding. Cumulative effects include the temporal and spatial accumulations of change that occur within an area or system due to past, present, and future activities. Change can accumulate within systems in either an additive (*i.e.* cumulative) or interactive (*i.e.* synergistic) manner.

In terms of CEA methodology, it is generally accepted that due to the uncertainty and complexity of cumulative effects, no standard method of assessment exists. There are two distinct approaches to CEA: i) analytical, and ii) planning. Analytical approaches focus on information generation using evaluation tools, such as research design and scientific analysis, whereas planning approaches extend beyond analysis, applying planning principles and procedures to set values and address multiple objectives.

Selection of an appropriate approach and evaluation tools depends upon the objectives and issues surrounding the CEA. For construction of the proposed pipeline, the OEB suggests the use of a planning based approach. By applying the best practice principles of avoidance, minimization, and compensation to limit project-specific effects (**Chapters 6 and 7**), potential adverse effects on socio-economic features and the natural environment have been greatly minimized prior to accounting for the effects of other unrelated projects (*i.e.* cumulative effects).

Specifically, this CEA methodology is designed to evaluate and manage the additive and interactive effects from the following sources:

- Existing infrastructure, facilities, and activities as determined from available data sets;
- The proposed pipeline and associated infrastructure as described in **Section 1.1** of this ER; and,
- Future activities where the undertaking will proceed, or has a high probability of proceeding.

This planning approach facilitates a landscape level analysis that supplements the regional analysis discussed in **Appendix C2**, and is consistent with recommendations to evaluate potential cumulative effects at various levels. This level of analysis allows the CEA to focus on the issues that are pertinent to the Project, and to avoid the generation and evaluation of information that is of little diagnostic value.

8.2 STUDY BOUNDARIES

8.2.1 Spatial

The spatial study boundaries for the CEA were extended beyond the Preferred Route alignment. To make conservative assumptions about the magnitude and probability of possible effects, the original Study Area boundary used for the ER was also used for the CEA. The Study Area boundary is beyond the *zone of influence* of pipeline construction and operation activities (*e.g.* dust and noise), and consequently, the identified effects will have diminished to background levels. The Study Area is also considered conservative in terms of managing both effects and risks.

8.2.2 Temporal

The temporal boundaries for this CEA reflect the nature and timing of pipeline activities, and the availability of information surrounding future projects with a high probability of proceeding. The Project schedule identifies three key milestone activities, including i) ER and technical design - 2008; ii) construction - 2009; and, iii) operation - 2009 through 2059. Fifty years of pipeline operation is used as an assumption for the purpose of this CEA, although the pipeline may be operational beyond fifty years. Based upon these milestone activities, three time periods were selected for evaluation in the CEA: 2008, 2009, and 2015.

Existing conditions were considered as those that existed and were identified during the ER process (*i.e.* 2008). In some cases, published data were not current to 2008 and thus the assessment relied on a combination of best available information, public input, and field investigations. The year 2009, covering post construction clean-up activities, was selected to represent the construction and reclamation period, and the year 2015 was selected to represent the operation and maintenance period. Forecasting beyond 2015 increases the uncertainty in predicting whether projects will proceed, and the effects associated with these projects.

Although rare in occurrence, it is plausible that accidental or emergency events may arise due to an unforeseen chain of events during the pipeline's operational life. As a result of the rarity and magnitude of such events, they have not been assessed here, as they are extreme in nature when compared to the effects of normal maintenance activities, and require separate response plans. Pipeline retirement is another event that is beyond the temporal boundaries of this CEA and will not be assessed here.

8.3 ANALYSIS OF CUMULATIVE EFFECTS

Section 6 of this ER considered the potential effects of construction and operation of the pipeline on specific features and conditions, and proposed mitigation measures to avoid or reduce the potential for impact. This cumulative effects assessment evaluates the significance of residual effects (after mitigation) of the construction and maintenance of the pipeline along with the effects of other unrelated projects.

A number of agencies were contacted to determine the nature of any unrelated projects planned or scheduled in the Study Area that are in the final stages of implementation or approval. The agencies and companies contacted include:

- County of Wellington;
- Township of Puslinch;
- City of Guelph;
- GRCA;
- MTO;
- MOE; and,
- MNR.

Construction activities associated with the development of the proposed pipeline, and its associated facilities, between 2008 and 2009, will include:

- Field investigations as required along the Preferred Route (spring 2009);
- Mainline Construction - pipe installation, tie-ins, and commissioning (summer 2009); and,
- Post construction clean-up activities (fall 2009).

Existing, ongoing, or highly probable developments in the Study Area include:

- Proposed Capital Paving Aikensville Gravel Pit
- Proposed CBM Aggregates' Mast Snyder Gravel Pit
- Hanlon Creek Business Park Phase III

8.3.1 Year 2008: Baseline Conditions

The Study Area is located in the Township of Puslinch, and a very small portion of the City of Guelph, County of Wellington, Ontario. Land use classifications in the Study Area include Primary and Secondary Agriculture, Greenlands and Core Greenlands, and Industrial (County of Wellington (2008), City of Guelph (2006)). According to these Official Plans the main land uses in the Study Area are Agriculture and Greenlands. Significant environmental and socio-economic features include:

- Natural areas such as PSWs, ANSIs, ESSs, and Life Science ANSIs;
- Residential homes;
- Irish Creek, Mill Creek, and Fairchild Creek;
- Contaminated lands, waste disposal sites and landfills;
- Utilities within road allowance; and,
- Recreational Areas.

The soil capability for agriculture (CLI) rates most of the Study Area as Class 3 (60.9%). The remaining portions of the Study Area are comprised of Class 2 (20.8%), Class 7 (11.8%), Class 5 (3.4%), Class 6 (2.8%) and Class 4 (0.2%) soils. These soils have subclass limitations of excess water, inundation by stream or lakes, stoniness, and topography. As a result, the area is predominantly comprised of prime agricultural land (Classes 1-3). As such, the land use in the Study Area is dominated by agriculture, which includes several woodlots and wetlands of various sizes. Existing farm operations have fields in various stages of crop rotations.

As discussed in **Section 3**, the forest region of the Study Area is Deciduous Forest. It is the northern extension of the large deciduous forest of the northeastern United States. Many of the trees found within the Study Area are at the northern limit of their range.

There are eight roads in the Study Area. Two are owned by the City of Guelph, three are owned by the Township of Puslinch, two by the County of Wellington, and one by the Province of Ontario. These roads are maintained and upgraded by their respective owners.

The Study Area falls within the jurisdiction of the GRCA and is subject to regulations of the Conservation Authority Act. The Study Area is drained by three subwatersheds located within the Grand River watershed. The main branch or tributaries of Irish Creek, Mill Creek and Fairchild Creek are located within the Study Area. These watercourses are tributaries of the Grand River, which is a tributary to Lake Erie.

Union Gas operates and maintains a network of natural gas pipelines throughout the Study Area. The existing pipeline system has been operational for many years, and residual impacts on vegetation outside of pipeline easements no longer exist.

Detailed environmental and socio-economic conditions within the Study Area are provided in **Appendix C2**.

Discussion

Since baseline conditions are from the pre-construction timeline, cumulative net impacts occurring during baseline conditions, within the Study Area, cannot be related to the Project. As mentioned above, the land use in the Study Area is dominantly agriculture, which creates potential impacts common to the agricultural industry such as: farm vehicles traveling on roadways, and soil sensitivity to compaction potentially affecting a decline in yield. These effects are expected to continue to be produced by farm operators during the construction period of the Project and further into the future, however, due to the progressive nature of the agricultural community, there are no net impacts anticipated from agriculture in the Study Area.

The eight roads within the Study Area are not scheduled for upgrading but they are anticipated to be regularly maintained as required.

Mitigation methods during construction and operation were discussed in **Section 6 and 7** of this report.

8.3.2 Year 2009: Construction

Based on information provided by the agencies and companies contacted, there are projects, unrelated to the construction of this proposed pipeline, which have been identified as having potential of proceeding concurrently with construction of the proposed pipeline.

Proposed Capital Paving Inc. Aikensville Pit

Capital Paving Inc. has applied for approval for their Proposed Aikensville Pit. The proposed aggregate operation will be located in part lots 13 and 14, Concession 3, Township of Puslinch, County of Wellington, Ontario; northwest of the intersection of Wellington Roads 34 and 35.

An estimated 1,250,000 tonnes of material is available at the site, of which approximately 152,000 tonnes are below the water table extraction. Yearly volumes are anticipated to be approximately 400,000 tonnes. Access to the site is proposed to be via a haul road extending westward to the site from Wellington Road 35. All land is to be rehabilitated to agricultural production, excluding two areas that are subject to below water extraction, which will be rehabilitated as wetlands, to complement existing natural features.

There is potential for opening of the Proposed Aikensville Pit to occur in the summer of 2009. It is anticipated that this pit will be active for approximately 7 years.

While the pit is open, traffic on surrounding roads and highways is anticipated to increase.

Proposed CBM Aggregates' Mast Snyder Pit

CBM Aggregates has applied for approval for their Proposed Mast Snyder Pit. The proposed aggregate operation will be located northwest of the intersection of Forestell Road and Downey Road, in the City of Guelph. At the time of report completion specific information regarding this gravel pit is unknown, however, it can be assumed that it will have a similar potential effect on environmental and socio-economic features as the proposed Capital Paving Inc. Aikensville Pit.

While the pit is open, traffic on surrounding roads and highways is anticipated to increase.

Discussion

To consider the additive and interactive effects at their maximum intensity, this cumulative effects assessment assumes that construction of the Union Gas Pipeline Project – Guelph Reinforcement Phase II, and each of the above noted projects would occur concurrently. An example of a potential cumulative effect could be increased noise and dust, resulting from construction and gravel hauling vehicles using local roads.

Primarily, significant effects associated with construction of the proposed pipeline have been minimized through the route selection process and the recommended mitigation measures. By aligning the Preferred Route within the road allowance of Wellington Road 35, Union Gas and Stantec have minimized fragmentation of woodlands, restrictions on urban expansion, and disruption to agricultural lands. By limiting the Project-specific effects, the potential interaction of effects from operation of the gravel pits has been considerably reduced.

Noise and dust disturbances are localized and can be largely dissipated through mitigation. Once construction is complete, noise and dust will no longer be issues with this project. The majority of the impacts associated with construction of the proposed project and interaction with the gravel pits are considered to have no cumulative significance.

Vegetation removal is also considered to have no cumulative significance. No fragmentation of woodlots will result from the proposed pipeline.

No cumulative effect is anticipated concerning archaeological resources because there is only a moderate potential for the presence of archaeological remains associated with the proposed pipeline, although a Stage 2 archaeological Assessment will confirm this. In the unlikely event that yet undiscovered archaeological remains are encountered, appropriate mitigation measures will be implemented to reduce potential impacts to archaeological remains. The approval of the other proposed developments are also likely contingent on no archaeological resources being discovered.

Contamination to groundwater and surface water has not been included in this analysis due to the proven success of the mitigation measures regarding watercourse crossings and water well monitoring to be implemented during pipeline construction. Also, if approved, the management plan for the aggregate operations will ensure the protection of both groundwater and surface water resources.

A cumulative effect of low significance is the impact of multiple projects, such as the operation of the gravel pits, and Union Gas's proposed pipeline occurring concurrently. Construction of these developments will result in the demand, both locally and regionally, for labour and project supplies such as food, accommodation, and equipment. All projects, including the proposed pipeline, are anticipated to have long-term effects on the economy through their tax contribution to local governments, with limited demand on government services and resources, and their periodic demand for supplies and services.

8.3.3 Year 2015: Maintenance

In addition to pipeline maintenance activities, there is one potential project that may be ongoing or take place within the CEA Study Area in the future. This potential project is:

Hanlon Creek Business Park

The proposed plan of the business park/industrial subdivision is bounded to the north by the Kortright Hills Phase 4 Residential Subdivision, to the east by the Hanlon Expressway (Provincial Highway #6), to the south by Forestell Road and to the west by Downey Road. The proposed site is 271.4 ha (671.2 acres) and will provide a contemporary business park in a natural setting with convenient transportation access. Operations permitted within the business park include office and industrial/warehousing operations with and without outdoor storage, and hotels and some service commercial uses.

The Hanlon Creek Business Park land uses comprise 54.5% (148.56 hectares or 367 acres) of the subdivision lands and extensive wetlands, woodlots and storm water management areas represent 34.5% of the land area.

Groundbreaking for this project will be based on the demand for industrial and commercial space in the south end of the City of Guelph.

The contribution of the proposed pipeline to cumulative noise, dust, and traffic will have ceased by 2015. As a result, no on-going combined effects are expected.

Expansion of Union Gas's Guelph Line Natural Gas Pipeline System

There is potential that Union Gas will need to expand their existing Guelph Line natural gas pipeline system in the future. This will depend on the rate of urban and industrial growth in the City of Guelph. Any future development by Union Gas will take into account the location of existing Union Gas natural gas pipelines and the contribution of the proposed pipeline to cumulative noise, dust, and traffic will have ceased by 2015. As a result, no on-going combined effects are expected.

Discussion

Pipeline operation and maintenance activities will continue to take place in the future.

The road allowances in which the Preferred Route will traverse are already cleared therefore significantly limiting the vegetation clearing that will have to take place. Any replanting of vegetated areas cleared during 2009 to accommodate pipeline construction will be re-established to baseline conditions by 2015.

Potential cumulative effects to wetlands in the study area will also diminish following the construction period. Provided mitigative recommendations are followed, function of the wetlands is not anticipated to be impacted by the construction within the road allowance.

Potential cumulative effects to aquatic fauna are expected to be negligible because of the mitigation measures implemented during construction and the time elapsed for regeneration. Under these conditions, cumulative effects should dissipate to the 2008 baseline conditions.

Taken collectively, the above cumulative effects are expected to be low in magnitude by 2015. Consequently, no significant cumulative effects are predicted based upon the available data and conservative assumptions made.

In addition to these effects, effects to the economy from the proposed project and the other projects might result in cumulative effects of moderate significance. Each project will provide local governments with an additional tax base with limited demand on government services and resources. Periodic demand for supplies and services will also be experienced with each project.

8.4 SUMMARY

The potential cumulative effects of construction and maintenance of the Project were assessed by considering several other projects that have a high probability of commencing during construction of the proposed Project, or that may commence sometime in the future. The Study Area boundary was used to assess the potential for additive and interactive effects of the proposed pipeline and the other projects on environmental and socio-economic features. Given the limited spatial size of the proposed project, and by paralleling the existing road allowance and implementing site-specific mitigation measures, the potential for cumulative effects is considered to be insignificant.

9.0 Monitoring and Contingency Plans

9.1 MONITORING

The primary objective of compliance and effects monitoring is to ensure mitigation measures are effectively implemented and to measure the effects of activities associated with development on environmental and socio-economic features. Ultimately, the knowledge gained from monitoring is used to avoid or minimize problems during subsequent construction projects.

Previous pipeline construction experience, and review of post-construction monitoring reports from other projects, indicates that effects from pipeline construction are for the most part, temporary. The mitigation measures to reduce and avoid effects are well known and have been shown to be effective. With this in mind, Union Gas should adhere to the following general monitoring practices:

- Trained staff should be on-site to monitor construction and should be responsible for ensuring that the mitigation and monitoring requirements within this report are executed effectively. Union Gas should implement an orientation program for inspectors and contractor staff to provide information regarding Union Gas's environmental program and commitments, as well as Safety Education measures;
- Mitigation recommendations made in this report should be incorporated into the contract specifications;
- Contact between landowners and company liaison should be maintained to ensure that the concerns of landowners are quickly addressed; and,
- An inspection of the constructed pipeline should be conducted approximately one and two years after construction to determine whether any areas require further rehabilitation.

9.1.1 Watercourse Crossing

An Environmental Inspector should be on-site during the watercourse crossings to ensure adherence to specifications and site plans. In particular, the Environmental Inspector should ensure that pre-construction preparation is complete prior to commencement of in-stream work and that the floodplain conditions are restored to preconstruction conditions. The Environmental Inspector should be responsible for monitoring weather forecasts prior to each crossing.

Follow-up inspections, one year after construction following spring run-off, should be completed to review effectiveness of the bank and slope re-vegetation program, to check bank and slope stability, and to ensure floodplain drainage has been maintained. Appropriate remediation

measures should be completed as necessary, and additional follow-up monitoring should be conducted.

9.1.2 Municipal Roads

Municipal roads affected by pipeline construction should be restored to their pre-construction condition to the satisfaction of municipal engineers. Road Superintendents should be given an opportunity to inspect any repairs or modifications. Once re-established, the crossing location of roads should be monitored following heavy rain events and a year after construction following spring runoff, to ensure no road subsidence or major rutting has occurred and that the drainage system is functioning properly.

9.1.3 Vegetation

During pre-construction clearing and construction, the Environmental Inspector should ensure that the contractor respects the limit of clearing and does not damage adjacent vegetation. The Inspector should identify, for removal, any trees that pose a potential hazard.

Establishment of vegetative cover should be monitored. Silt fencing and other protective measures should be retained in place until cover is fully established.

9.1.4 Landowner and Community Relations Program

Social effects should be monitored through a communications program. As part of this program, all residents and absentee landowners affected by construction should be notified in advance of construction activities in their area. The notification should indicate the name and contact number of Union Gas's Project Manager and should invite the resident or landowner to contact the Chief Inspector should concerns arise.

The Chief Inspector should file a report detailing time and date of any call, the nature of the concern, the corrective action taken where appropriate, and the time and date of follow-up contact. The Project Manager should establish contact with the Township of Puslinch, the City of Guelph, and the County of Wellington indicating the nature of the work to be undertaken, traffic management plans, and the size and origins of the workforce. In this manner, any traffic and security concerns will be brought directly to the attention of Union Gas's Project Manager for corrective action, and a report will be filed.

Following completion of construction, Union Gas should contact all residents along the easement to continue ongoing communications where necessary. During the first two years, particular attention should be paid to monitoring and documenting any effects associated with construction and operation of the pipeline.

9.1.5 Contaminated Sites

Efforts have been made to identify potential sites in the vicinity of the Preferred Route through a review of landfill records and contact with MOE. Through circulation of the ER, the MOE will have further opportunities to review the route in the event that other unknown areas of potential contamination exist.

Field observations by Stantec do not suggest that any contaminated lands will be encountered during construction. Union Gas has advised that their knowledge of land use in the Study Area and relationship with Study Area landowners concurs with Stantec's observations.

Regardless, the potential still exists for unknown material to be encountered during construction. If evidence of potential contamination is found, such as buried tanks, drums, oil residue, or gaseous odour, construction should cease until the source of the material is further investigated. Union Gas's Environmental Health and Safety department must be contacted to ensure proper adherence to handling of such soils. MOE must be notified by Union Gas's Environmental Health and Safety department where warranted by MOE regulations.

9.2 CONTINGENCY

Contingency planning is necessary to prevent a delayed or ineffective response to unexpected events or conditions that may occur during construction of the proposed pipeline. An essential element of contingency planning is the preparation of emergency plans and procedures that can be activated if unexpected events occur. The absence of contingency plans may result in short or long term environmental effects and possibly threaten public safety.

Unexpected events requiring contingency planning that may occur during construction include: extreme climatic events, changes to the construction schedule, and human error. Although unexpected problems are not anticipated to occur during construction, Union Gas and the appropriate contractors should be prepared to take necessary action quickly. The Environmental Inspector should identify situations where contingency plans should be implemented. The Contractors should also know when to immediately cease operations, for example in the case of watercourse siltation. All staff should be made aware of, and know how to implement contingency emergency response measures.

9.2.1 Watercourse Siltation

Even with properly installed erosion and siltation control measures, extreme runoff events could result in collapse of silt fencing, slope or trench failures and other problems which could lead to siltation of watercourses. If siltation to a watercourse occurs, construction should cease immediately until the situation is rectified. Immediate action should be taken to install temporary measures to contain the extent of erosion and siltation as quickly as possible. Temporary protection measures such as silt fencing, sand bags, riprap, logs, or planks should be utilized.

When site conditions permit, permanent protection measures should be installed on erodable surfaces including hydroseeding, erosion control matting, rip-rap, and willow staking. Additional layers of silt fencing, or a more sturdy type of base fencing, may be appropriate in erosion prone areas until vegetative cover is established.

If siltation has occurred, due to a construction related activity (*e.g.* dewatering), the activity should be halted immediately until the situation is rectified. A supply of emergency materials (*i.e.* silt fencing, rip rap, shovels *etc.*) should be available on-site. The Contractor should be fully prepared to respond quickly to siltation events.

9.2.2 Vegetation Damage

Potential for damage to vegetation situated adjacent to the Preferred Route increases during wet soil conditions. In the event of flooding and/or siltation of lands adjacent to the easement, small swales should be hand dug to direct water away from the pipeline easement. In areas where topography will not allow natural drainage, it may be necessary to use pumps to prevent prolonged standing water.

If the Contractor damages woody vegetation beyond the identified limit of clearing, the Environmental Inspector should assess the damage and recommend appropriate measures. The Contractor should be shown the damage to ensure the problem does not reoccur.

9.2.3 Construction Delays

Delays in the construction schedule may be necessary due to field conditions, work progress, or land acquisition issues. To minimize the impact of a construction delay, and if field conditions permit, equipment should be moved, and construction should resume in a more suitable location. Once field conditions permit, construction should commence or resume at problem areas.

9.2.4 Accidental Spills

During construction, an accidental spill of construction fluids may occur. Fluids may include fuels, lubricating oil and grease, and hydraulic fluids. Upon release of a hydrocarbon-based construction fluid, Union Gas should immediately determine the magnitude and extent of the spill, and rapidly take measures to contain it. Release of sediment should also be treated as a potential spill depending on the magnitude and extent. All spills should be immediately reported to the Chief Inspector, Environmental Inspector and Union Gas's environmental department. If necessary, the MOE Spills Action Center should be notified at 1-800-268-6060.

A Spills Response Plan should be developed by the Contractor, reviewed with staff, and posted in site trailers. Appropriate spill containment apparatus and absorbent materials should be available on-site, especially near water or sensitive wells. Staff should be trained in the use of spill containment equipment and materials.

9.2.5 Heritage and Archaeological

Every reasonable effort should be made to identify archaeological or heritage resources along the Preferred Route prior to construction. However, it is possible that such resources could be encountered along the route during construction. Should buried archaeological material and/or human remains be encountered during construction, construction in the vicinity should cease immediately. The Ontario Ministry of Culture, and an archaeologist licensed in the Province of Ontario, should be notified immediately. An appropriate site-specific response plan should then be employed following further investigation of the specific find.

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10.0 Conclusion

This ER describes the process to select an appropriate route for the proposed Union Gas pipeline, and identifies and addresses potential impacts associated with the construction and operation of the proposed pipeline. The alternative routes were selected based on qualitative and quantitative evaluations and were presented at a Public Information Session. Input from agencies, First Nations, stakeholders, landowners, and the public was received and used to confirm the Preferred Route selection and develop mitigation measures.

In the opinion of Stantec, the recommended comprehensive program of mitigation, restoration, inspection, monitoring, and contingency measures and addresses all of the concerns raised during the public consultation process, as well as impacts, including potential cumulative effects.

No significant adverse effects on environmental and socio-economic features are likely to occur as a result of this Union Gas project, with the implementation of the recommended mitigation and related programs. Furthermore, the mitigation measures presented are consistent with the construction of a 12-inch (323.9-millimeter) diameter pipeline.

Monitoring and contingency measures are important components of the mitigation program to ensure mitigation measures have been effective in both the short and long term. In addition, knowledge gained throughout this process can be used to better identify and prevent and/or rectify problems in the future.

The mitigation, inspection and monitoring, recommended additional studies and contingency programs outlined in **Sections 6, 7, and 9**, supported by Union Gas's construction specifications, practices and policies, should form part of the contract specifications. Pre-construction meetings and liaison between Union Gas staff and the contractor, Environmental Inspector(s) and landowners and agencies, and/or their representatives, should be conducted to ensure full understanding of responsibilities, importance of the various environmental issues and details regarding the measures proposed to address them. With the implementation of the recommended mitigation and related programs in conjunction with on-going landowner and agency communication and consultation, the adverse environmental effects of the Union Gas Limited pipeline Project – Guelph Reinforcement Phase II are not likely to be significant.

STANTEC CONSULTING LTD

David Wesenger, Project Manager

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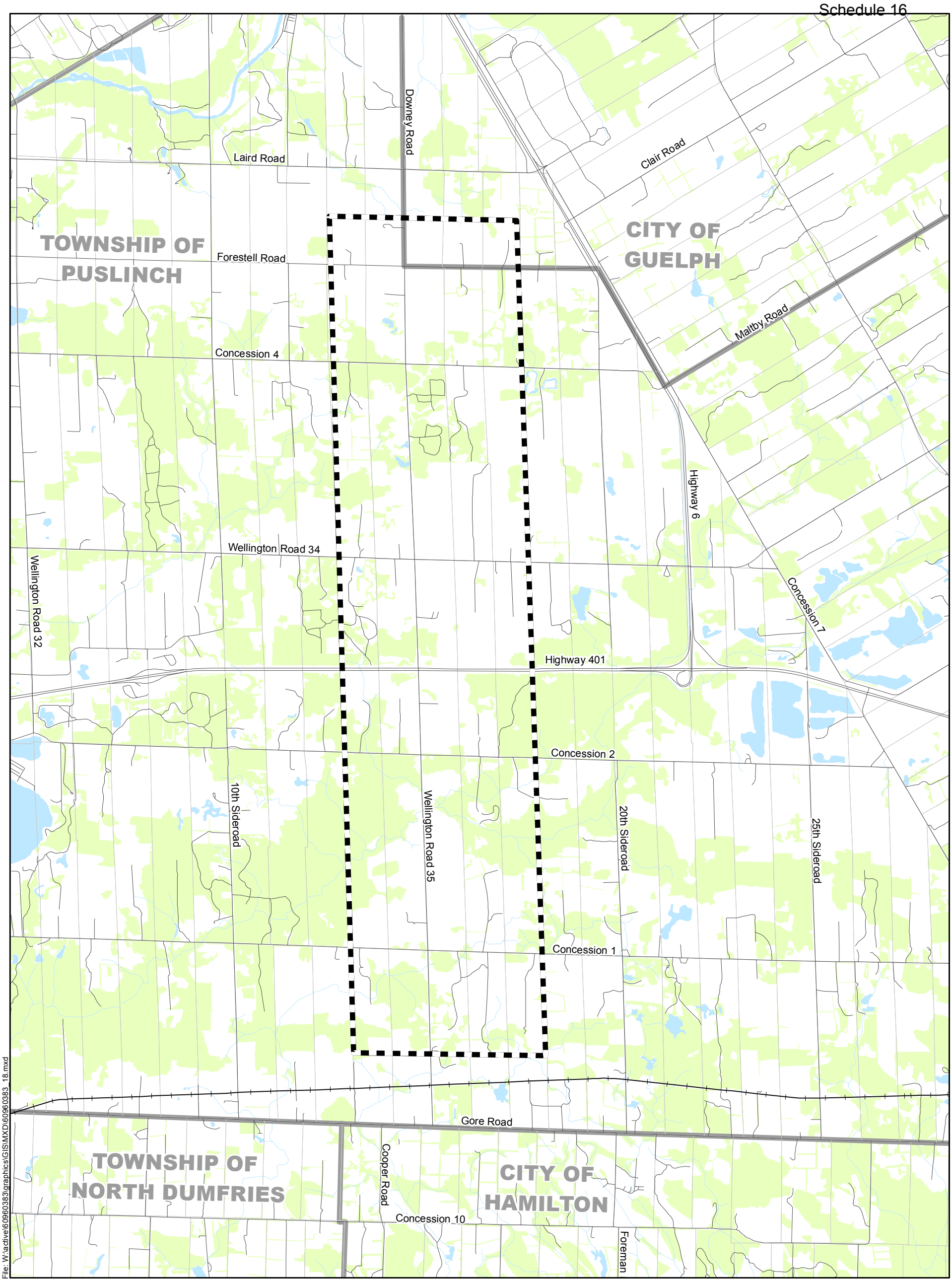
Appendix A

Report Figures



Source: LIDS, 2006; Union Gas, 2008.

Study Area
Municipal Boundary
Roads
Railway
Lots

N
W
E
S

0 250 500 750 1,000 Meters

1:40,000

Stantec

INDEX MAP OF SOUTHERN ONTARIO

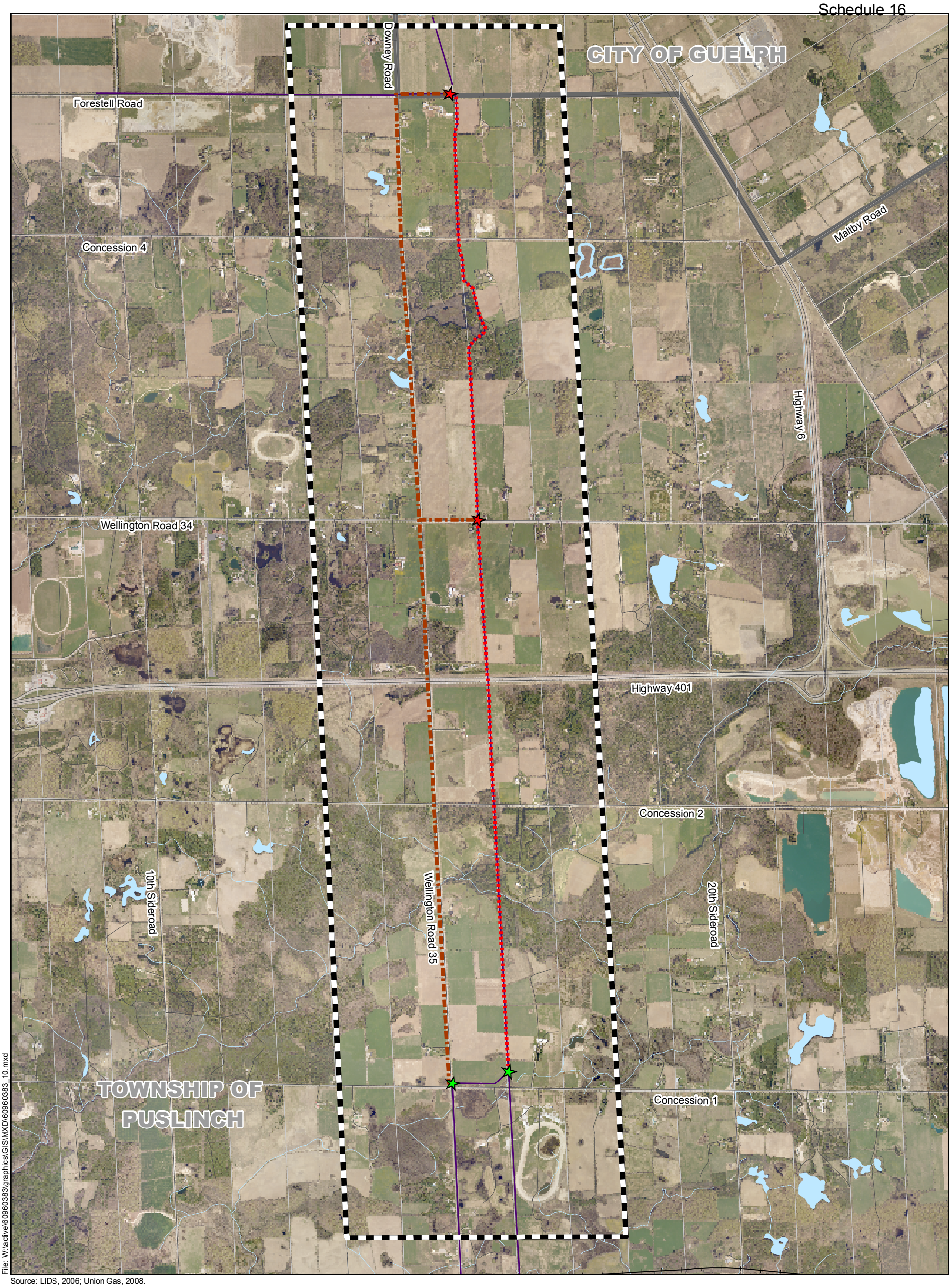
PREPARED FOR:

UNION GAS LTD.
GUELPH REINFORCEMENT PHASE II

FIGURE NO. A-1

STUDY AREA MAP

Initiated: June, 2008
Revised:



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Source: LIDS, 2006; Union Gas, 2008.

- Study Area
- Municipal Boundary
- Potential Start Point
- Potential End Point
- Cross Country Alternative Route
- Road Allowance Alternative Route
- Existing Pipelines

N, W, E, S

Stantec

0 250 500 750 1,000 Meters

1:27,500

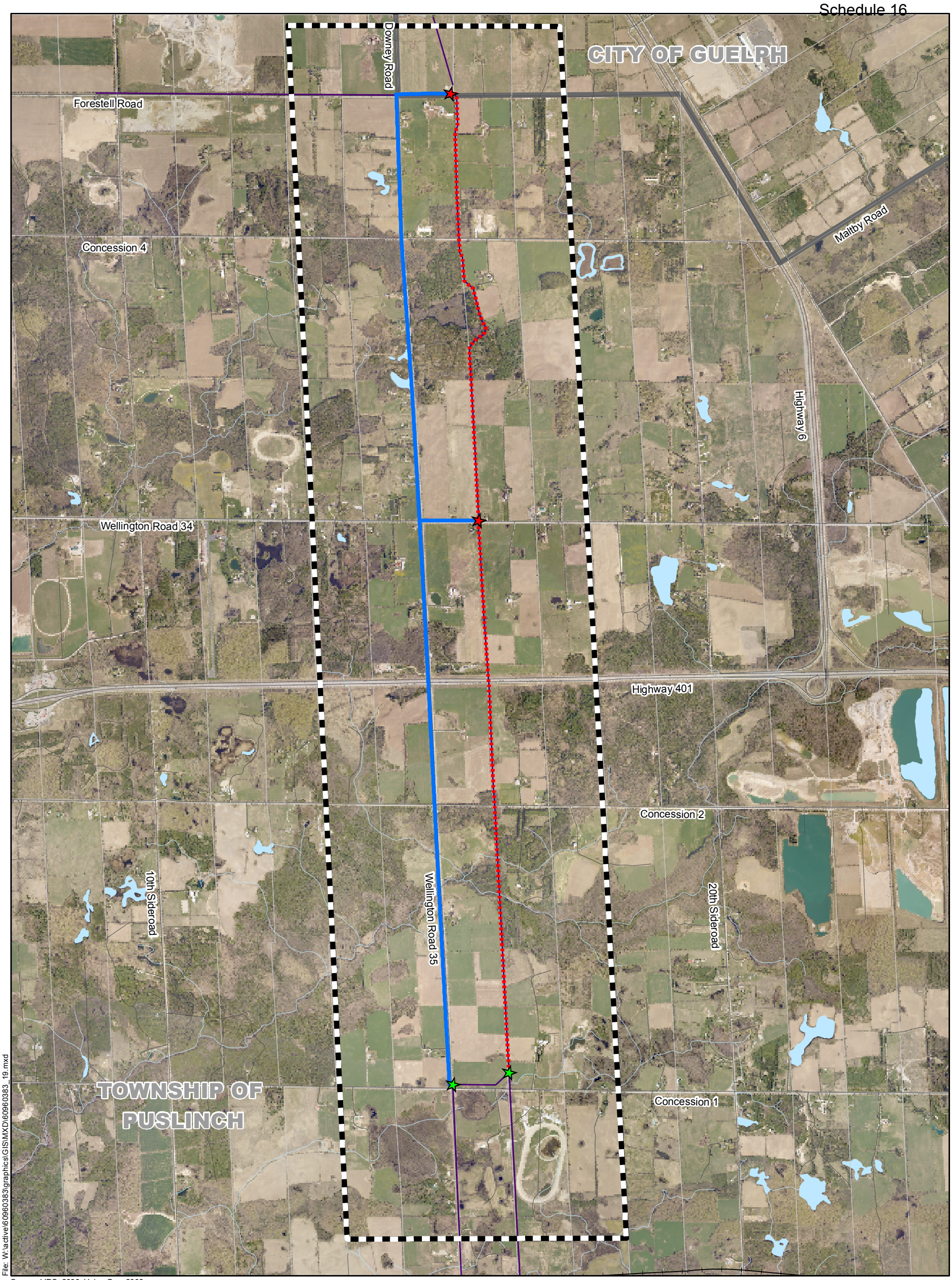
PREPARED FOR:

UNION GAS LTD.
GUELPH REINFORCEMENT PHASE II

FIGURE NO. A-2

ALTERNATIVE ROUTES

Initiated: April, 2008
Revised: July, 2008



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Source: LIDS, 2006; Union Gas, 2008.

Study Area

Municipal Boundary

Potential Start Point

Potential End Point

Alternative Route

Preliminary Preferred Route

Existing Pipelines

N W E S

Stantec

0 250 500 750 1,000 Meters

1:27,500

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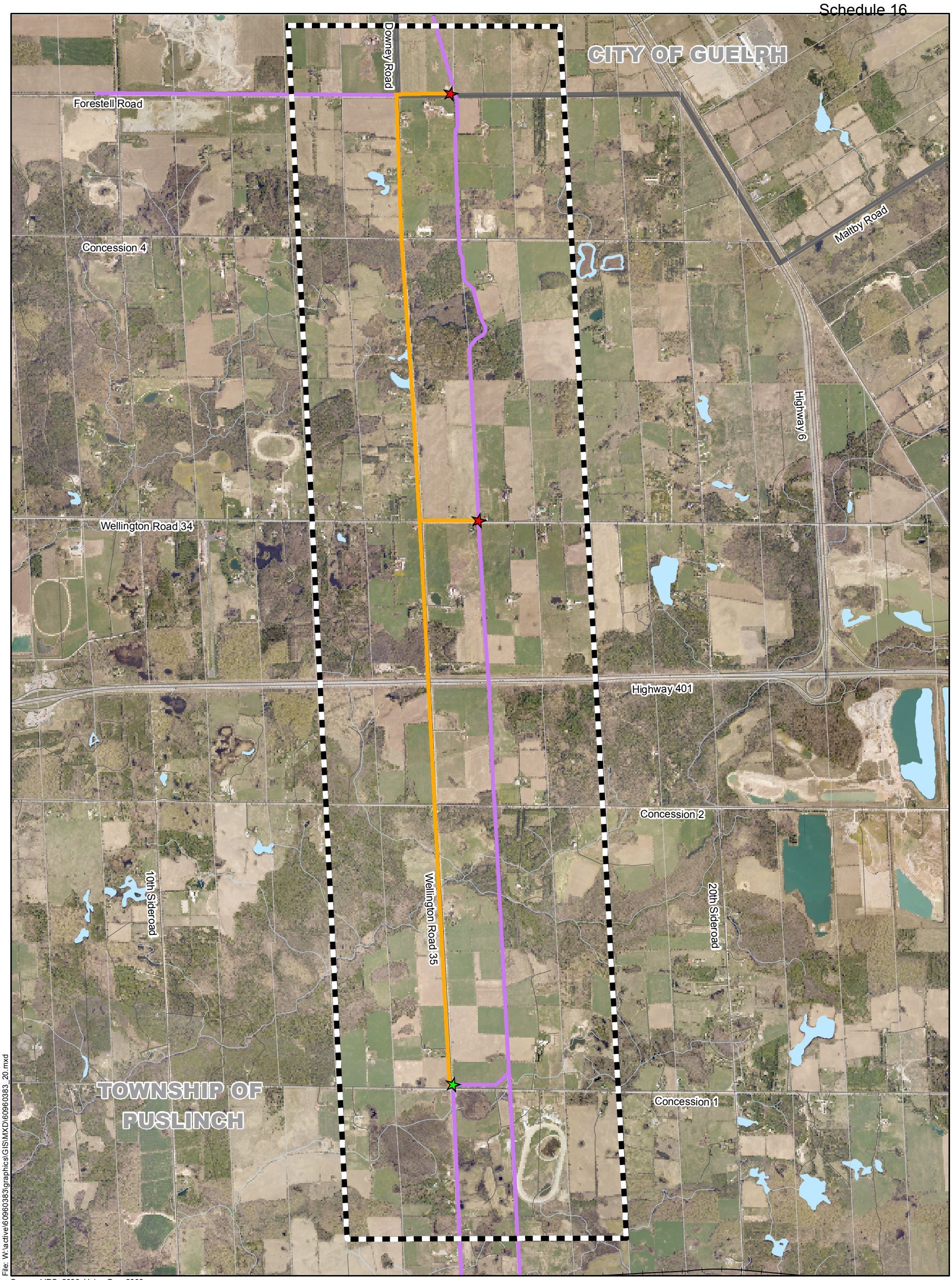
UNION GAS LTD.
GUELPH REINFORCEMENT PHASE II

FIGURE NO. A-3

PRELIMINARY PREFERRED AND ALTERNATIVE ROUTE

Initiated: April, 2008
Revised: July, 2008



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Source: LIDS, 2006; Union Gas, 2008.

Study Area
Start Point
Potential End Point
Preferred Route
Municipal Boundary
Existing Pipelines

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Stantec

0 250 500 750 1,000
Meters
1:27,500

PREPARED FOR:

UNION GAS LTD.
GUELPH REINFORCEMENT PHASE II

FIGURE NO. A-4

PREFERRED ROUTE

Initiated: April, 2008
Revised: August, 2008

Appendix B

Project Consultation

Appendix B1

Summary Stakeholder Communication

APPENDIX B1 - SUMMARY OF STAKEHOLDER COMMUNICATION

Stakeholder	Type of Correspondence	Date	Issue or Concern	Type of Correspondence	Date	Response	Report Reference
Cambridge MP	Phone Call	03/26/08	▪ Would like to be kept up to date with regards to this project			No response required	N/A
Ministry of the Environment	Phone Call	03/26/08	▪ Stated that Barbara Slatterly of the West Central Region has been forwarded the notice of commencement and Craig Newton should not be contacted			No response required	N/A
County of Wellington	Phone call	03/28/08	▪ Called to inform Stantec that there are two quarry projects proposed in the north section of the Study Area			Confirm details of quarries with Dan Eusebi of Stantec ▪ One on north side of Forestell Road, west side of County Road 35 ▪ One south of concession 4 and north of Regional Road 34, west side of County Road 35	Main Report Section 8.3.2
Township of North Dumfries	Phone Call	03/31/08	▪ Will try to get information to Stantec ASAP but cannot make the April 4, 2008 deadline			No response required	N/A
City of Hamilton ~ ESAIEG	Email	04/02/08	▪ Mr. Deiaco is no longer employed with the City of London, and Cathy Plosz is new ESAIEG coordinator ▪ Will provide comments			No response required	N/A
County of Wellington	Email	04/02/08	▪ Sections of WR 35 from WR 34 to Conc 4 has several wet/swamp sections adjacent to the road and are concerned about fragile base and further settlement or failure of the road ▪ Concerned with cleanup by Union Gas from previous project ▪ Would be concerned about traffic control during construction adjacent to WR 35	Letter	04/04/08	Sent City of Guelph Planning department Notice of Commencement	This information is incorporated in Main Report Sections 4.2.3, 5.3.1, and 6.3.7 Correspondence found in Appendix B3

APPENDIX B1 - SUMMARY OF STAKEHOLDER COMMUNICATION

Stakeholder	Type of Correspondence	Date	Issue or Concern	Type of Correspondence	Date	Response	Report Reference
			▪ Portion of the Study Area is within City of Guelph jurisdiction				
Ministry of Transportation	Email	04/02/08	▪ Stated that permits will be required when crossing HWY 401 or any land within MTO's Building & Land Use Permit control area			No response required at this time	N/A
Township of North Dumfries	Email	04/07/08	▪ Stated that there are no major projects in the Study Area			No response required	Section 8.0
Indian and Northern Affairs Canada ~ Specific Claims Branch	Letter	04/08/08	▪ Stated that no specific land claims have been submitted by a First Nation in the Study Area			No response required	This information is incorporated in Main Report Sections 4.2.4, and 6.3.5, and Appendix C2 Section 4.7
Department of Fisheries and Oceans	Email	04/10/08	▪ Stated that the Burlington office should have been sent letter	Letter	04/10/08	Sent Notice of Commencement letter to DFO-Burlington office	Correspondence found in Appendix B3
Six Nations Council	Letter	04/10/08	▪ Informed Stantec that the Study Area is within the 1701 Treaty Territory (within six miles on either side of the Grand River) ▪ Stated that they had no comments at this time but would like to be kept up to date on archaeological work that has been or will be conducted	Letter	05/08/08	Provided an update on the archaeological work being conducted by Dana Poulton and Associates	This information is incorporated in Main Report Sections 4.2.4, and 6.3.5, and Appendix C2 Section 4.7 Correspondence found in Appendix B3
Grand River Conservation Authority	Letter	04/11/08	▪ The Study Area contains several areas of concern ▪ Large portions of the Study Area are regulated by the GRCA ▪ Stated that the areas of concern should be avoided to the extent possible			No response required	This information is incorporated in Appendix C and throughout main report
Grand River Conservation Authority	Letter	04/11/08	▪ Stated that there are no major projects in the Study Area			No response required	N/A
Hamilton	Phone	04/11/08	▪ Stated that the Study Area is			No response required	N/A

APPENDIX B1 - SUMMARY OF STAKEHOLDER COMMUNICATION

Stakeholder	Type of Correspondence	Date	Issue or Concern	Type of Correspondence	Date	Response	Report Reference
Conservation Authority			not within their watershed jurisdiction therefore they have no comment on the project				
Gamsby and Mannerow Limited on behalf of Township of Puslinch	Letter	04/16/08	▪ Stated that there are no development plans within the Study Area other than the Aikensville Pit on County Road 35 ▪ Stated that Official Plan should be referenced for the location of woodlots, core green lands, and crossing of Mill Creek ▪ Stated that the Township may wish to have G.W.S. Ecological & Forestry Services Inc. comment on the environmentally sensitive natural features within the Study Area			No response required	N/A
Grand River Conservation Authority	Phone	04/17/08	▪ Stated that most information is available online ▪ If more mapping is required GRCA can be contacted			No response required	N/A
Ducks Unlimited Canada	Letter	04/21/08	▪ Stated the there are 3 wetland conservation projects within the Study Area ▪ Stated that although these areas have experienced past man-made disturbances, they still provide important habitat areas for a variety of wetland species ▪ Request that ground work should have regard for the sustainability of the wetland and its surrounding upland habitat			No response required	This information is incorporated in Appendix C and throughout main report
City of Hamilton	Email	05/01/08	Community Planning ▪ The project has been determined to have archaeological potential and Stage 1 and 2 archaeological assessments should be completed			No response required	This information is incorporated in Appendix C and throughout Main Report

Stakeholder	Type of Correspondence	Date	Issue or Concern	Type of Correspondence	Date	Response	Report Reference
			▪ Most of the Study Area is located within two Environmentally Significant Areas ~ Beverly Swamp and Hyde-Rockton-Beverly Complex ▪ The Environmental Report will have to be submitted and reviewed by the City of Hamilton, their ESAIEG coordinator and the GRCA before site alteration and development can occur ▪ 1965 Cooper Road is designated as built heritage property under the Ontario Heritage Act and any works that may affect this property may require a permit ~ this project will not affect this property Development Engineering ▪ No comments or concerns Planning West Team ▪ According to Official Plan and Zoning Schedules, Beverly Swamp ANSI will be traversed and should be observed during works				
Ministry of Municipal Affairs and Housing	Letter	05/01/08	▪ Provided information regarding, and the link to, the Provincial Policy Statement ▪ Provided information regarding and the link to the Growth Plan for the Greater Golden Horseshoe area, which the county of Wellington and City of Hamilton lie within ▪ Provided information regarding and the link to the Greenbelt Plan for the Greater Golden Horseshoe area, which the county of Wellington and City of Hamilton lie within ▪ Stated that the local Official			No response required	This information is incorporated throughout Main Report

APPENDIX B1 - SUMMARY OF STAKEHOLDER COMMUNICATION

Stakeholder	Type of Correspondence	Date	Issue or Concern	Type of Correspondence	Date	Response	Report Reference
			Plan policies regarding energy are integrated into the ER process ▪ Stated that the Study Area appears to be within the proximity of the Haldimand Tract and that Union Gas should contact the appropriate First Nations				
Ministry of Natural Resources (MNR)	Letter	06/02/08	▪ Informed Stantec of PSW, coldwater creeks, Life Science ANSI and rare species within the Study Area ▪ Stated that it may be necessary to complete site specific surveys to determine/confirm presence of rare species and/or their habitat			No response required	This information is incorporated in Appendix C and throughout Main Report
Hydro One	Letter	06/06/08	▪ Informed Stantec that Hydro One Transmission Facilities exist within the Study Area ▪ Stated that developments should not reduce line clearances, limit access to their facilities, or affect the integrity of the structure foundations ▪ If it is determined that the proposed development will affect Hydro One facilities, detailed plans must be submitted			- There are no facilities in the updated Study Area No response required	N/A
Technical Standards and Safety Authority (TSSA)	Fax	06/09/08	▪ Do not have any input at this time			No response required	N/A
Indian and Northern Affairs Canada (INAC) ~ Litagation and Management Resolution Branch	Letter	06/16/08	▪ Advised that there is active litigation within the vicinity of the Study Area			- The appropriate First Nations have been contacted in the original mailings - No response has been received to date regarding any issues	This information is incorporated in Main Report Sections 4.2.4, and 6.3.5, and Appendix C2 Section 4.7

APPENDIX B1 - SUMMARY OF STAKEHOLDER COMMUNICATION

Stakeholder	Type of Correspondence	Date	Issue or Concern	Type of Correspondence	Date	Response	Report Reference
						with the proposed project	
County of Wellington	Email	06/24/08	▪ Concern is for the proper restoration of the right of way and repair for any problems occurring a year or two after initial restoration			No response required	This information is incorporated in Main Report Sections 4.2.3, 5.3.1, and 6.3.7
Ministry of Transportation (MTO)	Letter	06/25/08	▪ No objection to either the Preferred or Alternative Route ▪ Stated that - crossing of Highway 401 must be completed by jack and bore method (directional drill) - Delivery and receiving pits must be located outside of the highway right of way - An encroachment permit will be required for the crossing operation which will require plans and profiles to be submitted to the MTO			No response required	This information is incorporated in Main Report Sections 4.2.3, 5.3.1, and 6.3.7
City of Guelph	Email	07/03/08	▪ Asked whether the project would increase capacity and/or reliability to the entire City of Guelph natural gas delivery system, or just to those properties in the vicinity of the project ▪ Was unable to attend the Public Information Session as a representative of the City of Guelph and would like to know any additional information that he should know about	Email	07/03/08	- Stated that the project is designed to increase the capacity of natural gas distribution system for the entire City of Guelph - Provided the newsletter that was distributed to all information session attendees	Correspondence found in Appendix B3
City of Guelph	Fax	07/10/08	▪ Planning staff supports any enhancements to the natural gas delivery system in the City of Guelph ▪ Schedule 3 of the City's Official Plan designates 100m on either side of Forestell Road as an 'Area of Archaeological Potential' and requires that an Archaeological assessment be			- Al Hearne was contacted to determine the extent and timelines associated with Phase III of the Hanlon Creek Business Park	This information is incorporated in Main Report Sections 4.2.3, 5.3.1, and 8.8.3

APPENDIX B1 - SUMMARY OF STAKEHOLDER COMMUNICATION

Stakeholder	Type of Correspondence	Date	Issue or Concern	Type of Correspondence	Date	Response	Report Reference
			conducted by a licensed archaeologist ▪ On Schedule 2 of the City's Official Plan the area located along the north side of Forestell Road, immediately east of Downey Road, approximately 200m in length, is designated as "Other Natural Heritage Features' and an environmental impact study must be conducted prior to development ▪ Al Hearne should be contacted to acquire details regarding Phase III of the Hanlon Creek Business Park				
Ministry of Transportation (MTO)	Telephone	09/08/08	▪ Called to ensure that Horizontal Directional Drill ("HDD") will be an acceptable method for crossing Highway 401	Telephone	09/10/08	- HDD will be an acceptable method for crossing Highway 401	This information is incorporated in Main Report Sections 4.2.3, and 5.3.1

Appendix B2

Agency Contact List, First Nations Contact List and Notice of Commencement

Title	First Name	Last Name	Agency	Title	Address1	City	Prov	Postal	Phone	Fax
Mr.	Craig	Newton	Ministry of the Environment	Environmental Planner	733 Exeter Road	London	ON	N6E 1L3	519-873-5014	
Mr.	Mark	Dunn	Ministry of the Environment	Area Supervisor, Hamilton District Office	119 King Street West 9th Floor – Ellen Fairclough Building	Hamilton	ON	L8P 4Y7	905-521-7642	
Mr.	John	Cooke	Ministry of the Environment	Supervisor, Guelph District Office	1 Stone Road West 4th Floor	Guelph	ON	N1G 4Y2	519-826-4260	519-826-4286
Mr.	Joe	de Laronde	Fisheries & Oceans Canada	Habitat Biologist	73 Meg Drive	London	ON	N6E 2V2	519-668-3502	519-668-1772
Mr.	Al	Murray	Ministry of Natural Resources	Area Supervisor, Guelph District	1 Stone Road West	Guelph	ON	N1G 4Y2	519-826-4914	519-826-4929
Ms.	Laura-Lee	Dam	Ministry of Citizenship & Immigration Ministry of Culture	Regional Adviser, West Region	30 Duke Street Suite 405	Kitchener	ON	N2H 3W5	519-571-6118	519-578-1632
Mr.	George	Potter	Ministry of Citizenship & Immigration Ministry of Tourism Ministry of Culture	Manager, West Region	30 Duke Street West Suite 405	Kitchener	ON	N2H 3W5	519-571-6050	519-578-1632
Mr.	Scott	Oliver	Ministry of Municipal Affairs & Housing	Team Leader, Community Planning & Development	659 Exeter Road 2nd Floor	London	ON	N6E 1L3	519-873-4033	519-873-4018
Mr.	Kevin	Bentley	Ministry of Transportation	Manager, Engineering Office	659 Exeter Road 4th Floor	London	ON	N6E 1L3	519-873-4373	519-873-4388
Mr.	John	Morrisey	Ministry of Transportation	Regional Development Review	659 Exeter Road 3rd Floor	London	ON	N6E 1L3	519-873-4597	519-873-4600

Title	First Name	Last Name	Agency	Title	Address1	City	Prov	Postal	Phone	Fax
				Coordinator						
Mr.	Joe	Iacobellis	Ministry of Agriculture, Food, and Rural Affairs	Area Manager, Guelph	1 Stone Road West 5th Floor	Guelph	ON	N1G 4Y2	519-826-4368	
Mr.	John	Turvey	Ministry of Agriculture, Food, and Rural Affairs	Land Use Policy Specialist	1 Stone Road West 3rd Floor	Guelph	ON	N1G 4Y2	519-826-3555	519-826-3109
Mr.	David	Cooper	Ministry of Agriculture, Food, and Rural Affairs	Manager, Environmental & Land Use	1 Stone Road West 3rd Floor	Guelph	ON	N1G 4Y2	519-826-3117	519-826-3109
Mr.	Peter	Jeffrey	Ontario Federation of Agriculture	Member Service Specialist	100 Stone Road West Suite 206	Guelph	ON	N1G 5L3	519-821-8883	519-821-8810
Mr.	Tony	Ierullo	Hydro One Networks Inc.	Manager	483 Bay Street 11th Floor – North Tower	Toronto	ON	M5G 2P5	416-345-6408	416-345-5396
Mr.	James	Faught	Federation of Ontario Naturalists / Ontario Nature	Executive Director	355 Lesmill Road	Toronto	ON	M3B 2WB	416-444-8419	416-444-4999
Mr.	Dave	McLachlin	Ducks Unlimited Canada	Senior Resource Specialist	740 Huronia Road Unit 1	Barrie	ON	L4N 6C6	705-721-4444	705-721-4999
Mr.	Paul	Emerson	Grand River Conservation Authority	CAO	400 Clyde Road	Cambridge	ON	N1R 5W6	519-621-2761	
Mr.	Scott	Wilson	County of Wellington	CAO	74 Woolwich Street	Guelph	ON	N1H 3T9	519-837-2600 x 2330	519-837-1909
Mr.	Gary	Cousins	County of Wellington	Director of Planning	74 Woolwich Street	Guelph	ON	N1H 3T9	519-837-2600 x 2190	519-837-1694
Mr.	Aldo	Salis	County of Wellington	Senior Planner	74 Woolwich Street	Guelph	ON	N1H 3T9	519-837-2600 x 2100	519-837-1694
Mr.	Mark	VanPatter	County of	Senior Planner	74 Woolwich	Guelph	ON	N1H 3T9	519-837-2600	519-837-1694

Title	First Name	Last Name	Agency	Title	Address1	City	Prov	Postal	Phone	Fax
			Wellington		Street				x 2080	
Ms.	Brenda	Law	Township of Puslinch	CAO	7404 Wellington Road #34 RR#3	Guelph	ON	N1H 6H9	519-763-1226 x 214	519-763-5846
Mr.	Jim	Howlett	Township of Puslinch	Public Works Supervisor	7404 Wellington Road #34 RR#3	Guelph	ON	N1H 6H9	519-763-1470	519-763-5846
Ms.	Colleen	Sutton	Township of Puslinch	Secretary / Planning Advisory Committee	7404 Wellington Road #34 RR#3	Guelph	ON	N1H 6H9	519-763-1226 x 215	519-763-5846
Mr.	Tim	McCabe	City of Hamilton	Planning & Economic Development Department ~ General Manager	71 Main Street West Hamilton City Hall	Hamilton	ON	L8P 4Y5		
Ms.	Brenda	Khes	City of Hamilton	Sr. Project Manager – Planning & Economic Development	77 James Street North Suite 250	Hamilton	ON	L8N 0A3	905-546-2424	905-643-7250
Mr.	Darryl	Denny	Corporation of the Township of North Dumfries	Planning & Zoning Administrator	1171 Greenfield Road RR#4	Cambridge	ON	N1R 5S5	519-621-0340	519-623-7641
Mr.	Steve	Jefferson	Corporation of the Township of North Dumfries	Planning Consultant (K Smart & Associates Ltd)	1171 Greenfield Road RR#4	Cambridge	ON	N1R 5S5	519-748-1199	
Mr.	Keith	Schiedel	Corporation of the Township of North Dumfries	Public Works Superintendent	1171 Greenfield Road RR#4	Cambridge	ON	N1R 5S5	519-621-7885	
Mr.	Tony	Horvat	Hamilton Conservation Authority	Director of Land Management	838 Mineral Springs Road PO Box 7099	Ancaster	ON	L9G 3L3	905-525-2181	905-648-4622
Ms.	Andrea	Howarth	MPP –		720 Main Street	Hamilton	ON	L8M 1K9	905-544-9644	905-544-5152

Title	First Name	Last Name	Agency	Title	Address1	City	Prov	Postal	Phone	Fax
			Hamilton Centre		East					
Ms.	Sophia	Aggelonitis	MPP – Hamilton Mountain		952 Concession Street Unit 2	Hamilton	ON	L8V 1G2	905-388-9734	905-388-7862
Mr.	Ted	Arnott	MPP – Wellington – Halton Hills		181 St. Andrew Street East 2nd Floor	Fergus	ON	N1M 1P9	519-787-5247	519-787-5249
Ms.	Liz	Sandals	MPP – Guelph		173 Woolwich Street	Guelph	ON	N1H 3V4	519-836-4190	519-836-4191
Mr.	Gary	Goodyear	MP – Cambridge		1425 Bishop Street North Unit 3	Cambridge	ON	N1R 6J9	519-624-7440	519-624-3517
Hon.	Brenda	Chamerlain	MP – Guelph		40 Cork Street East	Guelph	ON	N1H 2W8	519-837-8276	519-837-8443
Ms.	Chris	Charlton	MP – Hamilton Mountain		854 Upper James Street Unit 230B, 2nd Floor	Hamilton	ON	L9C 3A3	905-574-3331	905-574-4980
Hon.	Michael	Chong	MP – Wellington – Halton Hills		200 St. Patrick Street East, #5	Fergus	ON	N1M 1M4	519-843-7344	519-843-3760
Hon.	Michael	Chong	MP – Wellington – Halton Hills		16 Mountainview Road South, #205	Georgetown	ON	L7G 4K1	905-702-2597	905-702-2564
Ms.	Donna	Mundie	Ontario Pipeline Coordinating Committee	c/o Ministry of Agriculture, Food, and Rural Affairs	1 Stone Road West	Guelph	ON	N1G 4Y2	519-826-3120	519-826-3259
Mr.	Oscar	Alonso	Ontario Pipeline Coordinating Committee	c/o Technical Standards & Safety Authority	3300 Bloor Street West 14th Floor	Etobicoke	ON	M8X 2X4	416-734-3353	416-326-8248
Mr.	Michael	Johnson	Ontario Pipeline Coordinating Committee	c/o Ministry of Culture	400 University Avenue 4th Floor	Toronto	ON	M7A 2R9	416-314-7144	416-314-7175

Title	First Name	Last Name	Agency	Title	Address1	City	Prov	Postal	Phone	Fax
Ms.	Zora	Crnojacki	Ontario Pipeline Coordinating Committee	c/o Ontario Energy Board	2300 Yonge Street Suite 2601 PO Box 2319	Toronto	ON	M4P 1E4	416-440-8104	416-440-7656
Mr.	Doug	Peeling	Ontario Pipeline Coordinating Committee	c/o Ministry of Transportation	301 St. Paul Street 2nd Floor	St. Catharines	ON	L2R 7R4	905-704-2916	
Mr.	Carl	Slater	Ontario Pipeline Coordinating Committee	c/o Ministry of the Environment	119 King Street West 12th Floor	Hamilton	ON	L8P 4Y7	905-521-7720	
Mr.	Graham	Martin	Ontario Pipeline Coordinating Committee	c/o Ontario Realty Corporation	77 Wesley Street West 11th Floor – Ferguson Block	Toronto	ON	M7A 1N3	416-326-9792	
Ms.	Sharon	Rew	Ontario Pipeline Coordinating Committee	c/o Ministry of Natural Resources	300 Water Street 5th Floor – North Tower PO Box 7000	Peterborough	ON	K9J 8M5	705-755-1820	705-755-1971
Mr.	Usman	Ahmed	Ontario Pipeline Coordinating Committee	c/o Ministry of Municipal Affairs and Housing	777 Bay Street 14th Floor	Toronto	ON	M5G 2E5	416-585-7181	
Mr.	Simon	Deiaco	City of Hamilton/ ESAIEG	Planning and Development Division	City Hall, 71 Main St. West, 7th Floor	Hamilton	ON	L8P 4Y5	905-546-2634	905-546-4202
Mr.	Ron	Van Ooteghem	Friends of Mill Creek	Member	125 Brock Rd. South	Aberfoyle	ON	N1H 6H9	519-763-0200	519-763-0412

Stantec Consulting Ltd.
361 Southgate Drive
Guelph ON N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

March 18, 2008
File: 160960383

Agency
Address
City, Province
Postal Code

Attention: **Title. First Name Last Name, Position**

Dear Title. Last Name:

Reference: **Environmental Report Commencement**
Union Gas Limited – Guelph Reinforcement Phase II

In response to the growing demand for natural gas, Union Gas Limited ("Union Gas") is currently working on preliminary plans to expand its existing Guelph Line natural gas pipeline system.

An independent environmental consultant, Stantec Consulting Ltd. ("Stantec") has been retained by Union Gas to prepare an Environmental Report (ER), which will include a cumulative effects assessment for the proposed natural gas pipeline. The ER will accompany Union Gas's Leave-to-Construct application to the Ontario Energy Board (OEB) for the approval of the proposed facilities. Union Gas proposes to file its application with the OEB in the fall of 2008, and if approved, construction for the pipeline would begin in the summer of 2009. The study will be compliant with the OEB Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 5th Edition, May 2003.

The proposed project involves the construction of two separate sections; up to 16-inches (406.4-millimeters) in diameter of steel natural gas pipeline. The north pipeline section would commence at either the intersection of Concession 1 and County Road 35 or at an existing Union Gas station site located in Lot 16, Concession 1, Township of Puslinch and terminate at either a location where Union's pipeline crosses County Road 34 or at the existing Union Gas station located on Forestell Road, approximately 400 m east of Downey Road. The north pipeline section would be approximately 4.0 to 7.4 km in length.

The south pipeline section will commence at an existing Union Gas pipeline that travels approximately 500 m north of Safari Road, at either the intersection of Cooper's Road or Sheffield Road, and terminate at an existing Union Gas valve site just north east of the intersection of Highway 97 and Highway 52. The south pipeline section would be approximately 3.4 to 6.2 km in length.

The Study Area is located in the County of Wellington and the City of Hamilton, Ontario, and is split into two sections. The north section encompasses from approximately 300 m north of Forestell Road in the north, the division of Township of Puslinch Lots 18 and 19 in the east, the middle of Concession 1 in the south, and the division between Township of Puslinch Lots 13 and 14 in the west. The south section encompasses up to the middle of Township of North Dumfries Concession 9 in the north, the division between Township of North Dumfries Lots 15 and 16 to the east, Safari Road in the south and the division between Township of North Dumfries Lots 4 and 5 in the west.

March 18, 2008

Reference: Environmental Report Commencement
Union Gas Limited – Guelph Reinforcement Natural Gas Pipeline Project

Please refer to the attached map which identifies the location of the Study Area and the start and end points of each section of pipeline.

Stantec is presently compiling an environmental, socio-economic and archaeological inventory of the Study Area. As an agency with jurisdiction or an interest in developments in the Study Area, you are invited to provide comments, or co-ordinate comments, regarding the proposed pipeline. Specifically, Stantec is seeking information regarding planning principles or guidelines implemented by your agency that may affect routing, construction, and operation of the proposed pipeline. Stantec is also seeking background environmental and socio-economic information that may be useful in compiling an inventory of the Study Area.

Information regarding other developments in the Study Area that are proposed for development, for incorporation into the ER study as a component of a cumulative effects assessment, is also requested to be provided. Please contact us to discuss the most efficient way to obtain this information.

Your agency's response by April 4, 2008 would be appreciated.

A Public Information Session regarding the proposed pipeline project is planned to be held in May, 2008. Notice of the session will be mailed to all affected agencies and advertised in the following local newspapers; Cambridge Times, The Record, Guelph Mercury, Guelph Tribune and the Hamilton Spectator.

If you have any questions regarding the ER for this pipeline project, please do not hesitate to contact me collect at the number listed below.

Sincerely,

STANTEC CONSULTING LTD.

David P. Wesenger, B.E.S.
Senior Project Manager
Tel: (519) 836-6050
Fax: (519) 836-2493
david.wesenger@stantec.com

Attachment: Study Area Map

Title	First Name	Last Name	Agency	Division	Title	Address1	City	Pr	Postal	Phone #
Mr.	Shawn	Green	Indian & Northern Affairs Canada		Environmental Officer	25 St. Clair Avenue East – 8th Floor	Toronto	ON	M4T 1M2	416-973-5899
Mr.	Urmas	Madisso	Indian & Northern Affairs Canada	Environment & Natural Resources	Environment Officer	25 St. Clair Avenue East - 8th Floor	Toronto	ON	M4T 1M2	519-751-2528
Mr.	Sean	Darcy	Indian & Northern Affairs Canada	Litigation Portfolio Operations East	Manager	25 Eddy Street – Room 1430	Gatineau	QC	K1A 0H4	819-953-1692
Mr.	Franklin	Roy	Indian & Northern Affairs Canada	Litigation Management & Resolution Branch	Director	10 Wellington Street	Gatineau	QC	K1A 0H4	819-997-3582
Ms.	Louise	Trepanier	Indian & Northern Affairs Canada	Comprehensive Claims Branch - Claims East of Manitoba	Director	10 Wellington Street – Room 1310	Gatineau	QC	K1A 0H4	819-994-1211
Mr.	Ralph	Brant	Indian & Northern Affairs Canada	Specific Claims Branch	Director General	10 Wellington Street	Gatineau	QC	K1A 0H4	819-994-2323
Ms.	Leah	Lloyd	Indian & Northern Affairs Canada	Ontario Research Team	Claims Analyst	10 Wellington Street	Gatineau	QC	K1A 0H4	819-953-4880
Mr.	Richard	Saunders	Ontario Secretariat for Aboriginal Affairs	Land Claims & Negotiations	Special Projects Advisor	720 Bay Street - 4th Floor	Toronto	ON	M5G 2K1	416-326-4772
Mr.	Robert	Ratcliffe	Ministry of the Attorney General	Crown Law Office – Civil	Counsel	720 Bay Street - 8th Floor	Toronto	ON	M5G 2K1	416-326-4128
Ms.	Ria	Tzimas	Ministry of the Attorney General	Crown Law Office – Civil	Counsel	720 Bay Street – 8th Floor	Toronto	ON	M5G 2K1	416-326-4930
Ms.	Alison	Pilla	Ministry of Aboriginal Affairs	Policy and Relationships	Assistant Deputy Minister	720 Bay Street – 4th Floor	Toronto	ON	M5G 2K1	416-212-2302

Title	First Name	Last Name	Agency	Division	Title	Address1	City	Pr	Postal	Phone #
Mr.	Alan	Kary	Ministry of Aboriginal Affairs	Policy & Relationships	Deputy Director	720 Bay Street – 4th Floor	Toronto	ON	M5G 2K1	416-326-4017
Chief	Bryan	LaForme	Mississaugas of New Credit			2789 Mississauga Road – RR#6	Hagersville	ON	N0A 1H0	519-768-1133
Chief	William K.	Montour	Six Nations of the Grand River Territory			1695 Chiefswood Road	Ohsweken	ON	N0A 1M0	519-445-2201
Chief	Tracy	Gauthier	Mississaugas of Scugog Island First Nation			22521 Island Road	Port Perry	ON	L9L 1B6	905-985-1940
Chief	Laurie	Carr	Hiawatha First Nation			123 Paudash Road RR#2	Keene	ON	K0L 2G0	705-295-4421
Chief	Keith	Knott	Curve Lake First Nation			22 Winookeeda Road (c/o Curve Lake Post Office)	Curve Lake	ON	K0L 1R0	705-657-8045
Chief	James R.	Marsden	Alderville First Nation			RR#4 (PO Box 46)	Roseneath	ON	K0K 2X0	905-352-2011

Stantec Consulting Ltd.
361 Southgate Drive
Guelph ON N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

March 18, 2008
File: 160960383

First Nations
Address
City, Province
Postal

Attention: **Title. First Name Last Name, Position**

Dear Title. Last Name

Reference: **Environmental Report Commencement**
Union Gas Limited – Guelph Reinforcement Phase II

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An independent environmental consultant, Stantec Consulting Ltd. ("Stantec") has been retained by Union Gas to prepare an Environmental Report (ER), which will include a cumulative effects assessment, for the proposed natural gas pipeline. The ER will accompany Union Gas's Leave-to-Construct application to the Ontario Energy Board (OEB) for the approval of the proposed facilities. Union Gas proposes to file its application with the OEB in the fall of 2008, and if approved, construction for the pipeline would begin in the summer of 2009. The study will be compliant with the OEB Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 5th Edition, May 2003.

The proposed project involves the construction of two separate sections; up to 16-inches (406.4-millimeters) in diameter of steel natural gas pipeline. The north pipeline section would commence at either the intersection of Concession 1 and County Road 35 or at an existing Union Gas station site located in Lot 16, Concession 1, Township of Puslinch and terminate at either a location where Union's existing pipeline crosses County Road 34 or at the existing Union Gas station located on Forestell Road, approximately 400 m east of Downey Road. The north pipeline section would be approximately 4.0 to 7.4 km in length.

The south pipeline section will commence at an existing Union Gas pipeline that travels approximately 500 m north of Safari Road, at either the intersection of Cooper's Road or Sheffield Road, and terminate at an existing Union Gas valve site just north east of the intersection of Highway 97 and Highway 52. The south pipeline section would be approximately 3.4 to 6.2 km in length.

The Study Area is located in the County of Wellington and the City of Hamilton, Ontario, and is split into two sections. The north section encompasses from approximately 300 m north of Forestell Road in the north, the division of Township of Puslinch Lots 18 and 19 in the east, the middle of Concession 1 in the south, and the division between Township of Puslinch Lots 13 and 14 in the west. The south section encompasses up to the middle of Township of North Dumfries Concession 9 in the north, the division between Township of North Dumfries Lots 15 and 16 to the east, Safari Road in the south and the division between Township of North Dumfries Lots 4 and 5 in the west. Please refer to the attached map which identifies the location of the Study Area and the start and end points of each section of pipeline.

At this time, we invite you to provide or coordinate comments on behalf of your respective agency to assist us in the preparation of the ER. This includes providing any information that would assist in the collection of

March 18, 2008

Reference: Environmental Report Commencement
Union Gas Limited – Guelph Reinforcement Phase II

environmental and socio-economic data for the Project Study Area. Your agency's response by April 4, 2008 would be appreciated.

On behalf of Union Gas, Stantec is in the process of contacting the following agencies and First Nations:

- Indian and Northern Affairs Canada – Environmental and Natural Resources Unit
- Indian and Northern Affairs Canada – Ontario Research Team
- Indian and Northern Affairs Canada – Specific Claims Branch
- Indian and Northern Affairs Canada – Comprehensive Claims Branch
- Indian and Northern Affairs Canada – Litigation Management and Resolution Branch
- Ontario Secretariat for Aboriginal Affairs
- Ministry of the Attorney General – Crown Law Office – Civil
- All chiefs with a potential interest in the Project including:
    - Mississaugas of the New Credit
    - Six Nations of the Grand River Territory
    - Mississaugas of Scugog Island First Nation
    - Hiawartha First Nation
    - Curve Lake First Nation
    - Alderville First Nation

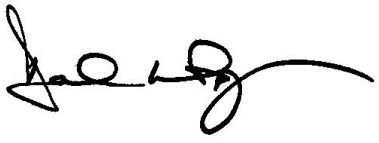
Please inform us if there are any other contacts we should be making, or if your office is aware of any land claims or claims of traditional land use within the Project Study Area.

A Public Information Session regarding the proposed pipeline project is planned to be held in May, 2008. Notice of the session will be mailed to all affected agencies and advertised in the following local newspapers; Cambridge Times, The Record, Guelph Mercury, Guelph Tribune and the Hamilton Spectator.

If you have any questions regarding the ER for this pipeline project, please do not hesitate to contact me collect at the number listed below.

Sincerely,

STANTEC CONSULTING LTD.



David Wesenger, B.E.S.
Senior Project Manager
Tel: (519) 836-6050
Fax: (519) 836-2493
david.wesenger@stantec.com

Attachment: Study Area Map

Appendix B3

Agency Correspondence

CONTACT RECORD

NAME(S):	Lindsay Thompson	**PROJECT NO.:**	**160960383**
		REPRESENTING:	Cambridge M.P.
TELEPHONE:	519-624-7440	**DATE/TIME:**	March 26, 2008/3:00pm
RE:	Notice of Commencement	**RECORDED BY:**	Melanie Adamson

☒ **CALL RECEIVED** ☐ **CALL PLACED** ☐ **MEETING**

NOTES:

- Called to request that Gary Goodyear is kept up to date with regards to the project
- Would like to know the date of the Public Information Session once it has been decided

NO.	FOLLOW-UP TASK	TIMING	BY	DONE

CONTACT RECORD

NAME(S):	Craig Newton	**PROJECT NO.:**	**160960383**
		REPRESENTING:	MOE – Southern Region
TELEPHONE:	519-873-5014	**DATE/TIME:**	March 26, 2008/3:00pm
RE:	Notice of Commencement	**RECORDED BY:**	Melanie Adamson

☒ **CALL RECEIVED** ☐ **CALL PLACED** ☐ **MEETING**

NOTES:

- Informed Stantec that he has forwarded Notice of Commencement to Barbara Slattery of the West Central Region 905-521-7864
- Stated that he should not receive anymore information regarding this project, and that it should all be directed to Barbara.

NO.	FOLLOW-UP TASK	TIMING	BY	DONE
1	Remove Craig Newton from agency contact list and update with Barbara Slaterly's contact information	ASAP		Yes

CONTACT RECORD

NAME(S):	Aldo Salis	**PROJECT NO.:**	**160960383**
		REPRESENTING:	County of Wellington Planning Department
TELEPHONE:	519-837-2600 ext.2100	**DATE/TIME:**	March 28, 2008/2:00pm
RE:	Proposed Projects	**RECORDED BY:**	Melanie Adamson

☒ **CALL RECEIVED** ☐ **CALL PLACED** ☐ **MEETING**

NOTES:

- Called to inform us that he has information regarding a few project in the Township of Puslinch

March 31, 2008/11:30am

- Melanie called him back to get information about projects and left message

April 1, 2008/4:00pm

- Aldo called back and provided information on two separate projects in the northern section of the Study Area
    - Mast/Snyder Pit ~ CBM Aggregates
        - North side of Forestell Road and west side of County Road 35
        - Licensed mineralogy gravel pit
        - Approved by OMB in 2007 and waiting approval from MNR
        - Zoned and designated
        - 200 acre site
    - Aikensville ~ Capital Paving
        - South of concession 4 and north of north of Regional Road 34, and west of County Road 35
        - 100 acre property
        - licensed pit proposed
        - licence application is before OMB and MNR
        - have applied for official plan amendment from Wellington County and Township of Puslinch

CONTACT RECORD

- informed me that Daniel Eusebi from Stantec can most likely provide more information, especially for the Aikensville pit

NO.	FOLLOW-UP TASK	TIMING	BY	DONE
1.	Speak with Dan			

CONTACT RECORD

NAME(S):	Keith Schiedel	**PROJECT NO.:**	**160960383**
	Public Works Superintendent	**REPRESENTING:**	Township of North Dumfries
TELEPHONE:	519-242-4683 (cell)	**DATE/TIME:**	March 31, 2008/2:00pm
RE:	Received Notice of Commencement	**RECORDED BY:**	Melanie Adamson

☒ **CALL RECEIVED** ☐ **CALL PLACED** ☐ **MEETING**

NOTES:

- Keith called to inquire about what kind of information we would like from them
- Stated that the chief administrator, Roger Mardue, has been asked by landowners about getting natural gas hooked up to their homes

Melanie called him back at 2:30pm

- Melanie told Keith that we are interested in knowing if there are any features that should be avoided while selecting the alternative routes, and if there are any potential cumulative effects within the Study Area
- Informed him that although the letter stated that we would like the information by April 4, 2008, that is just for preliminary information and another letter will be sent out after the alternative routes have been slected, and a new date will be set to receive information
- He will speak with the engineering and planning consultants that they use, and get back to me by April 4, 2008 with information.

NO.	FOLLOW-UP TASK	TIMING	BY	DONE

Schedule 16

Adamson, Melanie

From: Wesenger, David
Sent: Wednesday, April 02, 2008 10:23 AM
To: Adamson, Melanie
Subject: FW: Union Gas Limited - Guelph Reinforcement Phase 2

From: Chan, Alvin [mailto:achan@hamilton.ca]
Sent: Wednesday, April 02, 2008 10:23 AM
To: Wesenger, David
Cc: Holiday, Stan
Subject: Union Gas Limited - Guelph Reinforcement Phase 2

Dear Mr. Wesenger,

We recently received your request for comments regarding the Guelph Reinforcement Phase 2 for Union Gas Limited. Unfortunately, I would like to notify you that Mr. Deiaco has not been employed with the City of Hamilton in over a year, and we have also relocated from City Hall to a new location. As result, we did not receive your request in an appropriate amount of time for us to circulate the request to our respective departments and provide you with a comprehensive set of comments. As such, we would request an extension for returing comments on this development, and will provide a response as soon as possible.

On a separate note, we would request that you update your mailing list to the following:

Development Planning
City of Hamilton
77 James Street North, Suite 400
Hamilton Ontario
L8R 2K3

Alvin Chan
Planner
City of Hamilton
Planning & Economic Development Department,
Planning Division
Legislative Approvals Section
905-546-2424 ext 1334

Schedule 16

Adamson, Melanie

From: Chan, Alvin [achan@hamilton.ca]
Sent: Wednesday, April 02, 2008 12:53 PM
To: Adamson, Melanie
Cc: Holiday, Stan
Subject: RE: Union Gas Limited - Guelph Reinforcement Phase 2

Thanks Melanie, I will forward our comments to you ASAP. We realize this is preliminary, and are do a quick and dirty review to at least identify any issues for you. However our ESAIEG co-ordinator (Cathy Plosz) is on site visits today unfortunately. Hopefully she will be able to review it tommorow when she returns. Sorry for any incoveniences we may have caused on our end.

Alvin

-----Original Message-----
From: Adamson, Melanie [mailto:melanie.adamson@stantec.com]
Sent: Wednesday, April 02, 2008 10:58 AM
To: Chan, Alvin
Subject: Re: Union Gas Limited - Guelph Reinforcement Phase 2

Hello Mr. Chan,

I apologize on Stantec's behalf for not sending the correspondence to the correct person and address, I will update our contact list for future correspondence. I hope that it did not cause too much inconvenience.

At this time we are requesting preliminary information that would aid in our selection of the alternative routes. This information could include areas to avoid, or if there is a preference of where the pipeline should be aligned (i.e. within road allowance, or cross country). There will be further opportunity to comment on this project, including the alternative routes, Preliminary Preferred Route and potential Cumulative Effects.

Please note that David Wesenger is the Senior Project Manager for this project, however, your comments and questions can be sent to me, the Project Manager.

Kind Regards,
Melanie.

Melanie Adamson, B.Sc., CEPIT
Environmental Scientist
Stantec
361 Southgate Drive
Guelph ON N1G 3M5
Ph: (519) 836-6050
Fx: (519) 836-2493
melanie.adamson@stantec.com
stantec.com

The content of this email is the confidential property of Stantec and should not be copied, modified, retransmitted, or used for any purpose except with Stantec's written authorization. If you are not the intended recipient, please delete all copies and notify us immediately.

Please consider the environment before printing this email.

Schedule 16

From: Wesenger, David
Sent: Wednesday, April 02, 2008 10:23 AM
To: Adamson, Melanie
Subject: FW: Union Gas Limited - Guelph Reinforcement Phase 2

From: Chan, Alvin [mailto:achan@hamilton.ca]
Sent: Wednesday, April 02, 2008 10:23 AM
To: Wesenger, David
Cc: Holiday, Stan
Subject: Union Gas Limited - Guelph Reinforcement Phase 2

Dear Mr. Wesenger,

We recently received your request for comments regarding the Guelph Reinforcement Phase 2 for Union Gas Limited. Unfortunately, I would like to notify you that Mr. Deiaco has not been employed with the City of Hamilton in over a year, and we have also relocated from City Hall to a new location. As result, we did not receive your request in an appropriate amount of time for us to circulate the request to our respective departments and provide you with a comprehensive set of comments. As such, we would request an extension for returing comments on this development, and will provide a response as soon as possible.

On a separate note, we would request that you update your mailing list to the following:

Development Planning
City of Hamilton
77 James Street North, Suite 400
Hamilton Ontario
L8R 2K3

Alvin Chan
Planner
City of Hamilton
Planning & Economic Development Department,
Planning Division
Legislative Approvals Section
905-546-2424 ext 1334

Schedule 16

Adamson, Melanie

From: Wesenger, David
Sent: Wednesday, April 02, 2008 3:03 PM
To: Adamson, Melanie
Subject: FW: EA Union Gas Guelph Reinforcement Phase 2
Attachments: SWS0237_000.pdf

From: Rick Dale [mailto:RICKD@county.wellington.on.ca]
Sent: Wednesday, April 02, 2008 2:55 PM
To: Wesenger, David
Cc: Aldo Salis; Rob Moore
Subject: EA Union Gas Guelph Reinforcement Phase 2

David P. Wesenger File 134.4

Stantec Consulting Ltd
361 Southgate Drive
Guelph On N1G 3M5

Environmental Report Commencement
Union Gas Limited – Guelph Reinforcement Phase II

David

Further to your letter to the County of Wellington dated March 18, 2008, regarding Union Gas, Guelph Reinforcement Phase 2

The County of Wellington Roads and Engineering has the following concerns

Should the proposed route be on the existing WR 35 road allowance, the section of WR 35 from WR 34 to Concession 4 has several wet/swamp sections adjacent to the road.

There have been road failures at some of the locations in the past during construction

The County would be concerned that placing the gas line would disturb the fragile base & cause further settlement or a failure in the road

I have attached a copy of the 1971 soils report for this section prepared by Dominion Soil

Clean up

When the last section of main was installed a few years ago from the Gore to Concession one it took several years to have
Union Gas & their contractor clean up after the installation

Traffic

The County of Wellington would be concerned about traffic control during any work on or adjacent to the Wellington Road 35

Schedule 16

County/City Jurisdiction

The County/City boundary is at the south limit of the Forestell Road

The Forestell road allowance is in the City of Guelph

Rick Dale C.E.T. rcca
Construction Manager
County of Wellington
Guelph On N1H 3T9
1-519-837-2600 Ext 222
1-800-663-0750
Fax 1-519-837-8138
e-mail rickd@county.wellington.on.ca
County Web www.county.wellington.on.ca

Schedule 16

Adamson, Melanie

From: Wesenger, David
Sent: Wednesday, April 02, 2008 11:06 AM
To: Adamson, Melanie
Subject: FW: Environmental Report Commencement - Union Gas Limited - Guelph Reinforcement Phase II

From: Mazzotta, Rob (MTO) [mailto:Rob.Mazzotta@ontario.ca]
Sent: Wednesday, April 02, 2008 11:04 AM
To: Wesenger, David
Cc: Kelly, Kevin (MTO); Yeung, Richard (MTO); Roszler, Greg (MTO); Mazzotta, Rob (MTO)
Subject: Environmental Report Commencement - Union Gas Limited - Guelph Reinforcement Phase II

Dear Mr. Wesenger:

This is in response to your March 18, 2008 letter to Mr. Doug Peeling of MTO regarding the above noted. Please be advised that any associated proposed works either within / across Highway 401/Highway 8 or within MTO's Building & Land Use permit control area (per Sec. 38(2) of the Public Transportation and Highway Improvement Act) requires MTO permits prior to commencement of any construction activity. If there are any proposed works within this area we would suggest that you consult with this office prior to making formal application. Permit inquiries may be directed to Kevin Kelly, Permits officer, at 416-235-5558.

Regards,

Rob Mazzotta

Permit Officer

Ministry of Transportation Ontario
Corridor Management Section

Telephone 416.235.4389
Fax 416.235.4267

Ontario

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Stantec Consulting Ltd.
361 Southgate Drive
Guelph ON N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

April 4, 2008
File: 160960383

City of Guelph Planning Department
2 Wyndham Street N, 3rd Floor
Guelph, ON N1H 3A1

To Whom It May Concern,

Reference: Environmental Report Commencement
Union Gas Limited – Guelph Reinforcement Phase II

In response to the growing demand for natural gas, Union Gas Limited ("Union Gas") is currently working on preliminary plans to expand its existing Guelph Line natural gas pipeline system.

An independent environmental consultant, Stantec Consulting Ltd. ("Stantec") has been retained by Union Gas to prepare an Environmental Report (ER), which will include a cumulative effects assessment for the proposed natural gas pipeline. The ER will accompany Union Gas's Leave-to-Construct application to the Ontario Energy Board ("OEB") for the approval of the proposed facilities. Union Gas proposes to file its application with the OEB in the fall of 2008, and if approved, construction for the pipeline would begin in the summer of 2009. The study will be compliant with the OEB Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 5th Edition, May 2003.

The proposed project involves the construction of two separate sections; up to 16-inches (406.4-millimeters) in diameter of steel natural gas pipeline. The north pipeline section would commence at either the intersection of Concession 1 and County Road 35 or at an existing Union Gas station site located in Lot 16, Concession 1, Township of Puslinch and terminate at either a location where Union's pipeline crosses County Road 34 or at the existing Union Gas station located on Forestell Road, approximately 400 m east of Downey Road. The north pipeline section would be approximately 4.0 to 7.4 km in length.

The south pipeline section will commence at an existing Union Gas pipeline that travels approximately 500 m north of Safari Road, at either the intersection of Cooper's Road or Sheffield Road, and terminate at an existing Union Gas valve site just north east of the intersection of Highway 97 and Highway 52. The south pipeline section would be approximately 3.4 to 6.2 km in length.

The Study Area is located in the County of Wellington and the City of Hamilton, Ontario, and is split into two sections. The north section encompasses from approximately 300 m north of Forestell Road in the north, the division of Township of Puslinch Lots 18 and 19 in the east, the middle of Concession 1 in the south, and the division between Township of Puslinch Lots 13 and 14 in the west. The south section encompasses up to the middle of Township of North Dumfries Concession 9 in the north, the division between Township of North Dumfries Lots 15 and 16 to the east, Safari Road in the south and the division between Township of North Dumfries Lots 4 and 5 in the west.

Please refer to the attached map which identifies the location of the Study Area and the start and end points of each section of pipeline.

Stantec

April 4, 2008

Reference: Environmental Report Commencement
Union Gas Limited – Guelph Reinforcement Phase II

Stantec is presently compiling an environmental, socio-economic and archaeological inventory of the Study Area. As an agency with jurisdiction or an interest in developments in the Study Area, you are invited to provide comments, or co-ordinate comments, regarding the proposed pipeline. Specifically, Stantec is seeking information regarding planning principles or guidelines implemented by your agency that may affect routing, construction, and operation of the proposed pipeline. Stantec is also seeking background environmental and socio-economic information that may be useful in compiling an inventory of the Study Area.

Information regarding other developments in the Study Area that are proposed for development, for incorporation into the ER study as a component of a cumulative effects assessment, is also requested to be provided. Please contact us to discuss the most efficient way to obtain this information.

A Public Information Session regarding the proposed pipeline project is planned to be held in May, 2008. Notice of the session will be mailed to all affected agencies and advertised in the following local newspapers; Cambridge Times, The Record, Guelph Mercury, Guelph Tribune and the Hamilton Spectator.

If you have any questions regarding the ER for this pipeline project, please do not hesitate to contact me collect at the number listed below.

Sincerely,

STANTEC CONSULTING LTD.

David Wesenger
Senior Project Manager
Tel: (519) 836-6050
Fax: (519) 836-2493
david.wesenger@stantec.com

Attachment: Study Area Map

Adamson, Melanie

From: Wesenger, David
Sent: Monday, April 07, 2008 12:57 PM
To: Adamson, Melanie
Subject: Fw: File 160960383

David Wesenger
Managing Leader, Environmental Management Stantec Consulting Ltd.

(519)836-6050

----- Original Message -----
From: mail <mail@township.northdumfries.on.ca>
To: Wesenger, David
Sent: Mon Apr 07 09:59:44 2008
Subject: File 160960383

David,

Further to your letter of March 18th would you please advise Melanie Adamson that at this time we have no major projects in that area.

Regards,

Keith Schiedel, Public Works Superintendent

Township of North Dumfries

Phone (519) 621-7885 Fax (519) 623-7641

www.township.northdumfries.on.ca

Affaires indiennes et du Nord Canada
Indian and Northern Affairs Canada

www.ainc-inac.gc.ca

RECEIVED
APR 17 2008

Votre référence - Your file

APR AVR 08 2008

Notre référence - Our file

B 8260-12

David Wesenger, B.E.S.
Stantec Consulting Ltd.
361 Southgate Drive
GUELPH ON N1G 3M5

Dear Mr. Wesenger:

Re: Environmental Report Commencement
Union Gas Limited – Guelph Reinforcement Phase II

I am writing in response to your letter of March 18, 2008, addressed to Leah Lloyd inquiring as to whether there are any land claims or traditional land use within your project study area.

Please note that traditional land use claims are not eligible for acceptance under Specific Claims Policy.

We have conducted a brief search of our records and determined that no specific land claims have been submitted by a First Nation in the area of interest.

I note that you are in the process of contacting First Nations in the vicinity of the area including Mississaugas of the New Credit First Nation and Six Nations of the Grand River Territory.

For more information, you may wish to consult a "Public Information Status Report" on all claims which have been submitted to date. This information is available to the public on the Indian and Northern Affairs Canada (INAC) website and can be found at http://www.ainc-inac.gc.ca/ps/clm/pis_e.html.

It should be noted that the reports available on the INAC website are updated quarterly and therefore, you may want to check this site at regular intervals for updates. In accordance with legislative requirements, confidential information has not been disclosed.

.../2

Please rest assured that it is the policy of the Government of Canada as expressed in *Outstanding Business: A Native Claims Policy* that "in any settlement of specific native claims the government will take third party interests into account. As a general rule, the government will not accept any settlement which will lead to third parties being dispossessed."

We can only speak directly to claims filed under the Specific Claims Policy in the Province of Ontario. We cannot make any comments regarding potential or future claims, or claims filed under other departmental policies. This includes claims under Canada's Comprehensive Claims Policy or legal action by a First Nation against the Crown. I note that you will be contacting INAC's Comprehensive Claims Branch and its Litigation Management and Resolution Branch. In addition, you may wish to consult the unit responsible for Special Claims at (819) 994-6453.

To the best of our knowledge, the information we have provided you is current and up-to-date. However, this information may not be exhaustive with regard to your needs and you may wish to consider seeking information from other government and private sources (including Aboriginal groups). In addition, please note that Canada does not act as a representative for any Aboriginal group for the purpose of any claim or the purpose of consultation.

I hope this information will be of assistance to you. I trust that this satisfactorily addresses your concerns. If you wish to discuss this matter further please contact me at (819) 953-1940.

Yours sincerely,

Fred Hosking
Senior Claims Analyst
Ontario Research Team
Specific Claims Branch

Schedule 16

Adamson, Melanie

From: Wesenger, David
Sent: Thursday, April 10, 2008 10:09 AM
To: Adamson, Melanie
Subject: FW: EA Commencement Union Gas Guelph

From: deLaronde, Joe [mailto:Joe.deLaronde@dfo-mpo.gc.ca]
Sent: Thursday, April 10, 2008 10:02 AM
To: Wesenger, David
Cc: Haché, Karleen
Subject: EA Commencement Union Gas Guelph

Hi David

DFO London recieved the notification for the above noted project and commencement. Couple of things.

The project boundaries fall inside the land boundaries of our sister office, DFO-Burlington. Likely you have sent them a copy but if you haven't, please do. For your future information, London DFO office takes care of 9 Conservation Authorities:

UTRCA, MVCA, ABCA, SCRCA, KCCA, CCCA, LPRCA, LTVCA and ERCA

Burlington also has 9 CA's including:
TRCA, GRCA, HVCA, HACA, SVCA, NPCA, CVCA, GSCA and NVCA

In the future and to save time, please consider the project relative to the CA boundaries and send the appropriate office.

Regarding provincial EA's. DFO, being a Federal agency, are not bound by provincial regulation and/or timelines. Typically, EA notificaitons are recieved and filed as FYI's by the respective offices. In some instances, a letter may be issued that states something to the effect...if your project may have a chance to impact directly or indirectly fish or fish habitat, please contact the responsible CA for comment.

Thanks Dave

Joe de Laronde
A/Senior Biologist

Stantec Consulting Ltd.
361 Southgate Drive
Guelph ON N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

March 18, 2008
File: 160960383

Fisheries & Oceans Canada
3027 Harvester Road
Burlington, Ontario
L7R 4K3

Attention: **Mr. Patrick Marks, Technician**

Dear Mr. Marks:

Reference: **Environmental Report Commencement**
Union Gas Limited – Guelph Reinforcement Phase II

In response to the growing demand for natural gas, Union Gas Limited ("Union Gas") is currently working on preliminary plans to expand its existing Guelph Line natural gas pipeline system.

An independent environmental consultant, Stantec Consulting Ltd. ("Stantec") has been retained by Union Gas to prepare an Environmental Report (ER), which will include a cumulative effects assessment for the proposed natural gas pipeline. The ER will accompany Union Gas's Leave-to-Construct application to the Ontario Energy Board (OEB) for the approval of the proposed facilities. Union Gas proposes to file its application with the OEB in the fall of 2008, and if approved, construction for the pipeline would begin in the summer of 2009. The study will be compliant with the OEB Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 5th Edition, May 2003.

The proposed project involves the construction of two separate sections; up to 16-inches (406.4-millimeters) in diameter of steel natural gas pipeline. The north pipeline section would commence at either the intersection of Concession 1 and County Road 35 or at an existing Union Gas station site located in Lot 16, Concession 1, Township of Puslinch and terminate at either a location where Union's pipeline crosses County Road 34 or at the existing Union Gas station located on Forestell Road, approximately 400 m east of Downey Road. The north pipeline section would be approximately 4.0 to 7.4 km in length.

The south pipeline section will commence at an existing Union Gas pipeline that travels approximately 500 m north of Safari Road, at either the intersection of Cooper's Road or Sheffield Road, and terminate at an existing Union Gas valve site just north east of the intersection of Highway 97 and Highway 52. The south pipeline section would be approximately 3.4 to 6.2 km in length.

The Study Area is located in the County of Wellington and the City of Hamilton, Ontario, and is split into two sections. The north section encompasses from approximately 300 m north of Forestell Road in the north, the division of Township of Puslinch Lots 18 and 19 in the east, the middle of Concession 1 in the south, and the division between Township of Puslinch Lots 13 and 14 in the west. The south section encompasses up to the middle of Township of North Dumfries Concession 9 in the north, the division between Township of North Dumfries Lots 15 and 16 to the east, Safari Road in the south and the division between Township of North Dumfries Lots 4 and 5 in the west.

March 18, 2008

Reference: Environmental Report Commencement
Union Gas Limited – Guelph Reinforcement Natural Gas Pipeline Project

Please refer to the attached map which identifies the location of the Study Area and the start and end points of each section of pipeline.

Stantec is presently compiling an environmental, socio-economic and archaeological inventory of the Study Area. As an agency with jurisdiction or an interest in developments in the Study Area, you are invited to provide comments, or co-ordinate comments, regarding the proposed pipeline. Specifically, Stantec is seeking information regarding planning principles or guidelines implemented by your agency that may affect routing, construction, and operation of the proposed pipeline. Stantec is also seeking background environmental and socio-economic information that may be useful in compiling an inventory of the Study Area.

Information regarding other developments in the Study Area that are proposed for development, for incorporation into the ER study as a component of a cumulative effects assessment, is also requested to be provided. Please contact us to discuss the most efficient way to obtain this information.

Your agency's response by April 4, 2008 would be appreciated.

A Public Information Session regarding the proposed pipeline project is planned to be held in May, 2008. Notice of the session will be mailed to all affected agencies and advertised in the following local newspapers; Cambridge Times, The Record, Guelph Mercury, Guelph Tribune and the Hamilton Spectator.

If you have any questions regarding the ER for this pipeline project, please do not hesitate to contact me collect at the number listed below.

Sincerely,

STANTEC CONSULTING LTD.

David P. Wesenger, B.E.S.
Senior Project Manager
Tel: (519) 836-6050
Fax: (519) 836-2493
david.wesenger@stantec.com

Attachment: Study Area Map

SIX NATIONS COUNCIL

April 10, 2008

RECEIVED
APR 3 0 2008

David Messenger, B.E.S.
Senior Project Manager
Stantec Consulting ltd.
361 Southgate Drive
Guelph, ON N1G 3M5

Dear: Mr. Messenger

Re: Environmental Report Commencement Union Gas Limited – Guelph Reinforcement Phase II

Six Nations of the Grand River (Six Nations) has received a notice regarding the commencement of an Environmental Report for the proposed expansion of the existing Guelph Line natural gas pipeline system.

Six Nations' cultural, sustenance and other rights are recognized by the Province of Ontario by way of the 1701 Treaty of Ft. Albany. Six Nations' rights and interests in relation to lands six miles either side of the Grand River (the Grand River Tract) was also confirmed by way of treaty, through the Haldimand Proclamation of October 25, 1784. This study area is within the 1701 Treaty Territory.

At this time we have no further comments with regards to this project. Please provide any information or documentation on archaeological work that has been or will be conducted. For further information, please do not hesitate to contact Lonny Bomberry at (519) 753-0665 ext. 12. We thank Union Gas Limited for providing us notification of this project.

Respectfully,

Chief William K. Montour
Six Nations Lands and Resources Committee
SIX NATIONS OF THE GRAND RIVER

CC: Mr. Lonny Bomberry, Director: Six Nations Lands and Resources
Mr. Leroy Hill, Secretary: Confederacy Council of the Grand River
Minister Michael Bryant, Ontario Ministry of Aboriginal Affairs
Minister Chuck Strahl, Indian and Northern Affairs Canada

This letter is without prejudice to the positions that Six Nations has and may take in respect to its claims and litigation in relation to the Six Nations Tract/ Haldimand Proclamation Lands.

Grand River Conservation Authority

400 Clyde Road, P.O. Box 729
Cambridge, Ontario N1R 5W6

Telephone (519) 621-2761
Fax (519) 621-4844
Internet: http://www.grandriver.ca

April 11, 2008

RECEIVED
APR 14 2008

David P. Wesenger
Stantec Consulting Ltd.
361 Southgate Drive
Guelph, ON
N1G 3M5

Dear Mr. Wesenger;

RE: Environmental Report Commencement – Union Gas Limited – Guelph Reinforcement Phase II

Grand River Conservation Authority (GRCA) staff have now had an opportunity to review the Environmental Report (ER) Commencement Notice and the Study Area Map received by this office March 25, 2008. Information currently available at this office indicates that a number of natural heritage/ hazard features of interest are located within both study areas (please refer to the attached mapping). Construction of the pipeline within or adjacent to these features will require prior written approval from this office.

The study area for the northern section of the proposed pipeline includes: tributaries of the Speed River, Mill Creek, tributaries of Mill Creek and tributaries of Fairchild Creek. Mill Creek, its tributaries and the headwater areas of Fairchild Creek have been identified as cold water habitat. Provincially significant wetlands associated with Cranberry – Oil Well Bog Complex, Mill Creek Wetland and Fairchild Creek Headwaters Complex have been identified within the study area. Additionally, the Oil Well Bog – Little Tract and the Galt (Mill) Creek and Forest ANSI's have been identified within the study area.

The study area for the southern section of the pipeline also contains a number of significant environmental features. A significant portion of the study area has been identified as the Beverly Swamp Wetland Complex which is provincially significant wetland and a Life Science ANSI. The provincially significant Sheffield – Rockton Wetland Complex and the Fairchild Creek Headwater Complex have been identified within the study area, as well as a number of headwater tributaries of Fairchild Creek.

Large portions of the study areas are regulated pursuant of the GRCA's *Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (150/06.* GRCA's *Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation*, prohibits development in or on the following areas:

a) within 15 metres of a river or stream valleys that have depressional features associated with a river or stream, whether or not they contain a watercourse,

b) hazardous lands;

c) wetlands; or

d) other areas where development could interfere with the hydrologic function of a wetland, including areas within 120 metres of all provincially significant wetlands and wetlands greater

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For Excellence In Watershed Management

CONSERVATION ONTARIO

than or equal to 2.0 hectares in size, and areas within 30 metres of wetlands less than 2.0 hectares in size, but not including those where development has been approved pursuant to an application made under the Planning Act or other public planning or regulatory process;

And prohibits alteration to:

e) straighten, change, divert or interfere in any way with the existing channel of a river, creek, stream or watercourse or change or interfere in any way with a wetland prior to receiving written consent of the Grand River Conservation Authority.

We trust the ER will identify the significant natural heritage/hazard features discussed above and recommend avoidance of these features to the extent possible as well as any mitigation measures should they be required. The GRCA's requests a copy of the Environmental Report be circulated to our office for review and input. Please note GRCA mapping can be accessed from our website at www.grandriver.ca, which may assist with the preparation of environmental features section of your report.

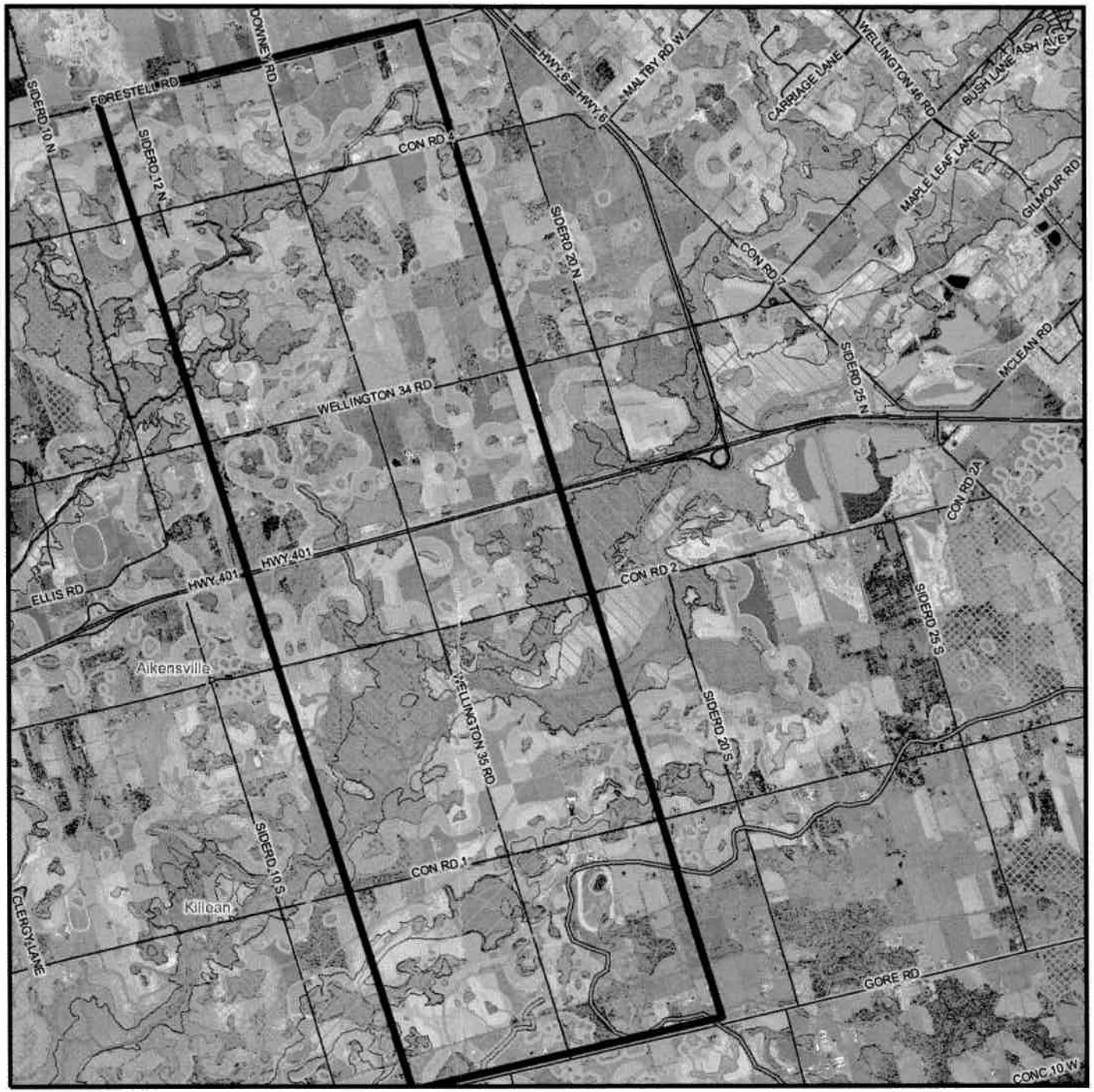
We trust these comments and mapping are of assistance. Should you have any questions or concerns please contact the undersigned.

Sincerely,

Suzanne Young
Resource Planner
Grand River Conservation Authority

Attch (1).

Schedule 16



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Grand River Conservation Authority

Map created: April 11, 2008
Prepared by: S. Young

Puslinch - Union Gas Site

LEGEND

- SUBCATCHMENTS (GRCA)
- WATERSHED BOUNDARY (GRCA)
- UTILITY LINE (NRVIS)
- ROADS-ADDRESSED (MNR)
- RAILWAY (NRVIS)
- MUNICIPAL BOUNDARY (GRCA)
- CLASSIFIED STREAMS-POLY (NRVIS)
  - COLD WATER
  - COOL WATER
  - UNKNOWN
  - WARM WATER
  - Other
- CLASSIFIED STREAMS (NRVIS)
  - COLD WATER
  - COOL WATER
  - UNKNOWN
  - WARM WATER
  - Other
- DRAINAGE-NETWORK (GRCA)
- FLOODPLAIN (GRCA)
  - ENGINEERED
  - APPROXIMATE
  - ESTIMATED
- WETLAND (GRCA)
- ANSI (NRVIS)
- SLOPE VALLEY (GRCA)
  - STEEP
  - OVERSTEEP
- SLOPE EROSION (GRCA)
  - STEEP
  - OVERSTEEP
  - TOE
- WETLAND (NRVIS)
  - PROVINCIALLY SIGNIFICANT
  - OTHER
- PARKS (GRCA)
- REGULATION LIMIT (GRCA)
- DRAINAGE-POLY (NRVIS)
- BUILT-UP (MNR)

GRCA Disclaimer

This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

The source for each data layer is shown in parentheses in the map legend. For a complete listing of sources and citations go to:

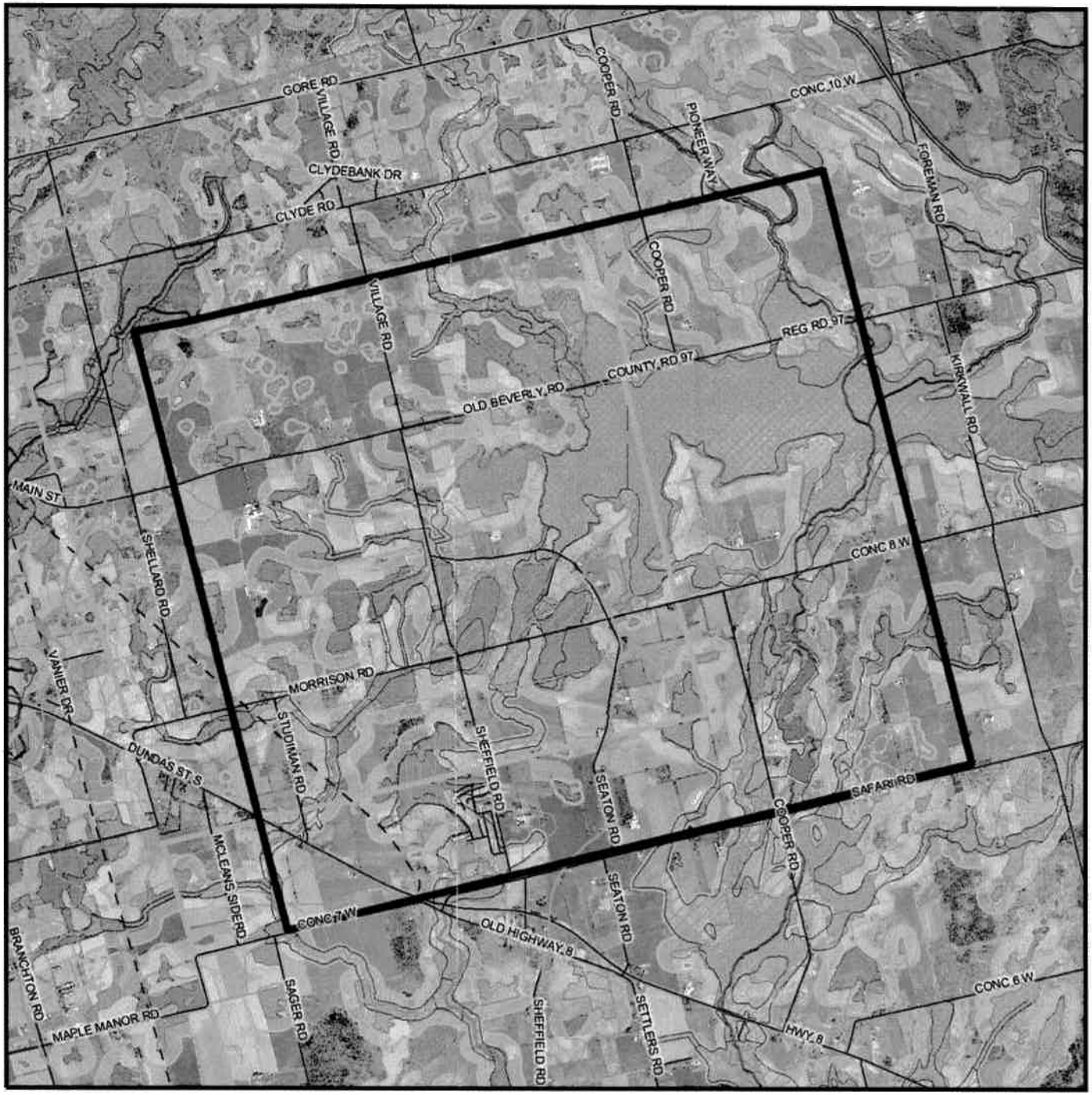
http://grims.grandriver.ca/docs/SourcesCitations1.htm

0 575 1150 1725 2300 m.

NAD 1983, UTM Zone 17 Scale 1:50,000

N

Schedule 16



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THIS MAP IS NOT TO BE USED FOR NAVIGATION

Grand River Conservation Authority
Map created: April 11, 2008
Prepared by: S. Young

Hamilton- N. Dumfries

LEGEND

- SUBCATCHMENTS (GRCA)
- WATERSHED BOUNDARY (GRCA)
- UTILITY LINE (NRVIS)
- ROADS-ADDRESSED (MNR)
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- REGULATION LIMIT (GRCA)
- DRAINAGE-POLY (NRVIS)
- BUILT-UP (MNR)

GRCA Disclaimer

This map is for illustrative purposes only. Information contained hereon is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.

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http://grims.grandriver.ca/docs/SourcesCitations1.htm

0 575 1150 1725 2300 m.

NAD 1983, UTM Zone 17 Scale 1:50,000

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CONTACT RECORD

NAME(S):	Paul Emerson	**PROJECT NO.:**	**160960383**
		REPRESENTING:	Grand River Conservation Authority
TELEPHONE:	519-621-2761	**DATE/TIME:**	April 11, 2008/10:45am
RE:	Background information	**RECORDED BY:**	Melanie Adamson

☐ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

April 11, 2008 left message

- Called to make sure that he received Notice of Commencement letter and to see what the status of our information request is

April 16, 2008

- Paul called to state that there are no cumulative effects that he knows of during the time period from 2009 to 2015

NO.	FOLLOW-UP TASK	TIMING	BY	DONE

CONTACT RECORD

NAME(S):	Tony Horvat	**PROJECT NO.:**	**160960383**
		REPRESENTING:	Hamilton Conservation Authority
TELEPHONE:	519-525-2181	**DATE/TIME:**	April 11, 2008/10:45am
RE:	Background information	**RECORDED BY:**	Melanie Adamson

☐ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

- Called to make sure that he received Notice of Commencement letter and to see what the status of our information request is
- Left message
- Tony Called back at 11:00am and transferred Melanie to Norra Jamieson of the watershed department
- Norra stated that the Study Area is not within their watershed jurisdiction and therefore they have no comment regarding the project

NO.	FOLLOW-UP TASK	TIMING	BY	DONE

Schedule 16

7404 Wellington Rd. 34, Aberfoyle
Phone: 519-763-1226
R.R. #3, Guelph, ON N1H 6H9
Fax: 519-763-5846
email: admin@twp.puslinch.on.ca

TOWNSHIP OF PUSLINCH

Fax

To:	Stantec Consulting	From:	Brenda Law, CAO/Clerk-Treasurer
Att:	David P. Wesenger	Pages:	3
Fax:	(519) 836-2493	Date:	April 16, 2008
Re:	Environmental Report Commencement Union Gas Limited Guelph Reinforcement Phase II		

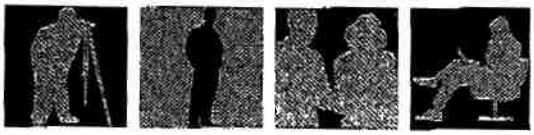
David, please find attached Bob Wheildon of Gamsby and Mannerow's comments on behalf of the Township of Puslinch with respect to the above-referenced matter.

IMPORTANT NOTE: The following material is intended for use only by the individual or entity to which it is specifically addressed above and should not be ready by, or delivered to any other person. Such material may contain privileged or confidential information, the disclosure or other use of which by other than the intended recipient may result in the breach of certain laws or the infringement of rights of third parties. If you have received this telecopy in error, please notify us immediately by calling our offices (collect if necessary) at (519) 763-1226, so that we can make appropriate arrangements for the return of this telecopy and any confirmation copy which you may received by mail, at our expense. We thank you in advance for your cooperation and assistance.

If all pages are not received, please **call Heather Krouskie (519) 763-1226.**

Schedule 16

Gamsby and Mannerow
ENGINEERS



April 10, 2008
Our File: 108-006

RECEIVED
Township of Puslinch
APR 15 2008

Township of Puslinch
RR 3, 7404 Wellington Road 34
Guelph, ON N1H 6H9

Attention: Mrs. Brenda Law, AMCT
Clerk Treasurer

Re: Environmental Report Commencement
Union Gas Limited
Guelph Reinforcement Phase II

Dear Brenda:

We have reviewed the letter from Stantec Consulting Limited dated March 18, 2008, regarding the above captioned Environmental Report.

The proposed project involves the construction of a 16 inch diameter steel natural gas pipeline. The northerly pipeline section would start at either the Concession Road #1 and County Road #35 intersection, or the Union Gas station site at lot 16 Concession 1, Township of Puslinch and run northerly along Country Road #35 to either County Road #34 or to the existing Union Gas Station located on Forestell Road.

The northerly pipeline section will cross the following Township Roads;

- Concession Road #1
- Concession Road #2
- Concession Road #4 and
- Forestell Road (City of Guelph)

If the pipeline terminates at the Union Gas Station on Forestell Road a section of the pipeline will be constructed along Forestell Road. This road we understand is under the jurisdiction of the City of Guelph and may be upgraded as part of the Hanlon Creek Businesses Park Development in the future.

The consultant should contact the City of Guelph regarding any proposed improvements in the area.

To my knowledge there is no current development plans within the study area other than the proposed Aikensville Pit on County Road #35.

The study area includes woodlots, core green lands and a crossing of Mill Creek. We do not have any information on these areas other than what is shown on the County Official Plan.

We encourage the proponents to contact the County Planning Department, Ministry of Natural Resources and Grand River Conservation Authority with respect to these environmentally sensitive areas within the proposed study area. The Township may also wish to have Mr. G. Scheifele of G.W.S. Ecological & Forestry Services Inc. comment on the environmentally sensitive natural features within the study area.

With respect to impact on Township Road, we would not anticipate any major concerns except at the pipeline crossings. The Township should request that the proponent provide detailed construction details, and road restoration details for the approval of the Township where the proposed pipeline crosses the Township's municipal roads, prior to construction of the pipeline.

We trust this brief report will assist the Township in their review of this matter.

Yours truly,

GAMSBY AND MANNEROW LIMITED
Per:

R.C. Wheildon, P.Eng.

RCW/sn

cc. Jim Howlett, Township of Puslinch
Greg Scheifele, G.W.S. Ecological & Forestry Services Inc.

Z:\108-2008\108006\Documents\Correspondence\108006 Letter_Puslinch_2008-04-09.doc

CONTACT RECORD

NAME(S):	Suzanne Young	**PROJECT NO.:**	**160960383**
		REPRESENTING:	Grand Region Conservation Authority
TELEPHONE:	519-621-2761	**DATE/TIME:**	April 17, 2008/11:30am
RE:	Natural Areas within Study Area	**RECORDED BY:**	Melanie Adamson

☐ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

April 17, 2008 left message at 11:30am

- Melanie called to try to get more specific information regarding the natural areas outlined in the letter received from the GRCA on April 11, 2008, since it was not identified during the NHIC search

  North Section

  - Cranberry – Oil Well Bog Complex (PSW)
  - Mill Creek Wetland (PSW) (Found in NHIC search)
  - Fairchild Creek Headwaters Complex (PSW)
  - Oil Well Bog – Little Tract (ANSI)
  - Galt (Mill) Creek and Forest (ANSI)

  South Section

  - Beverly Swamp Wetland Complex (PSW and Life Science ANSI)
  - Sheffiled – Rockton Wetland Complex (Provincially Significant)
  - Fairchild Creek Headwater Complex (Provincially Significant)
- Melanie also wanted to determine if there was more detailed mapping of these areas, and if the maps are available in a format other than PDF

April 18, 2008 Melanie called Suzanne at 3:00pm

- Suzanne explained how to use the mapping provided by the GRCA on their website, and explained that most of their mapping information is available. Mapping can also be purchased
  - Zoe Green ext. 2283 can be contacted if mapping is required to be purchased

Schedule 16
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APR 2 8 2008

Ducks Unlimited Canada
CANADA'S CONSERVATION COMPANY

Monday, April 21, 2008

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, ON N1G 3M5

Dear Stantec Consulting:

Re: Environmental Report Commencement
Union Gas Limited – Guelph Reinforcement Phase II

Regarding your request for comment on your notification letter of March 18, 2008, I reviewed the location of existing Ducks Unlimited Canada wetland conservation projects with respect to the location of the 2 study zones. DU has 3 wetland conservation projects that lie within these zones. These projects contain habitat that supports pairing, nesting, brood rearing and molting needs of local waterfowl and were developed to address site limitations to wetland carrying capacity in these which have been previously negatively impacted. In addition to this, DU has undertaken extensive study of many of these wetlands, particularly in the southern study zone during part of a 4 year "Mallard Ecology Study".

From this work DU knows that the area has high densities of wetlands, and although most show some type of function impairment due to man-made perturbations to their hydrology, they in fact still provide good habitat for a wide variety of wetland dependent flora, insects, amphibians, reptiles, birds and mammals. We ask that any ground work on the construction of gas transmission infrastructure have regard to the health and value of these wetlands, particularly to ensure the sustainability of the wetland and its surrounding upland habitat.

Yours Sincerely,

David McLachlin
Ontario Habitat Restoration Program Head
Ducks Unlimited Canada
(705)721-4444 x231
Fax (705)721-4999 http://www.ducks.ca/

Hamilton

Mailing Address:
City Hall, 77 James St. N. Suite 400
Hamilton, Ontario
Canada L8R 2K3
www.hamilton.ca

Planning and Economic Development Department,
Planning Division
Physical Address: 77 James Street North, Suite 400
Phone: 905-546-2424 Ext. 1334 Fax: 905-546-4202

May 1, 2008

David P. Wesenger, B.E.S.
Senior Project Manager
Stantec
361 Southgate Drive
Guelph ON N1G 3M5

Dear Miss Adamson

Re: Union Gas Limited – Guelph Reinforcement Phase II, City of Hamilton

The City of Hamilton, Planning and Economic Development Department has received a request for comments from David P. Wesenger of Stantec regarding the Union Gas Limited – Guelph Reinforcement Phase 2 proposal and has provided the following comments/concerns.

Please note that the information below are comments from the Planning Department only and do not reflect the possible comments/concerns of other City departments. Furthermore, the comments below should not be construed to be the formal position of the City's Planning Department nor that of the City of Hamilton Council.

COMMUNITY PLANNING:

Archaeology:

The project area meets 2 of the 11 criteria used by the City of Hamilton and Ministry of Culture for determining archaeological potential:

1) Within 300 metres of water or prehistoric water, or 200 metres or a secondary watercourse; and,
2) Within 100 metres of a historic transportation corridor.

The project area has been determined to be an area of archaeological potential. It is reasonable to expect that archaeological resources may be encountered during any demolition, grading, construction activities, landscaping, staging, stockpiling or other soil disturbance. Any potential owner or proponent is advised to conduct a Stage 1 and 2 archaeological assessment prior to such impacts in order to address these concerns and mitigate, through preservation or resource removal and documentation, adverse impacts to any significant archaeological resources found. Mitigation, by an Ontario-licensed archaeologist, may include the monitoring of any mechanical excavation arising from this project. If archaeological resources are identified on-site, further Stage 3 Testing and Stage 4 Mitigation may be required as determined by the Ontario Ministry of Culture. All archaeological reports shall be submitted to the City of Hamilton concurrent with their submission to the Ministry of Culture.

Should deeply buried archaeological remains be found on the property during any of the above development activities the Ontario Ministry of Culture (MCL) should be notified immediately (519.675.7742). In the event that human remains are encountered during construction, the applicant/landowner should immediately contact both MCL and the Registrar or Deputy Registrar of the Cemeteries Regulation Unit of the Ministry of Government Services (416.326.8392). (jpm 2008-04-03)

Natural Heritage:

The subject property is located within the Greenbelt Plan Natural Heritage System and Protected Countryside in the Rural Hamilton Official Plan. The study area contains Key Natural Heritage (significant woodlands, wetlands, Life Science Area of Natural and Scientific Interest) and Key Hydrologic Features (wetlands, permanent and intermittent streams, groundwater recharge areas). Greenbelt Plan policies relating to infrastructure state that:

> 4.2.2.a) "Planning, design, and construction practices shall minimize, wherever possible, the amount of the Greenbelt, and particularly the Natural Heritage System, traversed and/or occupied by such infrastructure".
>
> 4.2.2 d)"New or expanding infrastructure shall avoid Key Natural Heritage Features or Key Hydrologic Features unless need has been demonstrated and it has been established that there is no reasonable alternative."

Most of the study area is located within two Environmentally Significant Areas (Beverly Swamp ESA #17 and Hyde-Rockton-Beverly Complex ESA #22) in the Regional Official Plan. In addition, a Life Science Area of Natural and Scientific Interest (ANSI), Provincially Significant Wetlands, and rare species are found within the study area.

Site alteration and development proposed within Key Natural Heritage and Hydrologic Features requires an Environmental Impact Statement (EIS) to be completed to the satisfaction of the City of Hamilton, ESAIEG, and the Conservation Authority. Since an Environmental Report (ER) is being prepared, this would meet similar requirements as an EIS report. Therefore, the ER should be submitted to the City, ESAIEG, and Conservation Authority for their review and comment. (CP 04-03-2008)

Built Heritage:

Staff notes that the property municipally known as 1965 Cooper Road is designated built heritage property under the Ontario Heritage Act. Subsequently, any works that may affect this property may require a heritage permit; it is Staff's recommendation that the proponent/applicant contact the City's Cultural Heritage Planner, Joe Muller at 905-546-2424 Ext 1214 or jmuller@hamilton.ca to further discuss the proposal and any built heritage concerns.

DEVELOPMENT ENGINEERING: No comments or concerns

Re: Union Gas Limited – Guelph Reinforcement Phase II

PLANNING WEST TEAM:

Staff has noted that according to Official Plan and the respective Zoning Schedules, the subject lands are traversed by the Beverly Swamp ANSI which should be observed during any works.

If you have any questions or assistance from this office, please contact Alvin Chan at (905) 546-2424 ext. 1334.

Yours truly,

Raymond Lee, MCIP, RPP
Senior Project Manager
Legislative Approvals Section
Planning Division
Planning and Economic Development Department

Schedule 16

Ontario

Ministry of Municipal Affairs and Housing

Municipal Services Office - Western

659 Exeter Road, 2nd Floor
London ON N6E 1L3
Tel. (519) 873-4020
Toll Free 1-800-265-4736
Fax (519) 873-4018

Ministère des Affaires municipales et du Logement

Bureau des services aux municipalités - région de l'Ouest

659, rue Exeter, 2e étage
London ON N6E 1L3
Tél. (519) 873-4020
Sans frais 1 800 265-4736
Téléc (519) 873-4018

RECEIVED
MAY 0 2 2008

May 1, 2008

Mr. David Wesenger
Senior Project Manager
Stantec Consulting Ltd.
361 Southgate Dr.
Guelph, ON, N1G 3M5

Dear Mr. Wesenger;

Re: Environmental Report Commencement
Union Gas Limited-Guelph Reinforcement Phase II

Thank you for your recent circulation of the above-noted matter to us for our review. Sorry for the delay in getting these comments to you. We offer the following comments for your consideration.

It is understood Union Gas is currently working on preliminary plans to expand its existing Guelph Line natural gas pipeline system. The proposed project involves the construction of two separate sections. The north pipeline section would commence at either the intersection of Concession 1 and County Road 35 or at an existing Union Gas station site located in Lot 16, Concession 1, Township of Puslinch and terminate at either a location where Union's pipeline crosses County Road 34 or at the existing Union Gas station located on Forestell Road. The South pipeline will commence at an existing Union Gas pipeline that travels approximately 500 metres north of Safari Road, at either the intersection of Cooper's Road or Sheffield Road, and terminate at an existing Union Gas valve site just north east of the intersection of Highway 97 and Highway 52. The study area is located in the County of Wellington and the City of Hamilton and is split into two sections.

This office provides access to provincial services on municipal government, finance and administration, as well as land use planning and development issues covered under the *Planning Act*. Section 2 of the *Planning Act* speaks to matters of provincial interest. This section directs decision-making bodies (whether it is a council of a municipality, a local board, a planning board, a minister of the Crown and a ministry, board, commission or agency of the government, or the Ontario Municipal Board) to be consistent with the policy statements issued under Section 3 of the *Planning Act* in exercising any authority that affects a planning matter.

The current policy on land use planning matters in Ontario is the "Provincial Policy Statement 2005" (PPS). The PPS speaks to issues such as the promotion of efficient, cost-effective development and land use patterns and the proper consideration of the various resources of this province, as well as matters dealing with public health and safety. A copy of the PPS is available on our website at: **http://www.mah.gov.on.ca/Page215.aspx.**

In addition, the County of Wellington and the City of Hamilton lie within the Greater Golden Horseshoe area and is subject to the requirements of the Growth Plan for the Greater Golden Horseshoe. *The Places to Grow Act, 2005*, requires that all decisions under the *Planning Act* conform to the Growth Plan. Section 1.4 of the Growth Plan states that where there is a conflict between the Provincial Policy Statement and the Growth Plan, the Growth Plan prevails. The only exception is where the conflict is between policies relating to the natural environment or human health. In those cases, the policy that provides more protection to the natural environment or human health prevails. A copy the Growth Plan is available at: **www.pir.gov.on.ca/english/growth/index.html**.

Further, the County of Wellington and City of Hamilton have lands contained within the Protected Countryside of the Greenbelt Plan and are subject to the requirements of the Greenbelt Plan. The *Greenbelt Act, 2005*, requires municipal and other decisions under the *Planning Act* to conform to the policies of the Greenbelt Plan. You can find information and a copy of the Greenbelt Plan at **www.mah.gov.on.ca**.

The requirements of the *Planning Act* apply to applications for planning approvals and these applications include official plan amendments and zoning bylaw amendments. From our review of this particular matter, it appears that no such approvals are being sought in this case. However, this project may have implications with respect to those matters covered by the PPS and/or Growth Plan/Greenbelt Plan as noted above, and we recommend that you consider these policies in your review of this undertaking.

Environmental Study Reports that examine municipal energy requirements should promote the provision of opportunities for energy generation facilities to accommodate current and projected needs and the use of renewable energy systems and alternative energy systems, where feasible. Additionally, you should ensure that the local Official Plan policies regarding energy are integrated into the assumptions regarding the preferred solution recommended under this evaluation process.

The Ministry notes that the subject lands appear to be in proximity of the Haldimand Tract. The Ministry trusts Union Gas will give consideration to undertaking consultation with the Six Nations of the Grand River, or other First Nations in the area that you may be aware of and which may have an interest in the area.

Finally, our comments on this undertaking should not be considered as approval for any other related applications under the *Planning Act, the Places to Grow Act, Greenbelt Act, 2005* or other provincial legislation that may be required, may be related to, or may result from this project.

Please keep us on your circulation list for this project. If you have any questions or comments, please telephone me at (519) 873-4695.

Sincerely,

Dwayne Evans

Dwayne Evans
Planner, MSO-Western

c.c. Louis Bitonti, MSO-Central

Stantec Consulting Ltd.
361 Southgate Drive
Guelph ON N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

May 8, 2008
Six Nations Council
1695 Chiefswood Road
Ohsweken, ON N0A 1M0

Dear Chief William K. Montour:

Reference: Environmental Report Commencement Union Gas Limited - Guelph Reinforcement Phase II

This letter is in response to your request to be informed of the archaeological work to be conducted for the Guelph Reinforcement Phase II project. D.R. Poulton and Associates Inc. have been retained to perform a Phase I Archaeological Assessment for the entire Study Area. The findings and recommendations of this assessment will be included in the Environmental Report prepared by Stantec. Based on their findings and recommendations, further archaeological assessments will be conducted prior to the commencement of construction.

Thank you for your interest in this project and we will keep you updated on further information gathered during the archaeological assessment process.

Sincerely,

STANTEC CONSULTING LTD.

Melanie Adamson, B.Sc., CEPIT
Environmental Scientist
Tel: (519) 836-6050
Fax: (519) 836-2493
melanie.adamson@stantec.com

Schedule 16

Adamson, Melanie

From: Stone, Mike (MNR) [mike.stone@ontario.ca]
Sent: Monday, June 02, 2008 4:32 PM
To: Wesenger, David
Cc: Adamson, Melanie
Subject: Union Gas Ltd., Guelph Reinforcement Phase II

Hello David,

Further to our conversation the other day regarding Union Gas Ltd.'s Guelph Reinforcement project, the Ministry can provide the following information about the study area.

North Section
Three provincially significant wetland complexes are located within and adjacent to the study area – Cranberry – Oil Well Bog, Mill Creek, and Fairchild Creek Headwaters. Tributaries of Irish Creek, Mill Creek (cold water), Fairchild Creek and Spencer Creek (cold water) are present. The regionally significant Oil Well Bog – Little Tract life science ANSI is also present. There are records for rare species/Species at Risk for this area, including Blanding's Turtle (Threatened), Milksnake (Special Concern), Eastern Ribbonsnake (Special Concern), and Least Bittern (Threatened). There are records for Jefferson Salamander (Threatened) for the greater region. There are a number of records for rare plants from the early 1900s, including Wild Bean (S3), Harbinger of Spring (S3), Carey's Sedge (S2) and Shrubby St. Johnswort (S2). It may be necessary to complete site specific surveys to determine/confirm the presence of rare species and/or their habitat.

South Section
The provincially significant Beverly Swamp and Sheffield – Rockton Wetland Complex are located within and adjacent to the study area. Fairchild Creek (warm water at this location) runs through the study area. The provincially significant Beverly Swamp life science ANSI is also present. There are records for rare species/Species at Risk for the study area and the surrounding region. Depending on whether work proceeds in this area, and the location of these works, the Ministry will provide further details on these records.

As we discussed, I would ask that you please update your contact list so that future notices concerning the project are directed to my attention.

Regards,
Mike

Mike Stone
District Planner
Ministry of Natural Resources
Guelph District

ENVIRONMENTAL REVIEW

Project Name	Guelph Reinforcement Phase II		
Date	03/18/2008	HO No.	10096
Name	David P. Wesenger David.wesenger@stantec.com	Municipality	Township of Puslinch
Tel. No.	(519) 836-6050	Intersection	North & South Sections
Company	Stantec Consulting Ltd.	Land Use	Pipeline facility

In our initial review, we have confirmed that Hydro One Transmission Facilities are located within your study area.

Please allow appropriate lead-time in your project schedule in the event that relocation or modifications of our facilities are required, or an outage is needed that may not be readily available.

Potential impacts on Distribution facilities are usually of a lesser degree and these will be managed through our field offices. See attached.

In planning, please note that developments should not reduce line clearances and limit access to our facilities at any time. Any construction activities must maintain the electrical clearance from the transmission line conductors as specified in the Ontario Health and Safety Act for the respective voltages.

The integrity of the structure foundations must be maintained at all times, with no disturbance of the earth around the poles, guy wires and tower footings. There must not be any grading, excavating, filling or other civil work close to the structures.

Note that existing rights of ways may have provisions for future lines or already contain secondary land uses (i.e. pipelines, water mains, parking, etc). Please take this into consideration in your planning.

Once details are known and it is established that your development will affect Hydro One facilities including the rights of way, please submit plans that detail your development and the affected Hydro Facilities to:

Kent Taylor, Hydro One Real Estate Management
185 Clegg Road, Markham L6G 1B7
Phone: (905) 946-6230, Fax: (905) 946-6287
kent.taylor@hydroone.com

Please note that the proponent will be responsible for costs associated with modification or relocation of Hydro One facilities, as well as any added costs that may be incurred due to increase efforts to maintain our facilities.

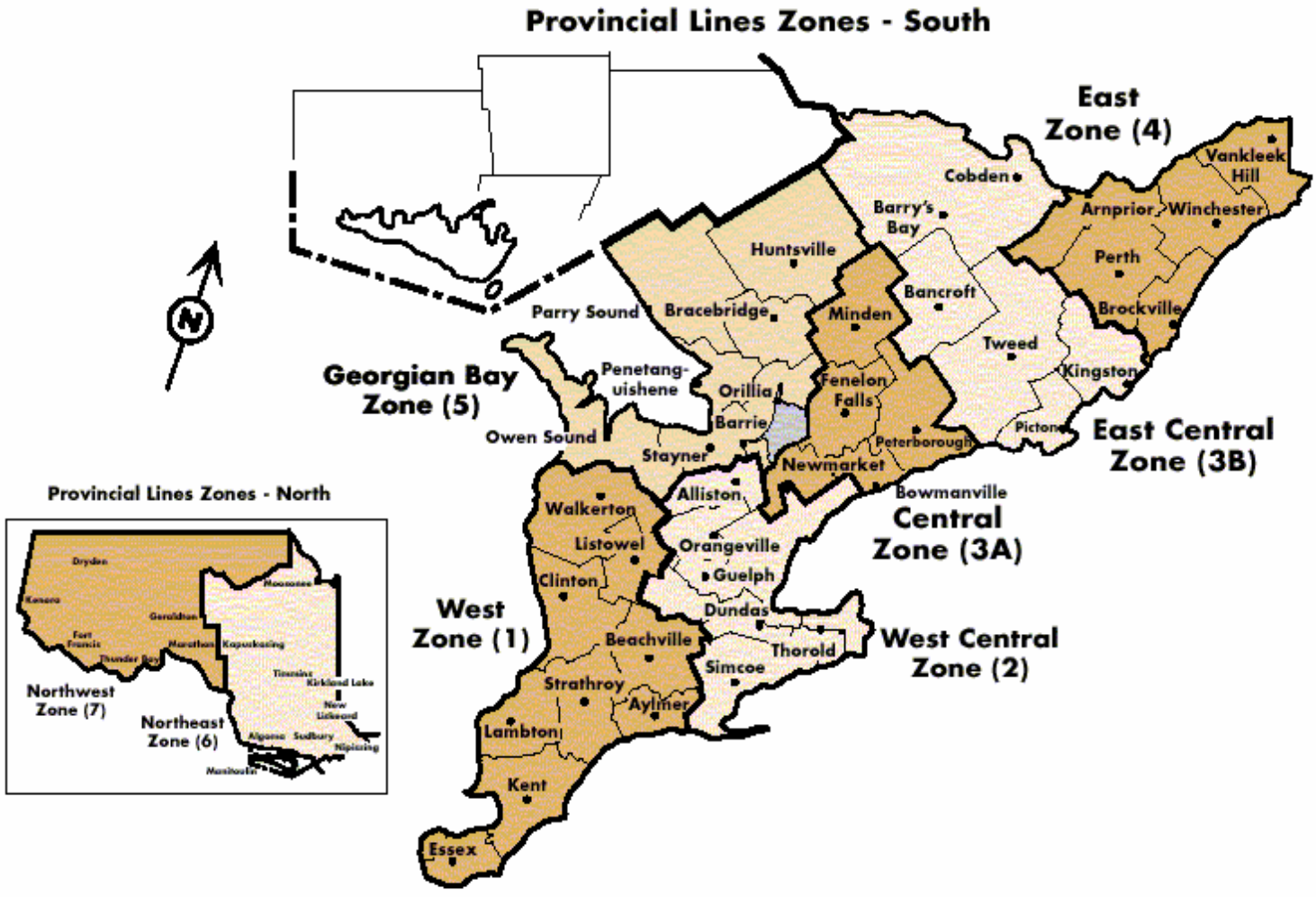
Please be advised that this is only a preliminary assessment based on current information. Upon receipt of more detailed plans Hydro One Networks Inc. will provide additional comments.

If you have questions or concerns regarding specific clearances or Hydro One right of way situations, please feel free to contact:

Charles S. Esendal, P.Eng., MBA
Transmission Lines Sustainment
Hydro One Networks, Inc.
483 Bay Street, TCT15, North Tower
Toronto, Ontario,M5G 2P5
Phone: (416) 345-5931
charles.esendal@HydroOne.com

Hydro One Initial Contact List

Zone #	Zone Name	Telephone #	Fax #	E-mail
1	West	800-957-7756 X 3252	519-423-6971	zone1scheduling@HydroOne.com
2	West Central	905-627-6050	905-627-6059	WestCentralZoneScheduling@HydroOne.com
3A	Central	888-871-3514 x 3341	705-743-9890	zone3ascheduling@HydroOne.com
3B	East Central	866-646-4619	613-967-3582	eastcentralzonescheduling@hydroone.com
4	East	866-288-8874 or 613-267-2154	613-267-7248	EastZoneScheduling@HydroOne.com
5	Georgian Bay	888-238-2398 and press 2	705-727-4803	zone5scheduling@HydroOne.com
6	Northeast	888-835-9444 x 309	705-566-8093	zone6scheduling@HydroOne.com
7	Northeast	807-346-3823	800-932-6171	northwestzonescheduling@hydroone.com



Schedule 16

TECHNICAL STANDARDS & SAFETY AUTHORITY
14th Floor, Central Tower
3300 Bloor Street West
Etobicoke, Ontario
Canada M8X 2X4

FAX

DATE:
June 9, 2008

PAGES: 2 Including COVER SHEET

TO: ***David Wessenger***

Fax: 519 836 2493

Re: Guelph Reinforcement II

FROM: Oscar Alonso

TEL NO: 416 734 3353

FAX NO: 416 231 7525

Hi David:

Please find attached a copy of an e-mail that I tried to send to you.

Have you changed your e-mail address?

Oscar Alonso

NOTICE: This communication is intended to be received only by the individual or entity to whom or to which it is addressed and contains information that is privileged, confidential and subject to copyright. Any unauthorized use, copying, review of disclosure is prohibited. Please notify the sender immediately if you have received this communication in error (by calling collect, if necessary) so that we can arrange for its return at our expense. Thank you for your assistance and cooperation.

Schedule 16

Oscar Alonso /TSSA
06/06/2008 02:03 PM

To david.wessenger@stantec.com
cc
bcc
Subject Union Gas Ltd. Guelph Reinforcement II. Your File 160960383

Thanks David for the information regarding this project. We don't have input at this time and we don't plan to attend the public Information session.

Regards,

Oscar Alonso
Fuels Safety Engineer
Tel.: 416 734 3353
e-mail: oalonso@tssa.org

Technical Standards & Safety Authority -- "Putting Public Safety First"
website: www.tssa.org
toll-free: 1-877-682-8772

Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

RECEIVED
JUN 7 6 2008
JUN 1 5 2008

Your file Votre référence

Our file Notre référence

David Wesenger
Senior Project Manager
Stantec Consulting Ltd.
361 Southgate Drive
GUELPH, ONTARIO N1G 3M5

Dear Mr. Wesenger:

Re: Environmental Report Commencement
Union Gas Limited – Guelph Reinforcement Phase II

I am writing in response to your letter of March 18, 2008, addressed to Franklin Roy inquiring about any claims that may affect the subject property. I regret that we were unable to respond earlier.

We can advise that our inventory includes active litigation in the vicinity of this property. It is entitled: *Six Nations of the Grand River Band of Indians v. Attorney General for Canada and Her Majesty the Queen in Right of Ontario, Ontario Superior Court of Justice, filed in Brantford, court reference number 406/95.*

I am unable to comment with respect to the possible effect of this claim as the case has not yet been adjudicated and any statement regarding the outcome of the litigation would be speculative at this point. It is recommended that you consult legal counsel as to the effect this action could have on the lands you are concerned with.

If you are interested in further details about the claim, a copy of the pleadings can be obtained from the Court for a fee; please contact the appropriate Court Registry Office and make reference to the court file number listed above.

.../2

We cannot make any comments regarding claims filed under other departmental policies. For information on any claims you should also contact Fred Hosking of the Specific Claims Branch at (819) 953-1940 to inquire about any Specific Claims, and Guy Morin of the Comprehensive Claims Branch at (819) 956-0325 to inquire about any current Comprehensive Claims.

If you have any further questions please do not hesitate to contact me at (819) 994-1947.

Sincerely,

Marc-André Millaire
Litigation Team Leader
Litigation Portfolio Operations East
Litigation Management and Resolution Branch

DISCLAIMER: In this Disclaimer, "Canada" means Her Majesty the Queen in right of Canada and the Minister of Indian Affairs and Northern Development and their servants and agents. Canada does not warrant or assume any legal liability or responsibility for the accuracy, completeness, or usefulness of any data or information disclosed with this correspondence or for any actions in reliance upon such data or information or on any statement contained in this correspondence. Data and information is based on information in departmental records and is disclosed for convenience of reference only. Canada does not act as a representative for any Aboriginal group for the purpose of any claim. Information from other government sources and private sources (including Aboriginal groups) should be sought, to ensure that the information you have is accurate and complete.

RECEIVED

Schedule 16

Ministry of Transportation

Engineering Office
Planning and Design Section
Southwestern Region

659 Exeter Road
London, Ontario N6E 1L3
Telephone: (519) 873-4550
Facsimile: (519) 873-4600

Ministère des Transports

Bureau du génie
Section de planification et de conception
Région du Sud-Ouest

659, chemin Exeter
London (Ontario) N6E 1L3
Téléphone: (519) 873-4550
Télécopieur: (519) 873-4600

Ontario

June 23, 2008

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario
N1G 3M5

Attn: David Wesenger

RE: Union Gas Limited Pipeline Project
Guelph Reinforcement Phase II

We are in receipt of your letter of June 2 regarding this pipeline system expansion. The ministry has no objection or concerns with either the Preferred or Alternative Routes shown on the map attached to your letter.

The crossing of Highway 401 must be accomplished by jack and bore method, as no open cutting of the highway will be permitted. The delivery and receiving pits for this operation must be located outside the highway right of way.

An encroachment permit will be required for the crossing operation. Prior to issuing a permit the ministry will require plans and profiles of the plant crossing for our review and approval.

Please keep us informed of your progress with this project. If you have any questions please contact this office.

Sincerely,

Ian Smyth
Regional Development Review Coordinator
Planning and Design Section
Southwestern Region, London

c. K. Boudreau - London Operational Services
G. Mahabir – Planning and Design

Schedule 16

Adamson, Melanie

From: Wesenger, David
Sent: Tuesday, June 24, 2008 12:55 PM
To: Adamson, Melanie
Subject: Fw: Union Gas Pipeline Project - Guelph Reinforcement Phase ll

David Wesenger
Managing Leader, Environmental Management
Stantec Consulting Ltd.

(519)836-6050

From: Gord Ough
To: Wesenger, David
Sent: Tue Jun 24 10:38:46 2008
Subject: Union Gas Pipeline Project - Guelph Reinforcement Phase ll

David

I will not be able to attend the PIS in Flamborough this Thursday, however my concern as always, relates to the guarantee of a proper restoration of the right of way and a guarantee that will result in timing follow up to repair problems a year or two after the initial restoration.

Thank you for your consideration.

Respectfully

Gord Ough P. Eng.
County Engineer

Schedule 16

Adamson, Melanie

From: Wesenger, David
Sent: Thursday, July 03, 2008 10:58 AM
To: Greg.Atkinson@guelph.ca
Cc: Doug Schmidt
Subject: RE: Union Gas Pipeline Project
Attachments: 60960383_NL_2008-09-26.pdf

Greg,

Thank you for your email regarding the Union Gas Guelph Reinforcement Project - Phase II. The need for this pipeline is to increase the capacity of the natural gas distribution system for the entire City of Guelph rather than making natural gas available to residents in the immediate vicinity of the proposed pipeline.

I have attached a copy of a Newsletter that was distributed to all Information Session attendees. If you have any further question please do not hesitate to contact me by phone or email.

Kind regards,

Dave

David Wesenger
Managing Leader, Environmental Management
Stantec
361 Southgate Drive
Guelph ON N1G 3M5
Ph: (519)836-6050
Fx: (519)836-2493
david.wesenger@stantec.com
stantec.com

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Please consider the environment before printing this email.

From: Greg.Atkinson@guelph.ca [mailto:Greg.Atkinson@guelph.ca]
Sent: Thursday, July 03, 2008 9:44 AM
To: Wesenger, David
Subject: Union Gas Pipeline Project

Hi David,

I am currently preparing comments with respect to the Union Gas pipeline project on behalf of the City of Guelph planning department and would like to know if the intent of the project to increase the capacity (and/or reliability) of the entire City of Guelph natural gas delivery system or to make natural gas available to those properties within the vicinity of the proposed pipeline?

Unfortunately I was unable to attend the public information session. If possible, I would greatly appreciate any additional information related to this project that you are able to pass along.

Schedule 16

Thank you,

Greg Atkinson | Policy Planner
Planning | **Community Design and Development Services**
City of Guelph

T 519-837-5616 x 2521 | F 519-837-5640
E greg.atkinson@guelph.ca

guelph.ca

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Schedule 16

CITY OF Guelph
Making a Difference

July 10, 2008

David P. Wesenger
Senior Project Manager
Stantec Consulting
361 Southgate Drive
Guelph, ON N1H 3A1

Dear Mr. Wesenger:

RE: Comments on Union Gas Pipeline Project (Guelph Reinforcement Phase II)

Thank you for providing the City with an opportunity to review the information relating to the environmental report being prepared by Stantec Consulting on behalf of Union Gas. While only a small portion of the preliminary preferred route is located within the City's boundaries (i.e. approximately 330 metres of land along Forestell Road immediately east of Downey Road) the following comments should be considered in the preparation of the environmental report.

The City of Guelph, in consultation with the Ministry of Public Infrastructure Renewal, has recently finalized its Local Growth Management Strategy (LGMS), which was adopted by City Council on June 23, 2008. The LGMS, which the City has prepared in response to the Provincial Growth Plan, sets out a population target for the City of Guelph of 169,000 persons by the year 2031 and recommends that an additional 31,000 jobs are required to support this population growth.

The LGMS also recommends that population and employment growth be accommodated within the existing corporate boundaries of the City of Guelph. As such, planning staff supports any enhancements to the natural gas delivery system in the City of Guelph.

It should be noted that Schedule 3 of the City's Official Plan designates 100m on either side of Forestell Road as an 'Area of Archaeological Potential'. The Official Plan contains policies (Sections 3.5.9 and 3.5.10) and requirements for development within areas of archaeological potential, which require that an archaeological assessment be prepared by a licensed archaeologist. The designation of Forestell Road as an area of archaeological potential is based on criteria specified in the City's Archaeological Master Plan.

It should also be noted that a narrow strip of land located along the north side of Forestell Road (immediately east of Downey Road), approximately 200 metres in length, is identified as 'Other Natural Heritage Features' on Schedule 2 of the City's

City Hall
59 Carden St
Guelph, ON
Canada
N1H 3A1

T 519-822-1260
TTY 519-826-9771

guelph.ca

Schedule 16

Official Plan. Official Plan policy 7.13.6 permits development in this area only where an environmental impact study has been completed, as required by Section 6.3 of the Plan, and that it has been demonstrated that no negative impacts will occur on the natural features or the ecological functions which may be associated with the area. An environmental impact study is therefore required for this area.

Lastly, the property north of Forestell Road and east of Downey Road is part of Phase III of the Hanlon Creek Business Park which is currently in the draft plan of subdivision approval process. For additional information about the business park and the status of approvals please contact Al Hearne, Senior Development Planner at 519-837-5616 ext. 2362.

Sincerely,

Marion Plaunt
Manager of Policy Planning and Urban Design

Community Design and Development Services
T 519-837-5616 x 2426
F 519-837-5640
E marion.plaunt@guelph.ca

C Jim Riddell, Director of Community Design and Development Services
Peter Cartwright, General Manager of Economic Development and Tourism
Al Hearne, Senior Development Planner
Rick Henry, City Engineer

File # ENV-25

CONTACT RECORD

NAME(S):	Ian Smyth	**PROJECT NO.:**	**160960383**
		REPRESENTING:	MTO
TELEPHONE:	519-873-4550	**DATE/TIME:**	September 8, 2008/4:15
RE:	Highway 401 crossing method	**RECORDED BY:**	Melanie Adamson

☐ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

Melanie called and left a message on September 8, 2008

- Melanie called to clarify what is meant by Jack and Bore method of road crossing when relating to Highway 401, and how it differs from Horizontal Direction Drill ("HDD")

Melanie called on September 10, 2008 to follow up

- There is a difference between Jack and Bore and HDD, but HDD is an acceptable method for crossing Highway 401

NO.	FOLLOW-UP TASK	TIMING	BY	DONE

Appendix B4

Public Information Session Notifications and Newsletters

Stantec Consulting Ltd.
361 Southgate Drive
Guelph ON N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

June 2, 2008
File: 160960383

Company Name
Address
City Province Postal Code

Dear

Reference: Invitation to Public Information Session
Union Gas Limited Pipeline Project – Guelph Reinforcement Phase II

In response to the growing demand for natural gas, Union Gas Limited ("Union Gas") is currently working on preliminary plans to expand its existing Guelph Line natural gas pipeline system.

An independent environmental consultant, Stantec Consulting Ltd. ("Stantec") has been retained by Union Gas to prepare an Environmental Report ("ER"), which will include a cumulative effects assessment for the proposed natural gas pipeline. The ER will accompany Union Gas's Leave-to-Construct application to the Ontario Energy Board ("OEB") for the approval of the proposed facilities. Union Gas proposes to file its application with the OEB in the fall of 2008, and if approved, construction for the pipeline would begin in the summer of 2009. The study will be compliant with the OEB Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 5th Edition, May 2003.

Since our previous correspondence, dated March 18, 2008, Union Gas has redefined the scope of the project and has removed the south section of the original proposal from further review. Stantec, as a result has focused its review to the north section and at this time Stantec has selected a Preliminary Preferred Route.

The Preliminary Preferred Route commences at the intersection of Concession 1 and County Road 35 in the Township of Puslinch and will either terminate at Regional Road 34 where the pipeline intersects the road or at the existing Union Gas station located on Forestell Road, approximately 400 m east of Downey Road. The pipeline would either be approximately 4.0 km or 7.4 km in length.

Please refer to the attached map which identifies the location of the Study Area and the Preliminary Preferred Route.

Stantec is presently compiling an environmental, socio-economic, and archaeological inventory of the Study Area. As an agency with jurisdiction or an interest in developments in the Study Area, you are invited to provide comments, or co-ordinate comments, regarding the Preliminary Preferred Route.

Your agency's response by July 11, 2008 would be appreciated.

To learn more about the project and to provide input to the planning process, we invite you to attend an upcoming Public Information Session hosted by Stantec. Input received at the Public Information Session will be used to help develop or confirm route selection, and site specific protection or mitigation measures. Representatives from Union Gas will also be available at the Public Information Session to answer your questions.

Stantec

Schedule 16

June 2, 2008

Reference: Invitation to Public Information Session
Union Gas Limited Pipeline Project – Guelph Reinforcement Phase II

Details regarding the Public Information Session are as follows:

Valens Community Hall
1818 Valens Road
Flamborough, Ontario
Thursday, June 26, 2008
6:30pm – 9:00pm

We hope that you will attend the Public Information Session. If you or a representative are not able to join us, or if you have any questions regarding the ER for this pipeline project, please do not hesitate to contact me.

Sincerely,

STANTEC CONSULTING LTD.

David P. Wesenger, B.E.S.
Senior Project Manager
Tel: (519) 836-6050
Fax: (519) 836-2493
david.wesenger@stantec.com

Attachment: Study Area Map

Stantec Consulting Ltd.
361 Southgate Drive
Guelph ON N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

June 2, 2008
File: 160960383

Agency Name
Address
City Province
Postal Code

Dear

Reference: Invitation to Public Information Session
Union Gas Limited Pipeline Project – Guelph Reinforcement Phase II

In response to the growing demand for natural gas, Union Gas Limited ("Union Gas") is currently working on preliminary plans to expand its existing Guelph Line natural gas pipeline system.

An independent environmental consultant, Stantec Consulting Ltd. ("Stantec") has been retained by Union Gas to prepare an Environmental Report ("ER"), which will include a cumulative effects assessment, for the proposed natural gas pipeline. The ER will accompany Union Gas's Leave-to-Construct application to the Ontario Energy Board ("OEB") for the approval of the proposed facilities. Union Gas proposes to file its application with the OEB in the fall of 2008, and if approved, construction for the pipeline would begin in the summer of 2009. The study will be compliant with the OEB Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 5th Edition, May 2003.

Since our previous correspondence, dated March 18, 2008, Union Gas has redefined the scope of the project and has removed the south section of the original proposal from further review. Stantec, as a result has focused its review to the north section and at this time Stantec has selected a Preliminary Preferred Route.

The Preliminary Preferred Route commences at the intersection of Concession 1 and County Road 35 in the Township of Puslinch and will either terminate at Regional Road 34 where the pipeline intersects the road or at the existing Union Gas station located on Forestell Road, approximately 400 m east of Downey Road. The pipeline would either be approximately 4.0 km or 7.4 km in length.

Please refer to the attached map which identifies the location of the Study Area and the Preliminary Preferred Route.

At this time, we invite you to provide or coordinate comments on behalf of your respective agency to assist us in the preparation of the ER. This includes providing any information regarding the Preliminary Preferred Route. Your agency's response by July 11, 2008 would be appreciated.

To learn more about the project and to provide input to the planning process, we invite you to attend an upcoming Public Information Session hosted by Stantec. Input received at the Public Information Session will be used to help develop or confirm route selection, and site specific protection or mitigation measures. Representatives from Union Gas will also be available at the Public Information Session to answer your questions.

June 2, 2008

Reference: Invitation to Public Information Session
Union Gas Limited Pipeline Project – Guelph Reinforcement Phase II

Details regarding the Public Information Session are as follows:

Valens Community Hall
1818 Valens Road
Flamborough, Ontario
Thursday, June 26, 2008
6:30pm – 9:00pm

On behalf of Union Gas, Stantec is in the process of inviting the following agencies and First Nations to this Public Information Session:

- Indian and Northern Affairs Canada – Environmental and Natural Resources Unit
- Indian and Northern Affairs Canada – Ontario Research Team
- Indian and Northern Affairs Canada – Specific Claims Branch
- Indian and Northern Affairs Canada – Comprehensive Claims Branch
- Indian and Northern Affairs Canada – Litigation Management and Resolution Branch
- Ontario Secretariat for Aboriginal Affairs
- Ministry of the Attorney General – Crown Law Office – Civil
- All chiefs with a potential interest in the Project including:
    - Mississaugas of the New Credit
    - Six Nations of the Grand River Territory
    - Mississaugas of Scugog Island First Nation
    - Hiawartha First Nation
    - Curve Lake First Nation
    - Alderville First Nation

Please inform us if there are any other parties that we should invite to this Public Information Session.

If you have any questions regarding the ER for this pipeline project, please do not hesitate to contact me at the number listed below.

Sincerely,

STANTEC CONSULTING LTD.

David Wesenger, B.E.S.
Senior Project Manager
Tel: (519) 836-6050
Fax: (519) 836-2493
david.wesenger@stantec.com

Attachment: Study Area Map

uniongas
A Spectra Energy Company

June 5, 2008

«First_Name»
«Last_Name»
«Address_Line_1»
«City»

Dear «Salutation»

Reference: Invitation to Public Information Session
Union Gas Limited Pipeline Project – Guelph Reinforcement Phase II

In response to the growing demand for natural gas, Union Gas Limited ("Union Gas") is currently working on preliminary plans to expand its existing Guelph Line natural gas pipeline system.

An independent consultant, Stantec Consulting Ltd. ("Stantec"), has been retained by Union Gas to prepare an Environmental Report ("ER") for the proposed natural gas pipeline. The ER will accompany Union Gas's Leave-to-Construct application to the Ontario Energy Board ("OEB") for the approval of the proposed facilities. Union Gas proposes to file its application with the OEB in the fall of 2008, and if approved, construction for the pipeline would begin in the summer of 2009. The study will be compliant with the OEB Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 5th Edition, May 2003.

The proposed project involves the construction of a 12 inch (323.9-millimeter) diameter steel natural gas pipeline. After gathering information from agencies regarding sensitive features within the Study Area, and reviewing the Alternative Routes in the field, a Preliminary Preferred Route has been selected by Stantec. The Preliminary Preferred Route commences at the intersection of Concession 1 and County Road 35 in the Township of Puslinch and will either terminate at Regional Road 34 where the pipeline intersects the road or at the existing Union Gas station located on Forestell Road, approximately 400 m east of Downey Road. The pipeline would be approximately 4.0 km or 7.4 km in length.

Please refer to the attached map which identifies the location of the Study Area and the Preliminary Preferred Route.

This pipeline may be built adjacent to or opposite from property owned or rented by you. To learn more about the project and to provide input to the planning process, we invite you to attend an upcoming Public Information Session hosted by Stantec. Input received at the Public Information Session will be used to help develop or confirm route selection, and site specific protection or mitigation measures. Representatives from Union Gas will also be available at the Public Information Session to answer your questions.

Details regarding the Public Information Session are as follows:

Valens Community Hall
1818 Valens Road
Flamborough, Ontario
Thursday, June 26, 2008
6:30pm – 9:00pm

We hope that you will attend the Public Information Session as public input is an integral part of the ER process. If you or a representative are not able to join us, or if you have any questions regarding the ER for this pipeline project, please do not hesitate to contact the project team.

David Wesenger, Senior Project Manager, Stantec Consulting Ltd.
Call collect Tel: (519) 836-6050, or Fax: (519) 836-2493, or email at david.wesenger@stantec.com

Doug Schmidt, Principal Environmental Planner, Union Gas Ltd.
1-800-265-5230 or email at dschmidt@uniongas.com

If you are a tenant of this property it would also be appreciated if this correspondence could be shared with the landowner.

Sincerely,

Merv Weishar, SR/WA
Senior Lands Agent, Lands Department
1-800-571-8446/ (519) 436-4600 Ext 2644
Cell (519)635-1669 / Fax (519) 436-5353
mweishar@uniongas.com

Attachment: Study Area Map

NOTICE OF PUBLIC INFORMATION SESSION

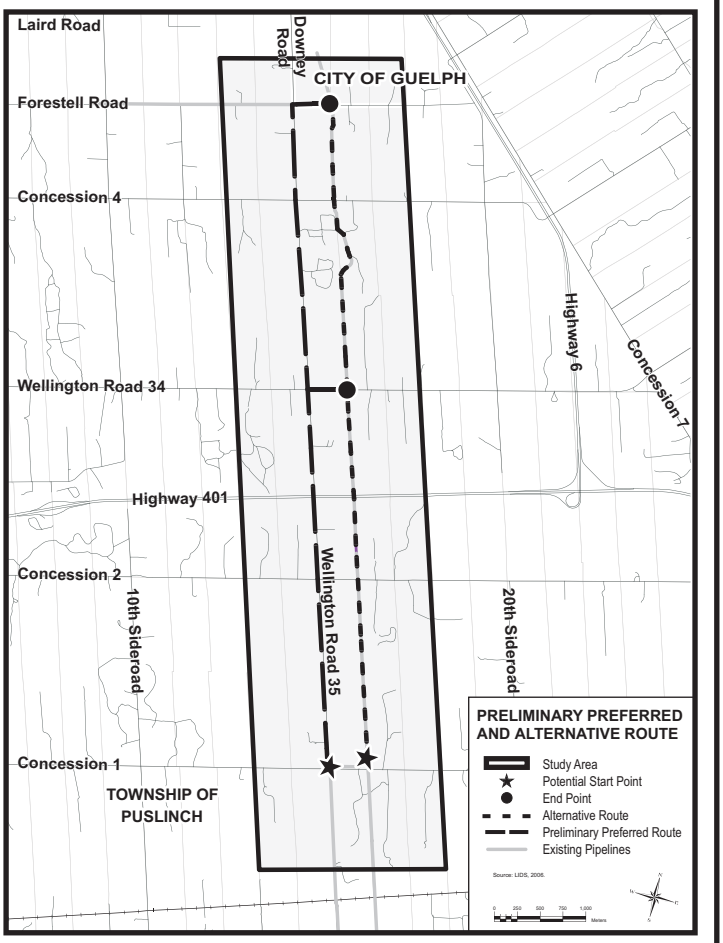
Union Gas Limited Pipeline Project - Guelph Reinforcement Phase II

In response to the growing demand for natural gas, Union Gas Limited ("Union Gas") is currently working on preliminary plans to expand its existing Guelph Line natural gas pipeline system.

To assist with the environmental and planning aspects of the Project, Union Gas has retained Stantec Consulting Ltd. ("Stantec") to prepare an Environmental Report ("ER"). The ER is being completed as required under the Ontario Energy Board's "Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (May 2003)."

The proposed project involves the construction of a 12 inch (323.9-millimeter) diameter steel natural gas pipeline. After gathering information from agencies regarding sensitive features within the Study Area, and reviewing the Alternative Routes in the field, a Preliminary Preferred Route has been selected by Stantec. The Preliminary Preferred Route commences at the intersection of Concession 1 and County Road 35 in the Township of Puslinch and will end at either Regional Road 34 where the pipeline intersects the road or at the existing Union Gas station located on Forestell Road, approximately 400 metres east of Downey Road. Depending on the end point, the pipeline would be approximately 4.0 km or 7.4 km in length.

Please refer to the attached map which identifies the location of the Study Area and the Preliminary Preferred Route.



Stantec is hosting a Public Information Session to provide those interested in the project an opportunity to review the project and provide input to the planning process. The Public Information Session will be held at the following location:

Valens Community Hall
1818 Valens Road
Flamborough, Ontario
Thursday, June 26, 2008
6:30pm - 9:00pm

At this Public Information Session, representatives from Stantec and Union Gas will be available to explain the project and answer questions regarding the route selection process, construction procedures, and mitigation measures.

Input received from the Public Information Session will be used to confirm the alignment of the Preliminary Preferred Route and help develop site-specific protection and mitigation measures.

Anyone having interest in this project is encouraged to submit questions or comments to:

David Wesenger
Project Manager
Stantec Consulting Ltd.
381 Southgate Dr.
Guelph, Ontario, N1G 3M5
519-836-6050, Collect
david.wesenger@stantec.com

Doug Schmidt
Principal Environmental Planner
Union Gas Limited
50 Keil Drive North
Chatham, Ontario, N7M 5M1
1-800-265-5230
dschmidt@uniongas.com

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Union Gas Limited

Guelph Reinforcement Phase II Pipeline Project

Information Newsletter - June 26, 2008

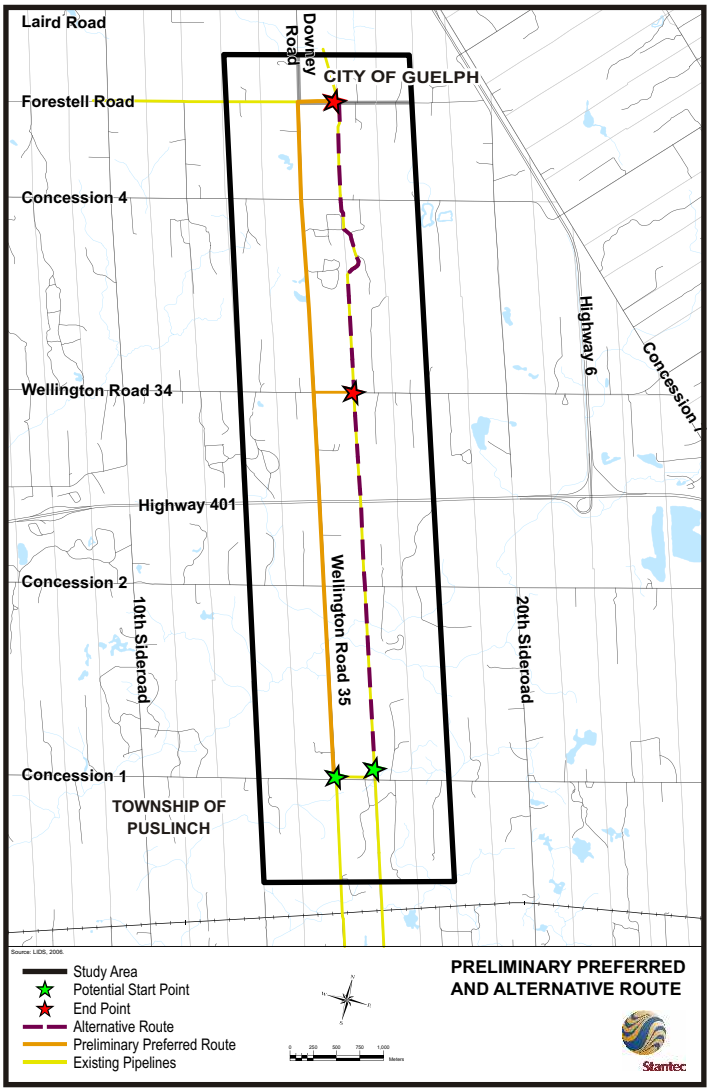
THE PROJECT

Union Gas Limited ("Union Gas") is an integrated member of the Community that operates a number of natural gas pipelines in Ontario.

As our population grows, natural gas continues to provide a safe and reliable source of energy for our homes. Businesses also rely on natural gas as an economic and reliable fuel for their operation. In order to help meet a growing demand for natural gas services, Union Gas Ltd. ("Union Gas") is currently working on preliminary plans to expand its existing Guelph Line natural gas pipeline system.

The proposed project involves the construction of a 12 inch (323.9-millimeter) diameter steel natural gas pipeline. After gathering information from agencies regarding sensitive features within the Study Area, and reviewing the Alternative Routes in the field, a Preliminary Preferred Route has been selected by Stantec. The Preliminary Preferred Route commences at the intersection of Concession 1 and County Road 35 in the Township of Puslinch and will either terminate at Regional Road 34 where the pipeline intersects the road or at the existing Union Gas station located on Forestell Road, approximately 400 m east of Downey Road. The pipeline would be approximately 4.0 km or 7.4 km in length.

Stantec Consulting Ltd. ("Stantec"), an independent environmental consultant, has been retained by Union Gas to complete an Environmental Report ("ER"). At this time Stantec has identified a Preliminary Preferred Route and one alternative route.



THE PUBLIC INFORMATION SESSION

The purpose of this Public Information Session is to provide an opportunity for stakeholders, Union Gas and Stantec to discuss the proposed Preliminary Preferred Route and the alternative route, construction procedures, and mitigation measures used during the construction of the pipeline that will be outlined in the ER. The input gained from the Public Information Session will assist in the determination of a Preferred Route at a later point in time. Stantec's ER will be part of an application by Union Gas to the OEB expected in the fall of 2008. The OEB is the body that regulates the energy sector in Ontario and whose review and approval is required before this pipeline project can proceed.

THE ER PROCESS

The OEB sets out guidelines for completing an ER in the document entitled Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines (2003). The ER process is a study designed to:

Collect natural environmental, socio-economic, and archaeological information as it pertains to the Study Area.

Consult with directly affected landowners, stakeholders, and the public to ensure awareness of the project and to address issues.

Consult with all relevant provincial and municipal agencies and First Nations for information and comments.

Use the above information (along with consultation with the public and regulatory authorities) to select appropriate alternative routes and ultimately select a Preferred Route, as well as to assess potential impacts and develop proposed mitigation requirements along the Preferred Route.

Prepare an ER that meets the current OEB guidelines mentioned above.

Union Gas Limited

Guelph Reinforcement Phase II Pipeline Project

LET US KNOW WHAT YOU'RE THINKING

We are interested in hearing your comments, addressing questions, and working with the communities and residents along the Preliminary Preferred Route to ensure smooth and orderly development of the project.

Our ongoing approach to public communications and consultation includes a mix of providing information on the project plans and receiving input from interested people through the Public Information Session, exit questionnaires provided at the Public Information Session, and newsletters. One-on-one meetings can be arranged with individual property-owners or groups who may be directly affected by the proposed project to discuss project related details or concerns.

At the Public Information Session, we particularly want your input on the Preliminary Preferred Route and alternative route, the study process, and any other interests you might have regarding this project. You may provide comments at any point in the ER process.

WHAT HAPPENS AFTER THE PUBLIC INFORMATION SESSION?

After the Public Information Session, Stantec will evaluate the exit questionnaire results and other input and use this information to confirm a Preferred Route, and develop site-specific protection and mitigation measures.

The ER will outline the plans to reduce and control effects of the pipeline on the environment, identify plans to monitor the project, and any other contingencies.

WHAT'S NEXT?

- Analysis of public input (July 2008)
- Development of Preferred Route (July 2008)
- Confirmation of Preferred Route (July 2008)
- ER completion (August 2008)
- Application to the OEB (Fall 2008)
- OEB hearing and decision (Winter\Spring 2009)
- Construction, subject to OEB approval (Summer 2009)
- In-service date (Summer 2009)

CONTACT THE PROJECT TEAM

Please contact one of the individuals below:

David Wesenger,
Senior Project Manager
Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario, N1G 3M5
Ph.: 519-836-6050 (call collect)
Fx.: 519-836-2493
Email: david.wesenger@stantec.com

Doug Schmidt,
Principal Environmental Planner
Union Gas Limited
50 Keil Drive North
P.O. Box 2001
Chatham, Ontario N7M 5M1
Ph.: 1-800-265-5230
Fx.: 519-436-4560
Email: dschmidt@uniongas.com

Merv Weishar,
Senior Lands Agent
Union Gas Limited
50 Keil Drive North
P.O. Box 2001
Chatham, Ontario N7M 5M1
Ph.: 1-800-265-5230
Fx.: 519-436-5353
Email: mweishar@uniongas.com

FILE: 60960383_NL_2008-06-26.cdr

Appendix B5

Public Information Session Exit Questionnaire Summaries

Union Gas Limited Pipeline Project
Guelph Reinforcement Phase II

Environmental Report
Public Information Session Exit Questionnaire

Please complete this questionnaire and return it to a Stantec representative or mail it to Stantec Consulting Ltd. by **July 11, 2007**. Postage paid, self-addressed envelopes are available at the sign-in table. Thank you for your assistance.

Please read the newsletter and look over the displays before completing this questionnaire. If you require any assistance or clarification while completing the questionnaire please contact a Stantec or Union Gas representative.

1. Please describe your interest in this project. (please check one)

   Property Owner __2___ Member of Special Interest Group _____
   Interested Citizen ____ Government Official _____

   Other (please specify) _____

2. How did you find out about tonight's meeting? (please check one)

   Letter of Invitation __2__ Newspaper ___

   Other (please specify) _____

3. Please identify any environmental features in the Study Area which are either incorrectly mapped, omitted, or that you feel are important to consider during the study (please state your reasons).
   - None – if the preferred route is used

4. Which factors do you feel are most important to compare and evaluate alternative routes for the proposed pipeline (i.e., agricultural operations, traffic disruption, residential properties, business operations, trees, etc.)?
   - Agricultural operations
   - Wildlife
   - Wetlands

5. Do you feel that the Preliminary Preferred Route will have the least environmental and socio-economic impact, why?
   - Yes. It has the least disruption to the environment – wildlife, agriculture, trees, etc.
   - Yes. The alternative route would be very disruptive to our farming operation (L17C4 Puslinch) where the present line exists

6. Do you have any other concerns about this proposed pipeline project that you would like to bring to our attention?
   - No.
   - No. The preferred route would be the least disruptive agriculturally and would not cause any transportation problems along the Downey Road (the laying of the gas line on Hwy 52 in 2007 was non disruptive to traffic)

7. Would you like to meet or be contacted to discuss any questions or concerns regarding this pipeline project? (please check one) Yes _1_ (only if there is a major deviation from the Preferred Route) No _1_

If you answered yes to Question 7, please provide us with your contact information:

Name: _____

Address: _____

Phone: (home) _____ (work) _____

Email: _____

Convenient time you can be reached: _____

Thank you for completing this questionnaire.

Do you consent to these comments being included in the public record?

Yes __2___ Yes, but anonymously _____ No _____

Signature: _____

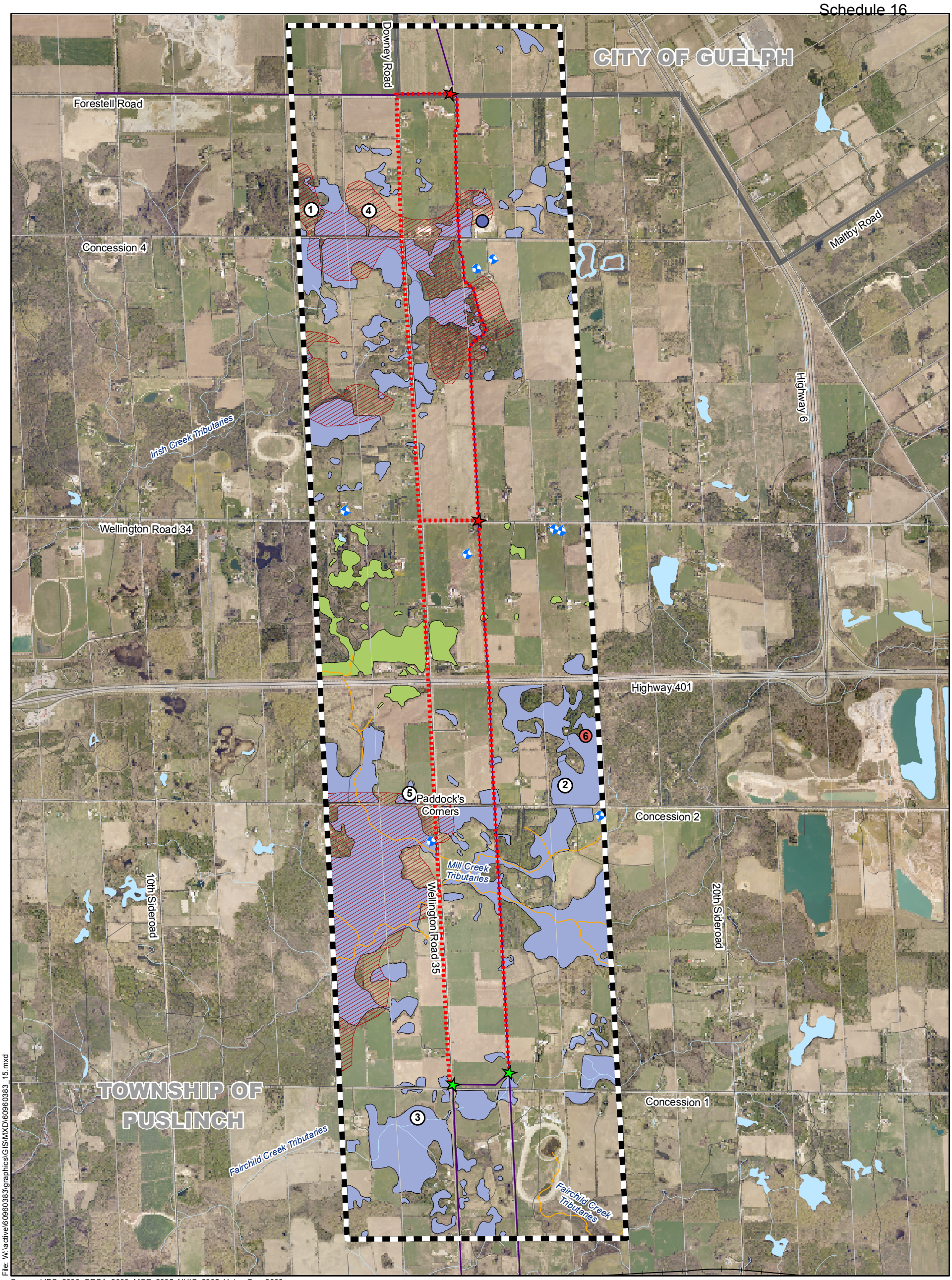
Date: _____

Appendix C

Environmental and Socio-Economic Setting

Appendix C1

Features Mapping



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Source: LIDS, 2006; GRCA, 2008; MOE, 2005; NHIC, 2005; Union Gas, 2008.

- Study Area
- Municipal Boundary
- Potential Start Point
- Potential End Point
- Alternative Routes
- Existing Pipelines
- Cold Water Stream
- Water Wells *
- Active Landfill
- Non-Provincially Significant Wetland
- Provincially Significant Wetland
  1. Cranberry - Oil Well Bog Complex
  2. Mill Creek Wetland
  3. Fairchild Creek Headwaters Complex
- Life Science ANSI
  4. Oil Well Bog - Little Tract
  5. Galt (Mill) Creek and Forest
- Earth Science Site
  6. Paris Moraine and Outwash

Stantec

N W E S

0 250 500 750 1,000 Meters

1:27,500

* Water well information was obtained from Ministry of the Environment data (2005). There may be other water wells within the study area.

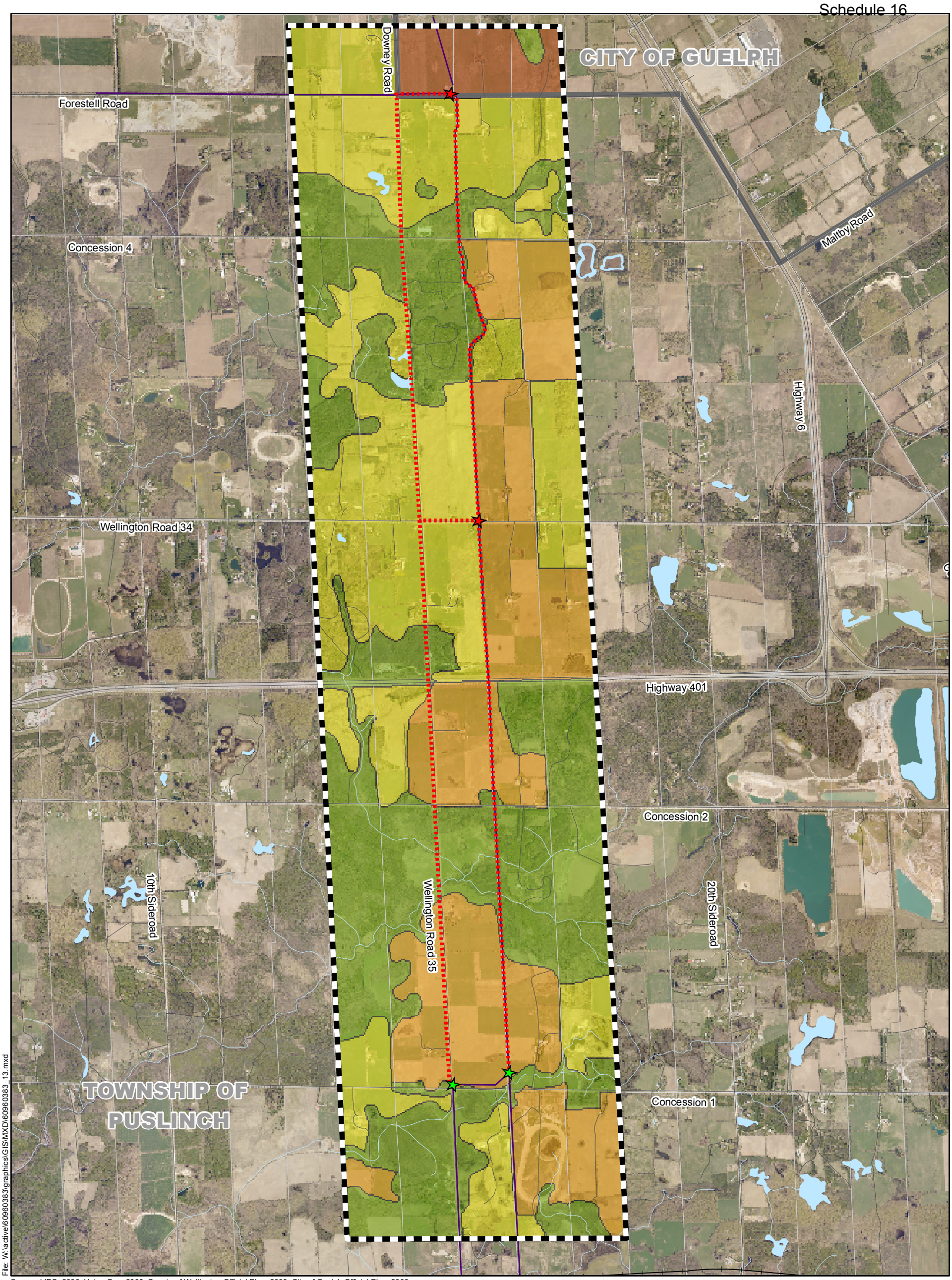
PREPARED FOR:

UNION GAS LTD.
GUELPH REINFORCEMENT PHASE II

FIGURE NO. C1-1

ENVIRONMENTAL AND SOCIO-ECONOMIC FEATURES

Initiated: April, 2008
Revised: July, 2008



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Source: LIDS, 2006; Union Gas, 2008; County of Wellington Official Plan, 2008; City of Guelph Official Plan, 2006.

Study Area
Municipal Boundary
Potential Start Point
Potential End Point
Alternative Routes
Existing Pipelines

Official Plan Land Use Designations

County of Wellington
- Greenlands and Core Greenlands
- Primary Agriculture
- Secondary Agriculture

City of Guelph
- Industrial
- Core Greenlands

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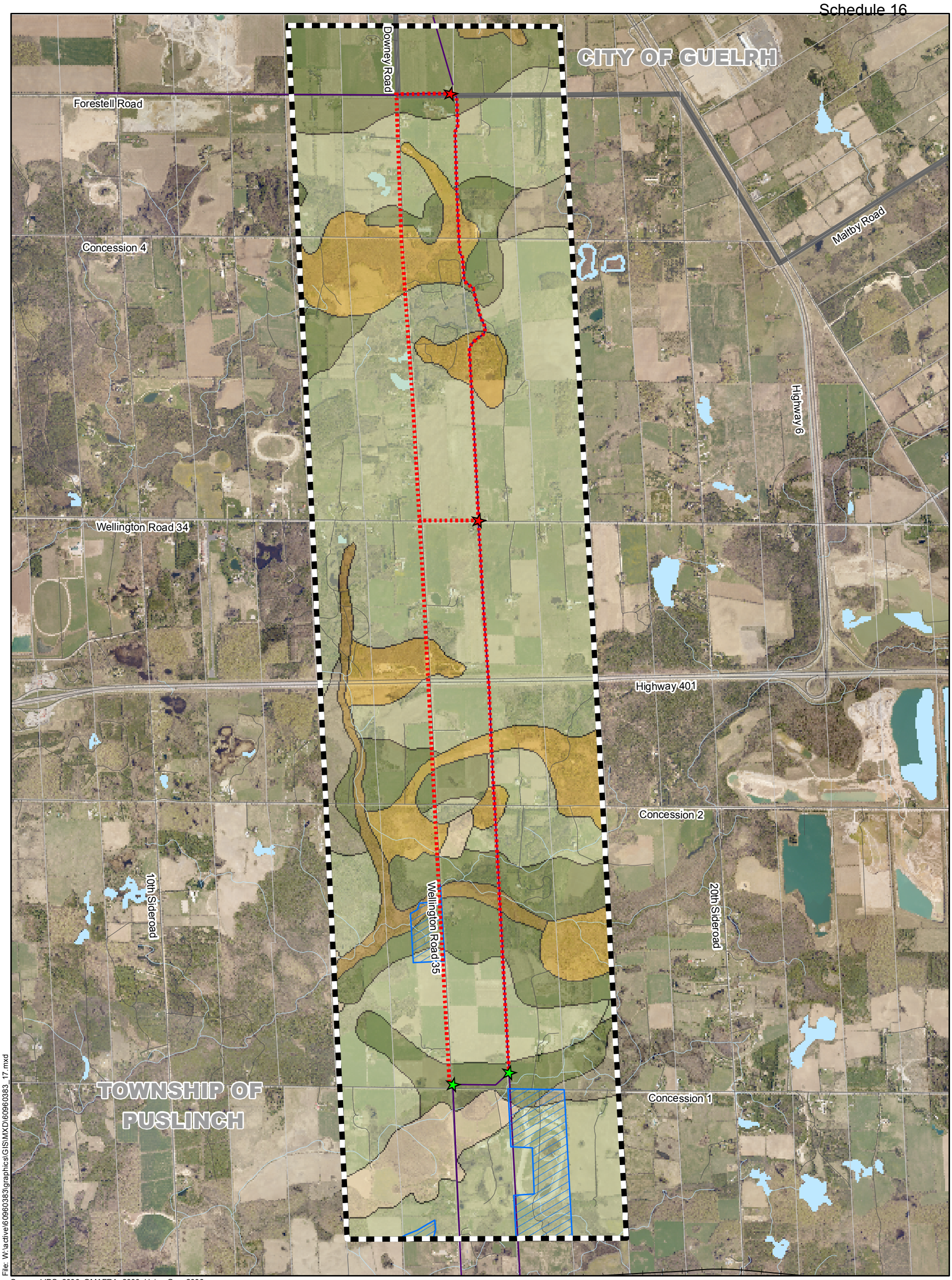
FIGURE NO. C1-2

LAND USE

Initiated: April, 2008
Revised: July, 2008



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Source: LIDS, 2006; OMAFRA, 2006; Union Gas, 2008.

Study Area
Municipal Boundary
Potential Start Point
Potential End Point
Alternative Routes
Existing Pipelines

Tile Drainage
Random
Systematic

Canada Land Inventory
2
3
4
5
6
7

N
W
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0 250 500 750 1,000
Meters
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GUELPH REINFORCEMENT PHASE II

FIGURE NO. C1-3

AGRICULTURAL FEATURES

Initiated: April, 2008
Revised: July, 2008

File: W:\active\60960383\graphics\GIS\MXD\60960383_16.mxd

Source: LIDS, 2006; OMAFRA, 2006; Union Gas, 2008.

Study Area
Municipal Boundary
Potential Start Point
Potential End Point
Alternative Routes
Existing Pipelines

Soil Type
BURFORD LOAM
DONNYBROOK SANDY LOAM
DUMFRIES
GILFORD LOAM
KILLEAN LOAM
LILY LOAM
MUCK

N
W
E
S

0 250 500 750 1,000 Meters

1:27,500

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FIGURE NO. C1-4

SOIL TYPES

Initiated: April, 2008
Revised: July, 2008

Appendix C2

Environmental and Socio-Economic Setting Text

APPENDIX C2 – UNION GAS LIMITED PIPELINE PROJECT – GUELPH REINFORCEMENT PHASE II ~ ENVIRONMENTAL AND SOCIO-ECONOMIC SETTING TEXT

File No. 160960383

Prepared for:
Union Gas Limited
P.O. Box 2001
50 Keil Drive North
Chatham ON N7M 5M1

Prepared by:
Stantec Consulting Ltd.
361 Southgate Drive
Guelph ON N1G 3M5

August 2008

APPENDIX C2 – UNION GAS LIMITED PIPELINE PROJECT - GUELPH REINFORCEMENT PHASE II

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APPENDIX C2 – UNION GAS LIMITED PIPELINE PROJECT - GUELPH REINFORCEMENT PHASE II

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1.0 Physical Features

1.1 PHYSIOGRAPHIC CHARACTERISTICS AND RESOURCES

1.1.1 Physiography

The study area is located within the physiographic region known as the Horseshoe moraines. The majority of The Township of Puslinch is made up of rough moraines, gravel spillways and swamps associated with the Horseshoe moraines feature. The two main moraines that comprise the Horseshoe moraines are the Paris and Galt moraines (Chapman and Putnam, 1984).

1.1.2 Bedrock

The Study Area consists of Paleozoic bedrock of the Guelph Formation. The Guelph Formation overlies the Lockport and Amabel Dolomites and consists of a buff-coloured, fine-grained sugary dolomite usually of high purity. This formation, combined with the Lockport and Amabel dolomites ranges in thickness from 60 m to 122 m (Hewitt, 1972). Based on Ministry of the Environment (“MOE”) water well records, the depth to bedrock within the Study Area varies from 5.5 m to 54.9 m (MOE, 2005).

1.1.3 Mineral and Aggregate Resources

Outside of the Study Area the till deposits within Wellington County have led to a large aggregate extraction industry.

Data from Natural Resources Canada (2004) indicates that there are no major producers of base metals, coal, ferrous, or precious metals in the Study Area. There are also no exploration projects for these resources in the Study Area (Natural Resources Canada, 2004).

1.1.4 Surficial Deposits

Soils within the Study Area are a reflection of their geology and physiography. The Study Area is located within two physiographic regions known as the Horseshoe moraines and the Flamborough Plain as classified by Chapman and Putnam (1984). Surficial deposits within Wellington County are of glacial origin that formed the parent material for the present day soils. A majority of the soils in the area are based on till deposits and vary in their texture (Hoffman and Matthews, 1963).

In the Study Area, the main soil type is Dumfries, which comprises 60.9%. These soils have developed from stony soil material derived mainly from limestone. The material is calcareous and free carbonates can be found very close to the surface. Stones and boulders are numerous both on the surface and throughout the soil mass. Burford soils area characterized by being

well drained soils consisting of loam surface horizons on gravel deposits. Burford soils comprise 20.8% of the Study Area. Muck comprises approximately 11.8% of the Study Area. Muck consists of organic deposits derived from decaying plant remains that have accumulated in shallow lakes, ponds or wet undrained depressions. The remainder of the soil in the Study Area is comprised of Killean Loam (3.4%), Donnybrook Sandy Loam (2.1%), Lily Loam (0.7%) and Gilford Loam (0.2%). Soil types within the Study Area are illustrated in **Appendix C1, Figure C1-4.**

1.2 SEISMICITY

The probability of seismic activity (i.e. earthquakes) in the Study Area is very low. Seismic activity and risk is recorded and estimated by Natural Resources Canada. The Study Area is located in a medium-low risk zone (2 on a scale from 1 through 5), which is typical of the majority of south-western Ontario (Natural Resources Canada, 2005).

1.3 CLIMATE

The climate of southern Ontario is moderated by the proximity of the Great Lakes, which differs from location to location and from one year to another. The study area lies along the boundary between the South Slopes and Huron Slopes climatic regions. The climate in this region is influenced by its proximity to Lakes Huron and Erie, which moderate temperatures and provide moisture-laden air to adjacent lands. Flows of cold dry air from the Arctic, moist warm air from the Gulf of Mexico and dry prevailing winds from the Pacific are the resulting air masses that affect the climate in this area (Brown et al., 1980). The region is characterized by warm summers, moderate to cold winters and reliable rainfall (Brown, et. al., 1980).

Prolonged and extended dry periods (greater than one month) are rare. Dry periods are defined as consecutive days having less than 0.254 cm of precipitation per day (Brown, et. al., 1980). The summer months have the highest frequency of dry periods of at least seven days in length. Wet periods, with 5 or more days with measurable precipitation, are most common in the November to May period.

Mean daily temperatures remain above 0 degrees Celsius (ºC) from April to November, resulting in a lengthy growing season. On average, there are 150 frost-free days in a year. The elevation at the Guelph Arboretum weather station is 328 m.above sea level. Weather statistics for the area are displayed in **Table 1.1**.

Table 1.1 Weather Statistics for the Guelph Arboretum

	J	F	M	A	M	J	J	A	S	O	N	D
Daily Average (°C)	-7.6	-6.9	-1.3	5.9	12.3	16.9	19.7	18.6	14.1	7.9	2.4	-4.0
Mean Rainfall (mm)	17.6	22.1	46.9	71.5	79.9	76.0	88.5	95.9	92.1	67.5	75.3	38.1
Mean Snowfall (cm)	45.8	33.1	25.8	6.3	0.1	0	0	0	0	1.5	9.7	38.5

Years of record: 1971 to 2000 **Source**: Environment Canada, 2002.

1.4 HYDROLOGY

1.4.1 Surficial Hydrology

The Study Area is drained by three subwatersheds located within the Grand River watershed. The main branch or tributaries of Irish Creek, Mill Creek and Fairchild Creek are located within the Study Area. Each of these watercourses is permanently flowing watercourses and both Mill Creek and Fairchild Creek contain coldwater habitat (MNR, pers. comm., 2008). A number of the tributaries associated with these watercourses are likely intermittent, conveying flows only during spring freshet and other times of the year when significant amounts of precipitation are received by the surrounding area.

The northern 1/3 of the Study Area contains headwater tributaries associated with Irish Creek, which generally flow from northeast to southwest. The southern portion of the Study Area (located approximately below Wellington Road 34) is drained by both Mill Creek and Fairchild Creek. Tributaries of Irish Creek are generally small watercourses, whereas Mill Creek, Fairchild Creek and their tributaries are larger watercourses with substantially more flow. All three watercourses and their tributaries are significantly influenced by the surrounding agricultural land as well as urban areas located to the northeast (City of Guelph) and the southwest (City of Cambridge). Watercourses within the Study Area are illustrated in **Appendix C1, Figure C1-1.**

1.4.2 Groundwater

Water well records obtained from the MOE indicate that eight wells have been drilled in the Study Area. **Appendix C1, Figure C1-1** illustrates the location of water wells within the Study Area. Groundwater is found at an average depth of 31.3 m ranging from 5.2 m to 54.9 m. Static water levels are variable, they average 27.0 m and range between 4.0 m to 53.9 m (MOE, 2005).

The well water supply is predominantly fresh and potable. Well water quality is summarized in **Tables 1.2 and 1.3**.

Table 1.2 Well Water Quality

Water Quality	Fresh	Unknown/Not Recorded
Number of Wells	5	3

Source: MOE, 2005.

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2.0 Agricultural Features

Information about agricultural features in the Study Area is derived from the Canada Land Inventory Capability for Agriculture for Southern Ontario, and data from the Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAFRA, 2006).

2.1 CANADA LAND INVENTORY CAPABILITY FOR AGRICULTURE

The Canada Land Inventory (CLI) categorizes land into seven classes and thirteen subclasses. These designations reflect the soil's potential to produce field and forage crops. Lands classified as Class 1 are considered the most productive, while those classified as Class 7 are considered the least productive. Class 1 to 4 agricultural lands are generally considered capable of being farmed productively while lands with Class 1, 2 and 3 designations are considered prime for general field crop production. The classification system reflects limitations such as slope, shallow soils, climate, drainage, and fertility among others. Organic soils are not rated in the classification system due to their inability to produce crops of any type.

Class 3 soils comprise approximately 60.9% of the Study Area. Soils in this class have moderately severe limitations that restrict the range of crops or require special conservation practices. Based on their subclass description, these soils have low fertility and moisture limitations. The remaining portions of the Study Area are comprised of Class 2 (20.8%), Class 7 (11.8%), Class 5 (3.4%), Class 6 (2.8%) and Class 4 (0.2%) soils. These soils have subclass limitations of excess water, inundation by stream or lakes, stoniness, and topography.

CLI categorization of lands within the Study Area is illustrated on **Appendix C1, Figure C1-3**.

2.2 ARTIFICIAL DRAINAGE

Artificial drainage in Ontario is mapped and categorized by OMAFRA into two general types: random and systematic. Random tile drains are used to dry isolated wet areas of a field and have no uniform order or direction. Random drainage is installed to improve the productivity of specific poorly drained areas within an agricultural field. Systematic drains are installed to improve the agricultural productivity of an entire field.

A small amount of the agricultural land within the Study Area has been improved with artificial drainage systems. Approximately 1.6% of the Study Area has artificial drainage systems installed; approximately 1.3% is systematically drained, and an additional 0.3% has random drainage. **Appendix C1, Figure C1-3** illustrates the location and type of artificially drained lands within the Study Area.

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3.0 Biophysical Features

3.1 WATERCOURSES AND FISHERIES

As noted in **Section 1.4.1**, two of the watercourses located within the Study Area possess coldwater thermal regimes; Mill Creek and Fairchild Creek. NRVIS mapping located on the Grand River Conservation Authority (GRCA) website (www.grandiver.ca) indicates that reaches of both Irish Creek and Fairchild Creek within the study area are unclassified. Approximately 1km downstream of the study area, NRVIS data from the GRCA website shows Irish Creek as possessing a warmwater thermal regime. It is expected that due to their location within wetlands that the Irish Creek tributaries located within the study area may become intermittent during summer months. Approximately 4 to 6 km downstream of the Study Area, Fairchild Creek possesses both warmwater and coldwater thermal regimes at various locations.

Irish Creek converges with the Speed River immediately upstream of the eastern edge of Hespeler, in the City of Cambridge. Mill Creek converges with the Grand River in the City of Cambridge, approximately 10km downstream and is known to support populations of brown and brook trout. Brown trout presence is most common downstream (south) of Highway 401 and brook trout presence is generally restricted to headwaters areas upstream of the highway. Fairchild Creek is generally a large subwatershed of the Grand River that converges with the river more than 20km downstream, south of the City of Brantford.

3.2 WETLANDS

There are three Provincially Significant Wetlands (“PSWs”) in the Study Area; The Cranberry – Oil Well Bog Complex, the Mill (Galt) Creek Wetland and the Fairchild Creek Headwater Complex.

The Cranberry – Oil Well Bog Complex is made up of nine individual wetlands, composed of three wetland types; 2% bog, 83% swamp and 15% marsh (Coulson and Ertel, 1985). The Mill (Galt) Creek Wetland PSW is composed of two wetland types; 95% swamp and 5% marsh (Tilt et al., 1984). The Fairchild Creek Headwaters Complex is made up of five individual wetlands, composed of two wetland types; 88% swamp and 12% marsh (Kroetsch and Stephenson, 1988).

3.3 FOREST AND VEGETATION COVER

The Study Area is within the Deciduous Forest Region. This region lies along the northern shores of Lake Erie and Ontario, and the southeastern shore of Lake Huron. The Deciduous region is a mixed forest influenced by the mild, lake moderated climate (MNR, 2002a). Indicative tree species of the Carolinian Region are listed in **Table 3.1** (Waldron, 2003).

Table 3.1 Indicative Tree Species of the Carolinian Forest Region

Common Name	Scientific Name
American Basswood	*Tilia americana*
American Beech	*Fagus grandifolia*
American Sycamore	*Platanus occidentalis*
Black Oak	*Quercus velutina*
Black Walnut	*Juglans nigra*
Blue Ash	*Fraxinus quadrangulata*
Butternut	*Juglans cinerea*
Cucumber Tree	*Magnolia acuminata*
Honey-Locust	*Gleditsia triacanthos*
Kentucky Coffee Tree	*Gymnocladus dioicus*
Ohio Buckeye	*Aesculus glabra*
Pawpaw	*Asimina triloba*
Pignut Hickory	*Carya glabra*
Pin Oak	*Quercus palustris*
Pumpkin Ash	*Fraxinus profunda*
Red Ash	*Fraxinus pennsylvanica*
Red Mulberry	*Morus rubra*
Sassafras	*Sassafras albidum*
Shellbark Hickory	*Carya laciniosa*
Shumard Oak	*Quercus ellipsoidalis*
Sugar Maple	*Acer saccharum*
Swamp White Oak	*Quercus bicolor*
Tulip Tree	*Liriodendron tulipifera*
White Oak	*Quercus alba*

Source: Waldron, 2003.

Within Canada, southern Ontario is the only area where the Deciduous Forest Region exists. It contains virtually all of the main species found in the Great Lakes – St. Lawrence region, however, in the south there exist broadleaved species that exist no where else in Canada (Armson, 2001).

3.4 WILDLIFE

Wildlife depends on specific habitat types for survival, but some species are more sensitive to disturbance than others. For example, raccoons are highly adaptable to urban environments while grey wolves are usually found in large tracts of relatively undisturbed forest. Species that are less adaptable may experience a population decline if habitat is lost or if major artificial disturbance occurs. Usually, habitat type is indicative of the types of species that occur in the area.

Table 3.2 lists species that have the potential to be found in the vicinity of the Study Area. Common wildlife species were determined through the use of the *Atlas of the Mammals of Ontario* and the *Ontario Herpetofaunal Summary Atlas* (Dobbyn, 1994; MNR, 2002b).

Table 3.2 Common Species Found in the Vicinity of the Study Area

Common Name	Scientific Name
Bats	
Big Brown Bat	*Eptesicus fuscus*
Eastern Small-footed Bar	*Myotis leibii*
Eastern Pipistrelle	*Pipistrellus subflavus*
Eastern Red Bat	*Lasiurus borealis*
Hoary Bat	*Lasiurus cinereus*
Little Brown Bat	*Myotis lucifuga*
Northern Long-eared Bat	*Myotis septentrionalis*
Silver-haired Bat	*Lasionycteris noctivagans*
Carnivores	
Coyote	*Canis latrans*
Ermine	*Mustela erminea*
Long-tailed Weasel	*Mustela frenata*
Mink	*Mustela vison*
Raccoon	*Procyan lotor*
Red Fox	*Vulpes vulpes*
Striped Skunk	*Mephitis mephitis*
Deer	
White-tailed Deer	*Odocoileus virginianus*
Opossum	
Virginia Opossum	*Didelphis virginiana*
Rabbits and Hares	
Eastern Cottontail	*Sylvilagus floridanus*
European Hare	*Lepus europaeus*
Snowshoe Hare	*Lepus americanus*
Rodents	
Beaver	*Castor canadensis*
Deer Mouse	*Peromyscus maniculatus*
Eastern Chipmunk	*Tamias striatus*
Gray Squirrel and Grey and Black Phases	*Sciurus carolinensis*
House Mouse	*Mus musculus*
Meadow Jumping Mouse	*Zapus hudsonius*
Meadow Vole	*Microtus pennsylvanicus*
Muskrat	*Ondatra zibethicus*
Northern flying Squirrel	*Glaucomys sabrinus*
Norway Rat	*Rattus norvegicus*
Porcupine	*Erathizon dorsatum*
Red Squirrel	*Tamiasciurus hudsonicus*
Southern Bog Lemming	*Synaptomys cooperi*
Southern Flying Squirrel	*Glaucomys volans*
White-footed Mouse	*Peromyscus leucopus*
Woodchuck	*Marmota monax*
Woodland Jumping Mouse	*Napaeozapus insignis*
Woodland Vole	*Pitymys pinetorum*

Table 3.2 Common Species Found in the Vicinity of the Study Area

Common Name	Scientific Name
Shrews and Moles	
Common Shrew	*Sorex cinereus*
Hairy-tailed Mole	*Parascalops breweri*
Northern Short-tailed Shrew	*Blarina brevicauda*
Smoky Shrew	*Sorex fumeus*
Star-nosed Mole	*Condylura cristata*
Water Shrew	*Sorex palustris*
Salamanders	
Common Mudpuppy	*Necturus maculosus*
Red-Spotted Newt	Notophthalmus viridescens viridescens
Blue-spotted Salamander	*Ambystoma laterale*
Jefferson-Blue Spotted Salamander Complex	*Ambystoma jeffersonianum – laterale "complex"*
Spotted Salamander	*Ambystoma maculatum*
Northern Redback Salamander	*Plethodon cinereus*
Frogs and Toads	
Eastern American Toad	*Bufo americanus americanus*
Northern Spring Peeper	*Pseudacris crucifer*
Western Chrous Frog	*Pseudacris triseriata*
Gray Treefrog	*Hyla versicolor*
Wood Frog	*Rana sylvatica*
Northern Leopard Frog	*Rana pipiens*
Pickerel Frog	*Rana palustris*
Green Frog	*Rana clamitans melanota*
Mink Frog	*Rana septentrionalis*
Bullfrog	*Rana catesbeiana*
Turtles	
Common Snapping Turtle	*Chelydra serpentina*
Midland Painted Turtle	*Chrysemys picta marginata*
Common Map Turtle	*Graptemys geographica*
Blandings Turtle	*Emydoidea blandingii*
Snakes	
Eastern Garter Snake	*Thamnophis sirtalis sirtalis*
Northern Ribbon Snake	*Thamnophis sauritus septentrionalis*
Northern Water Snake	*Nerodia sipedon sipedon*
Northern Redbelly Snake	*Soreria occipitomaculata occipitomaculata*
Brown Snake	*Storeria dekayi*
Smooth Green Snake	*Liochlorophis vernalis*
Eastern Milk Snake	*Lampropeltis triangulum triangulum*

Source: Dobbyn, 1994; MNR, 2002b.

Bird species that were commonly recorded within the Study Area include mourning dove, American kestrel, American crow, song sparrow, black-capped chickadee, and red-winged blackbird (Ontario Breeding Bird Atlas, 2001-2005). See **Attachment 1** for a full list of birds common to the Study Area. Due to the relatively small size of the fragmented woodlots, the avifauna is likely dominated by edge species that are relatively tolerant of some disturbance. Species requiring larger and more continuous forest tracks (forest interior and area sensitive species) will tend to concentrate in the more extensive forests, natural areas, and river valleys that are not common to the Study Area.

3.5 RARE, THREATENED, OR ENDANGERED SPECIES

Rare and at-risk species may be determined at national, provincial, and municipal levels. Species that have been determined to be at risk by COSEWIC are rare or threatened throughout Canada. COSEWIC ranks species as endangered, threatened, or special concern. The provincial Committee on the Status of Species at Risk in Ontario ("COSSARO") identifies endangered, threatened or special concern species in Ontario. Additionally, the MNR assigns "S-Ranks" to species based on rarity, from extremely rare (S1) to very common (S5). A review of the National Species at Risk (Environment Canada, 2006) and provincial Natural Heritage Information Centre databases (NHIC, 2005) identified 23 vulnerable or rare species whose habitat ranges overlap with the Study Area. Other species of local concern may also be present.

Species that could be found within the Study Area that are rare or very rare in Canada are listed in **Table 3.3**.

Table 3.3 Species at Risk

Common Name	Scientific Name	National Status	Provincial Status
Carnivores			
American Badger	*Taxidea taxus jacksoni*	Endangered	Endangered
Grey Fox	*Urocyon cinereoargenteus*	Threatened	Threatened
Turtles			
Northern Map Turtle	*Graptemys geographica*	Special concern	Special concern
Blanding's Turtle (Great Lakes/St. Lawrence Population)	*Emydoidea blandingii*	Threatened	Threatened
Amphibians			
Jefferson Salamander	*Ambystoma jeffersonianum*	Threatened	Threatened
Snakes			
Eastern Ribbonsnake (Great Lakes Population)	*Thamnophis sauritus*	Special concern	Special concern
Milksnake	*Lampropeltis triangulum*	Special concern	Special concern
Queen Snake	*Regina septemvittata*	Threatened	Threatened
Birds			
Acadian Flycatcher	*Empidonax virescens*	Endangered	Endangered

Table 3.3 Species at Risk

Common Name	Scientific Name	National Status	Provincial Status
Barn Owl (Eastern population)	*Tyto alba*	Endangered	Endangered
Cerulean Warbler	*Dendroica cerulean*	Special concern	Special concern
Henslow's Sparrow	*Ammodramus henslowii*	Endangered	Endangered
Hooded Warbler	*Wilsonia citrine*	Threatened	Threatened
Least Bittern	*Ixobrychus exilis*	Threatened	Threatened
Northern Bobwhite	*Colinus virginianus*	Endangered	Endangered
Peregrine Falcon anatum subspecies	*Falco peregrinusanatum*	Special Concern	Endangered
Yellow-breasted Chat virens subspecies	*Icteria virens virens*	Special Concern	Special concern
Plants			
American Ginseng	*Panax quinquefolius*	Endangered	Endangered
Butternut	*Juglans cinerea*	Endangered	Endangered
Butterflies			
Monarch	*Danaus plexippus*	Special Concern	Not in any category of risk

Source: Environment Canada, 2006.

Species that could be found within the Study Area that are rare or very rare in Ontario are listed in **Table 3.4**.

Table 3.4 Species of Provincial Concern

Common Name	Scientific Name	Rank
Birds		
King Rail	*Rallus elegans*	S2B – Imperiled, Breeding
Least Bittern	*Ixobrychus exilis*	S3B – Vulnerable, Breeding
Red Shouldered Hawk	*Buteo lineatus*	S4B – Apparently Secure, Breeding
Amphibians		
Jefferson Salamander	*Ambystoma jeffersonianum*	S2 - Imperiled
Plants		
American Chestnut	*Castanea dentata*	S2 - Imperiled

Source: NHIC, 2005.

3.6 NATURAL AREAS

As determined by performing a search on the Ministry of Natural Resources ("MNR") Natural Heritage Information Centre ("NHIC") website and correspondence with the GRCA, it was determined that there is one Earth Science Site ("ESS") and two Life Science Areas of Natural and Scientific Interest ("Life Science ANSIs") in the Study Area.

An ESS is a geological site selected to protect outstanding examples of rock types, fossil localities, landform associations and areas containing significant groundwater resources. ANSIs are areas of land and water that represent significant geological (earth science) and biological

(life science) features. Life Science ANSIs are natural areas selected to protect outstanding landscapes, environments and biotic communities.

The Paris Moraine and Outwash ESS is located within the Study Area (NHIC, 2005).

The Oil Well Bog – Little Tract is a Life Science ANSI as designated by the GRCA and MNR. It is a 336 ha late stage heath and black spruce bog supporting 4 bog forms (leatherleaf-sphagnum; spruce-tamarack), swamp (aspen-red maple-elm; willow thickets), upland woods (sugar maple-beech-hemlock), old fields, marsh and ponds (Klinkenberg, 1984). Further study of the bogs in this site district might result in the selection of this site as a candidate nature reserve.

The Galt (Mill) Creek forest is a Life Science ANSI as designated by the GRCA and MNR. It is an 800 ha lowland mixed and coniferous swamp forest (cedar, red maple-white cedar, willow-alder) with some representation of upland forest (beech-maple) with ash and white pine and an area of old field growth (Klinkenberg, 1984). The creek which flows through the site is reported as important for maintaining the hydrological balance.

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4.0 Socio-Economic Features

The Study Area is located in the Township of Puslinch, and a very small portion of the City of Guelph, in Wellington County. Statistics Canada information for the Township of Puslinch will be used for the Study.

4.1 MUNICIPAL STRUCTURE

The Township of Puslinch is located within the County of Wellington. It is directly south of the City of Guelph and east of the City of Cambridge with Highway 401 bisecting the Township from east to west. The Township of Puslinch was incorporated as a Township on January 1, 1850. Villages in the Township of Puslinch include Aberfoyle, Aikensville, Arkell, Badenoch, Crieff, Glen Christie, Killean, Paddock's Corners, Morriston, Corwhin, Downey, Puslinch, and Puslinch Lake (Township of Puslinch, 2006).

4.2 POPULATION

In 2006, the population of The Township of Puslinch was 6,689, up 13.7% from 5,885 in 2001 (Statistics Canada, 2006). The population density in 2006 was 31.2 persons per km^2. The Township of Puslinch has an unemployment rate of 4.6%, which is less than the unemployment rate in Ontario, which was 6.4% in 2006 (Statistics Canada, 2006). The growth rate in The Township of Puslinch has been accelerating, up from 8.7% to 13.7% during the period from 1996 to 2006. This means that the Study Area is likely to see growth rates continue at or above this level for the next few years, adding a considerable number of people in the coming years. In 2001, the population of The Township of Puslinch had a median age of 42.4 years, however due to the aging of the baby-boomer generation the median age in 2006 was 44.2 years (Statistics Canada, 2001 and 2006).

In 2006, the level of education was highest amongst the population aged 25-34 with 18.8% possessing a college certificate or diploma and 29.1% possessing a university certificate, diploma or degree. However, this portion of the population possesses the middle percentage of trades certificates or diplomas at 5.2% (Statistics Canada, 2006).

4.3 INSTITUTIONAL CHARACTERISTICS

Institutional characteristics (e.g. schools, churches, hospitals, community centres) are an important part of a community's social fabric. However; there are no institutional facilities in the Study Area.

4.4 CULTURE AND TOURISM

Just south of the Study Area is the African Lion Safari. Located on Cooper Road and Safari Road, it is a park that houses 1000 unique and rare mammals and birds who are roaming freely. The park has the following attractions: 9 km drive through game reserve; wet play area; Jungle playground; Parrot Paradise Show; Elephant roundup demonstration; scenic railway tour; Birds of Prey flying demonstration; and the “African Queen” cruise ship. The main attraction of the park is that visitors have the option of driving their own vehicle through the safari area where wild animals are able to roam freely.

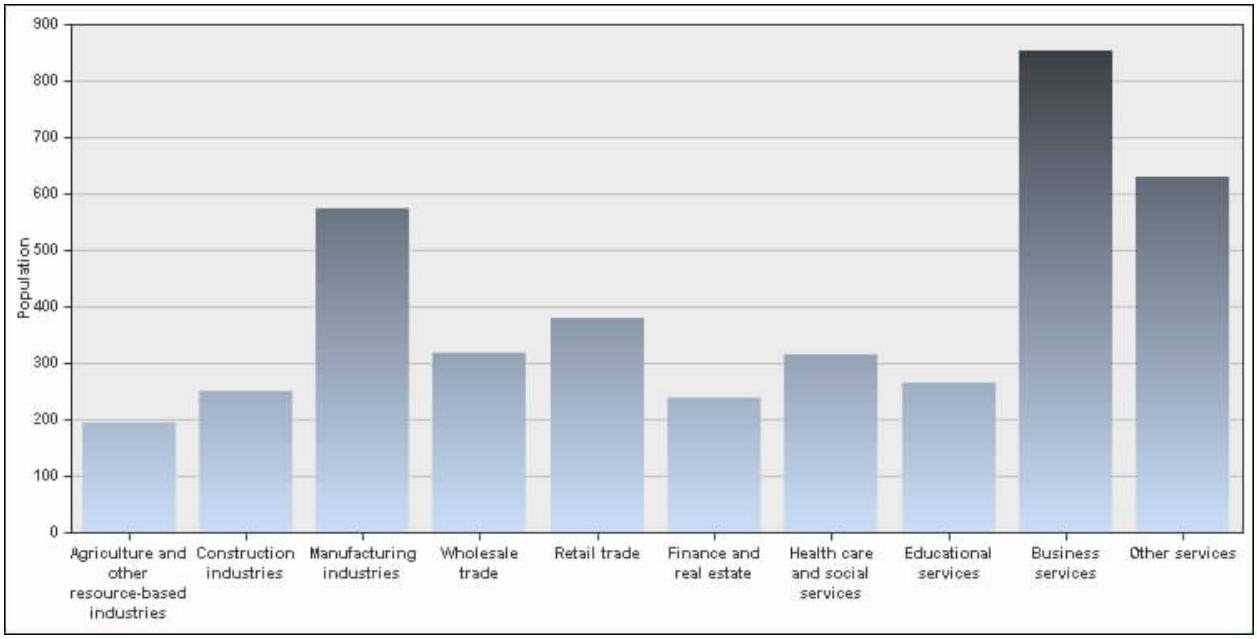
The Oil Well Bog - Little Track is a Life Science ANSI located south east of the intersection of Wellington Road 35 and Concession 4. The Vance trails are located within this natural area. These trails are managed the GRCA for public recreation and preservation. Activities that are permitted on these trails are hiking, skiing, and hunting by special permit.

4.5 ECONOMY AND EMPLOYMENT

4.5.1 Economy

The Township of Puslinch has a diverse economic makeup consisting of primary, secondary and tertiary sectors. The composition of economic sectors and industries in this region is very similar to Ontario’s, with the majority of the labour force being employed in the service industry (tertiary), followed by the manufacturing industry (secondary), with the fewest people employed in resource extraction (primary). The Township of Puslinch had the highest percentage of the labour force in the primary sector with 4.8% (Statistics Canada, 2006). **Figure 4.1** shows the distribution of the labour force by industry.

Figure 4.1 Township of Puslinch Labour Force by Industry



Source: Statistics Canada, 2006

4.5.2 Employment

In 2006, The Township of Puslinch's working population had a median income of $30,076, which is above Ontario's median of $24,816. London's employed labour force is made up of a total of 4,605 people over the age of 15 (Statistics Canada, 2001). The unemployment rate is lower in The Township of Puslinch (4.6%) than the average unemployment rate of Ontario (6.4%) (Statistics Canada, 2006).

The vast majority of The Township of Puslinch's population traveled to and from work as the driver of a car, van, or truck (90.4%), whereas only 1.8% of the population used public transportation to commute to work. In 2006 more people walked or biked to work (2.2%) than used public transportation (Statistics Canada, 2006).

4.6 LAND USE

Land use information is derived from aerial photographs, and official planning documents including those from Wellington County (2008), and the City of Guelph (2006). **Appendix C1, Figure C1-2** illustrates land use designations within the Study Area.

Land use in each of these planning areas within the Study Area is divided into:

Wellington County:

- Primary Agriculture;
- Secondary Agriculture; and,
- Greenlands and Core Greenlands.

City of Guelph:

- Industrial; and,
- Core Greenlands.

The majority of the Study Area is classified as Agriculture (Primary of Secondary).

4.6.1 Land Use Planning and Policy Affecting Pipelines

Pipelines must meet Ontario Pipeline Coordinating Committee standards, guidelines, and policy. Each planning area is responsible for planning and policy within their designated limits. Planning and policy is described in each respective Official Plan and zoning by-law documents (Wellington County (2008), City of Guelph (2006)).

4.7 FIRST NATIONS INTERESTS

Indian and Northern Affairs Canada's (INAC), Ontario Research Team, Litigation and Management and Resolution Branch, Specific Claims Branch, and Comprehensive Claims Branch, the Ontario Secretariat for Aboriginal Affairs, the Ministry of the Attorney General, and the following First Nations: Mississaugas of the New Credit; Six Nations of the Grand River Territory; Mississaugas of Scugog Island First Nation; Hiawartha First Nation; Curve Lake First Nation; and, Alderville First Nation, were contacted on March 18, 2008 to seek information regarding the status of lands within the Study Area. These stakeholders were also sent letters on June 2, 2008 to notify them of the Public Information Session scheduled for June 26, 2008.

In a letter dated April 8, 2008, INAC's Specific Claims Branch confirmed that there are no specific claims in the Study Area.

The Six Nations Council sent a letter dated April 10, 2008 informing Stantec that the Study Area is within the 1701 Treaty Territory (within six miles on either side of the Grand River). They stated that they have no comments at this time but would like to be kept up to date on the archaeological work that will be conducted within the Study Area.

INAC's Litigation and Resolution Management Branch advised in a letter dated June 16, 2008 that their inventory includes active ligitagion in the vicinity of the Study Area. The litigation is entitled: *Six Nations of the Grand River Band of Indians v. Attorney General for Canada and Her Majesty the Queen in Right of Ontario*. They were unable to comment with respect to possible effects of this claim since the case had not been adjudicated at the time this letter was written.

Summaries of correspondence with First Nations are located in **Appendix B1**. Copies of correspondence related to First Nations are located in **Appendix B3.**

4.8 HERITAGE AND ARCHAEOLOGICAL RESOURCES

D.R. Poulton & Associates Inc. conducted a Stage 1 archaeological assessment under Archaeological Consulting License #P053, issued by the Ontario Ministry of Culture. The Stage 1 assessment consisted of background research to identify known or potential archaeological planning constraints within the Study Area and a visual examination of the Study. A variety of sources were consulted in the course of this work. These included a thorough review of published and unpublished reports on past archaeological surveys and excavations, a review of the history of land-use in the area, and an examination of archaeological site inventories and archival materials. The report concluded that lands within the Study Area have a moderate potential for the presence of archaeological remains.

The archaeological report is provided in **Appendix E.**

4.9 EXISTING LINEAR CORRIDORS

Linear corridors include roads, hydrocarbon transmission lines, hydroelectric transmission lines, railways, and utilities.

4.9.1 Roads

The Province of Ontario is responsible for maintenance of provincial highways in the Study Area. There is one provincial highway in the Study Area: Highway 401. Each municipality is responsible for maintaining roads within their region. The Study Area contains a large number of roads. **Appendix A, Figure A-1** displays roadways within the Study Area.

4.9.2 Hydrocarbon Transmission Lines

Union Gas operates and maintains a network of natural gas transmission and distribution pipelines and associated facilities such as valve sites and metering stations throughout the Study Area.

4.9.3 Hydroelectric Transmission Lines

There are no major hydroelectric transmission lines that run within the Study Area. Overhead wooden or cement pole hydroelectric distribution lines are located on most roads within the Study area.

4.9.4 Railways

There are no railways within the Study Area.

4.9.5 Utilities

It is likely that telephone and television lines are located adjacent to roadways within the Study Area.

4.10 WASTE DISPOSAL

The location and classification of active and closed landfill sites in the Study Area was determined through a search of appropriate background information and a site visit. The location and type of waste disposal site is used to identify potentially contaminated areas that may be disturbed during pipeline construction.

There is one known registered active waste disposal site in the Study Area (see **Appendix C1, Figure C1-1**) (MOE, 1991). The Aberfoyle Landfill Site is located at 6922 Concession 4 in the Township of Puslinch and is operated by the County of Wellington. This landfill operates under the conditions outlined in the Certificate of Approval (CofA) No. A172201, issued by the Ministry of the Environment (MOE) on September 17, 1984. This landfill is classified as Class A4. It is designated Class A due to its potential hazard to humans, and 4 because it is rural. The 31.8 acre (12.9 ha) site, encompassing a landfill area of 11.3 acres (4.6 ha) accepts disposal of solid, non-hazardous, domestic, commercial, industrial, and institutional waste, and temporary storage and transfer of household hazardous waste. This landfill has also been designated as a reuse centre where members of the public can drop-off or pick-up used items that would normally be landfilled.

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Attachment 1

List of Birds

Square Summary (17NH60)

#species (1st atlas)				#species (2nd atlas)				#hours		#pc done	
poss	prob	conf	total	poss	prob	conf	total	1st	2nd	road	offrd
5	3	1	9	0	0	0	0	2	0	0	0

Region summary (#5: Long Point)

Schedule 16

#squares	#sq with data		#species		#pc done	target #pc
	1st	2nd	1st	2nd		
37	37	35	176	176	1604	925

Target number of point counts in this square: 0 road side, 0 off road.

SPECIES	Code		%		SPECIES	Code		%		SPECIES	Code		%	
	1st	2nd	1st	2nd		1st	2nd	1st	2nd		1st	2nd	1st	2nd
Pied-billed Grebe			16	31	Red-should Hawk †			16	11	Mourning Dove			97	100
American Bittern			24	25	Broad-winged Hawk			43	48	Black-billed Cuckoo			72	91
Least Bittern †			24	17	Red-tailed Hawk			94	97	Yellow-billed Cuckoo			48	68
Great Blue Heron §			86	88	American Kestrel	P		97	85	Black/Yell-billed Cuckoo			0	45
Green Heron §			94	91	Gray Partridge			48	20	Eastern Screech-Owl			83	91
Black-crown N.-Heron † §			10	0	Ring-necked Pheasant			54	45	Great Horned Owl			89	77
Turkey Vulture			91	91	Ruffed Grouse			86	68	Barred Owl ‡			8	5
Canada Goose			94	97	Wild Turkey			13	85	Long-eared Owl ‡			10	2
Mute Swan			8	25	Northern Bobwhite †			2	8	North Saw-whet Owl ‡			8	2
Wood Duck			89	97	King Rail †			5	5	Common Nighthawk			35	22
Gadwall ‡			16	8	Virginia Rail			37	45	Chuck-will's-widow †			2	0
American Wigeon ‡			8	5	Sora			29	37	Whip-poor-will			37	28
American Black Duck			35	28	Common Moorhen			21	14	Chimney Swift			81	80
Mallard			97	97	American Coot			16	8	Ruby-thr Hummingbird			89	100
Blue-winged Teal			78	34	Coot/Moorhen			0	0	Belted Kingfisher			97	94
Cinnamon Teal †			2	0	Sandhill Crane ‡			0	14	Red-head Woodpecker †			81	45
Northern Shoveler ‡			5	2	Killdeer	P		100	100	Red-bell Woodpecker			8	97
Northern Pintail ‡			8	11	Spotted Sandpiper	H		100	74	Yellow-bellied Sapsucker			37	62
Green-winged Teal ‡			0	8	Upland Sandpiper			24	8	Downy Woodpecker			97	100
Redhead †			10	0	Common Snipe			51	22	Hairy Woodpecker			94	94
Lesser Scaup ‡			2	0	American Woodcock			89	88	Northern Flicker		H	100	100
Hooded Merganser			21	34	Wilson's Phalarope †			2	2	Pileated Woodpecker			64	68
Red-breast Merganser ‡			2	2	Little Gull †			2	0	Eastern Wood-Pewee			97	100
Ruddy Duck †			2	2	Ring-billed Gull §			10	2	Acadian Flycatcher †			8	37
Bald Eagle †			2	22	Herring Gull ‡§			8	0	Alder Flycatcher			59	65
Northern Harrier			40	60	Common Tern ‡§			10	0	Willow Flycatcher			89	97
Sharp-shinned Hawk			29	60	Forster's Tern † §			8	5	Least Flycatcher			81	85
Cooper's Hawk			8	65	Black Tern † §			13	11	Eastern Phoebe			81	97
Northern Goshawk ‡			2	11	Rock Dove			91	91	Gr Crested Flycatcher			94	100

next page >>

Ontario Breeding Bird Atlas - Summary Sheet for Square 17NH60 (page 2 of 3)

Schedule 16

SPECIES	Code 1st	Code 2nd	% 1st	% 2nd
Eastern Kingbird			97	100
Loggerhead Shrike †			2	0
White-eyed Vireo †			5	5
Yellow-throated Vireo			70	62
Blue-headed Vireo			16	17
Warbling Vireo			91	100
Red-eyed Vireo			94	100
Blue Jay			97	100
American Crow			97	100
Horned Lark			89	91
Purple Martin			83	54
Tree Swallow			97	100
North Rgh-wing Swallow			91	94
Bank Swallow §			91	85
Cliff Swallow §			54	57
Barn Swallow			94	100
Black-capp Chickadee			97	100
Tufted Titmouse †			0	17
Red-breast Nuthatch			54	62
White-breast Nuthatch			91	97
Brown Creeper			48	57
Carolina Wren			2	62
House Wren	S		100	100
Winter Wren			29	37
Sedge Wren ‡			5	5
Marsh Wren			32	22
Golden-crown Kinglet			21	17
Blue-gr Gnatcatcher			75	80
Eastern Bluebird			51	88
Veery			83	88
Hermit Thrush			16	22
Wood Thrush			86	97
American Robin			94	100
Gray Catbird			94	100
Northern Mockingbird			8	37
Brown Thrasher	FY		97	94
European Starling			97	100
Cedar Waxwing			97	97
Blue-winged Warbler			59	65
Golden-winged Warbler			51	17
Blue/Gold-wing Warbler			0	25
Lawrence's Warbler †			0	0
Brewster's Warbler †			21	8
Nashville Warbler			18	14
Northern Parula ‡			2	0
Yellow Warbler			94	100
Chestn-sided Warbler			70	80
Magnolia Warbler			8	42
Black-thr Blue Warbler			0	28
Yellow-rumped Warbler ‡			10	17
Black-thr Green Warbler			24	51
Blackburnian Warbler			27	31
Pine Warbler			54	82
Prairie Warbler †			5	5
Cerulean Warbler †			40	31
Black-white Warbler			40	60
American Redstart			86	91
Prothonotary Warbler †			13	8
Ovenbird			89	94
North Waterthrush			56	71
Louis Waterthrush †			37	22
Kentucky Warbler †			8	2
Mourning Warbler			64	71
Common Yellowthroat			97	100
Hooded Warbler †			18	37
Canada Warbler			48	40
Yellow-breast Chat †			10	2
Summer Tanager ‡			0	5
Scarlet Tanager			89	97
Eastern Towhee			97	97
Chipping Sparrow		A	100	100
Clay-colored Sparrow ‡			5	20
Field Sparrow		S	100	94
Vesper Sparrow			86	91
Savannah Sparrow			89	94
Grasshopper Sparrow			10	31
Song Sparrow			97	100
Swamp Sparrow			89	91
White-throat Sparrow			16	25
Dark-eyed Junco			10	8
Northern Cardinal			94	100
Rose-breast Grosbeak			86	100
Indigo Bunting			94	100
Bobolink			91	94
Red-wing Blackbird			97	100
Eastern Meadowlark			97	88
Western Meadowlark ‡			2	0

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Ontario Breeding Bird Atlas - Summary Sheet for Square 17NH60 (page 3 of 3)

Schedule 16

SPECIES	Code		%	
	1st	2nd	1st	2nd
Common Grackle	H		100	100
Brown-head Cowbird			97	100
Orchard Oriole ‡			45	65
Baltimore Oriole			97	100
Purple Finch ‡			18	31
House Finch			40	97
Red Crossbill ‡			10	0
Pine Siskin ‡			2	11
American Goldfinch			94	100
House Sparrow			89	100

This list includes all species found during the Ontario Breeding Bird Atlas (1st atlas: 1981-1985, 2nd atlas: 2001-2005) in the region #5 (Long Point). Underlined species are those that you should try to add to this square. They have not yet been reported during the 2nd atlas, but were found during the 1st atlas in this square or have been reported in more than 50% of the squares in this region during the 2nd atlas so far. In the species table, "BE 2nd" and "BE 1st" are the codes for the highest breeding evidence for that species in square 17NH60 during the 2nd and 1st atlas respectively. The % columns give the percentage of squares in that region where that species was reported during the 2nd and 1st atlas (this gives an idea of the expected chance of finding that species in region #5). Rare/Colonial Species Report Forms should be completed for species marked: § (Colonial), ‡ (regionally rare), or † (provincially rare). Current as of 8/08/2008. An up-to-date version of this sheet is available from http://www.birdsontario.org/atlas/summaryform.jsp?squareID=17NH60

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Square Summary (17NH61)

#species (1st atlas)				#species (2nd atlas)				#hours		#pc done	
poss	prob	conf	total	poss	prob	conf	total	1st	2nd	road	offrd
19	12	54	85	20	23	46	89	139	258	0	16

Region summary (#5: Long Point)

Schedule 16

#squares	#sq with data		#species		#pc done	target #pc
	1st	2nd	1st	2nd		
37	37	35	176	176	1604	925

Target number of point counts in this square: 0 road side, 25 off road (11 in open wetlands, 2 in treed wetlands, 9 in deciduous forest, 3 in rock outcrops and quarries). Please try to ensure that each off-road station is located such that the entire 100m radius circle is within the prescribed habitat.

SPECIES	Code		%		SPECIES	Code		%		SPECIES	Code		%	
	1st	2nd	1st	2nd		1st	2nd	1st	2nd		1st	2nd	1st	2nd
Pied-billed Grebe		S	16	31	Red-should Hawk †			16	11	Mourning Dove	NU	NE	97	100
American Bittern	H	H	24	25	Broad-winged Hawk			43	48	Black-billed Cuckoo	FY	V	72	91
Least Bittern †	NY	S	24	17	Red-tailed Hawk	P	T	94	97	Yellow-billed Cuckoo	CF	T	48	68
Great Blue Heron §	NY	H	86	88	American Kestrel	FY		97	85	Black/Yell-billed Cuckoo			0	45
Green Heron §	NY	H	94	91	Gray Partridge			48	20	Eastern Screech-Owl			83	91
Black-crown N.-Heron † §			10	0	Ring-necked Pheasant			54	45	Great Horned Owl	H	H	89	77
Turkey Vulture	P		91	91	Ruffed Grouse			86	68	Barred Owl ‡			8	5
Canada Goose	NE	FY	94	97	Wild Turkey			13	85	Long-eared Owl ‡			10	2
Mute Swan		P	8	25	Northern Bobwhite †			2	8	North Saw-whet Owl ‡			8	2
Wood Duck	P	NY	89	97	King Rail †			5	5	Common Nighthawk			35	22
Gadwall ‡	FY		16	8	Virginia Rail	A	S	37	45	Chuck-will's-widow †			2	0
American Wigeon ‡			8	5	Sora	D	P	29	37	Whip-poor-will	S	DD	37	28
American Black Duck	H		35	28	Common Moorhen	H		21	14	Chimney Swift		D	81	80
Mallard	FY	FY	97	97	American Coot	S		16	8	Ruby-thr Hummingbird	H	NU	89	100
Blue-winged Teal	FY		78	34	Coot/Moorhen			0	0	Belted Kingfisher	NY	CF	97	94
Cinnamon Teal †			2	0	Sandhill Crane ‡		H	0	14	Red-head Woodpecker †	NY	S	81	45
Northern Shoveler ‡			5	2	Killdeer	NE	NY	100	100	Red-bell Woodpecker	T	NY	8	97
Northern Pintail ‡			8	11	Spotted Sandpiper	NE	NE	100	74	Yellow-bellied Sapsucker			37	62
Green-winged Teal ‡			0	8	Upland Sandpiper			24	8	Downy Woodpecker	FY	NY	97	100
Redhead †			10	0	Common Snipe	S	T	51	22	Hairy Woodpecker	AE	S	94	94
Lesser Scaup ‡			2	0	American Woodcock	FY	FY	89	88	Northern Flicker	FY	NY	100	100
Hooded Merganser		H	21	34	Wilson's Phalarope †			2	2	Pileated Woodpecker			64	68
Red-breast Merganser ‡			2	2	Little Gull †			2	0	Eastern Wood-Pewee	NY	NE	97	100
Ruddy Duck †			2	2	Ring-billed Gull §			10	2	Acadian Flycatcher †			8	37
Bald Eagle †		NY	2	22	Herring Gull ‡§			8	0	Alder Flycatcher			59	65
Northern Harrier	H	H	40	60	Common Tern ‡§	NE		10	0	Willow Flycatcher	S	T	89	97
Sharp-shinned Hawk			29	60	Forster's Tern † §	H		8	5	Least Flycatcher		P	81	85
Cooper's Hawk			8	65	Black Tern † §	CF	CF	13	11	Eastern Phoebe			81	97
Northern Goshawk ‡			2	11	Rock Dove	H		91	91	Gr Crested Flycatcher	CF	V	94	100

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Ontario Breeding Bird Atlas - Summary Sheet for Square 17NH61 (page 2 of 3)

Schedule 16

SPECIES	Code 1st	Code 2nd	% 1st	% 2nd	SPECIES	Code 1st	Code 2nd	% 1st	% 2nd	SPECIES	Code 1st	Code 2nd	% 1st	% 2nd
Eastern Kingbird	NE	NE	97	100	Veery		S	83	88	Worm-eating Warbler ‡		S	0	2
Loggerhead Shrike †			2	0	Hermit Thrush		A	16	22	Ovenbird	H	S	89	94
White-eyed Vireo †		S	5	5	Wood Thrush		S	86	97	North Waterthrush			56	71
Yellow-throated Vireo			70	62	American Robin	NY	NY	94	100	Louis Waterthrush †			37	22
Blue-headed Vireo			16	17	Gray Catbird	CF	CF	94	100	Kentucky Warbler †			8	2
Warbling Vireo	FY	AE	91	100	Northern Mockingbird		FY	8	37	Mourning Warbler		S	64	71
Red-eyed Vireo	A	V	94	100	Brown Thrasher	NE	P	97	94	Common Yellowthroat	CF	NY	97	100
Blue Jay	FY	FY	97	100	European Starling	NY	NY	97	100	Hooded Warbler †			18	37
American Crow	FY	P	97	100	Cedar Waxwing	NY	NB	97	97	Canada Warbler			48	40
Horned Lark	P		89	91	Blue-winged Warbler			59	65	Yellow-breast Chat †			10	2
Purple Martin	H	NE	83	54	Golden-winged Warbler			51	17	Summer Tanager ‡			0	5
Tree Swallow	AE	NY	97	100	Blue/Gold-wing Warbler			0	25	Scarlet Tanager		AE	89	97
North Rgh-wing Swallow	NY	AE	91	94	Lawrence's Warbler †			0	0	Eastern Towhee	CF	AE	97	97
Bank Swallow §	AE	AE	91	85	Brewster's Warbler †			21	8	Chipping Sparrow	CF	NY	100	100
Cliff Swallow §			54	57	Nashville Warbler			18	14	Clay-colored Sparrow ‡			5	20
Barn Swallow	AE	NY	94	100	Northern Parula ‡			2	0	Field Sparrow	CF	NY	100	94
Black-capp Chickadee	FY	CF	97	100	Yellow Warbler	NE	NY	94	100	Vesper Sparrow			86	91
Tufted Titmouse †			0	17	Chestn-sided Warbler		T	70	80	Savannah Sparrow			89	94
Red-breast Nuthatch	H		54	62	Magnolia Warbler			8	42	Grasshopper Sparrow			10	31
White-breast Nuthatch	P	P	91	97	Black-thr Blue Warbler			0	28	Song Sparrow	CF	CF	97	100
Brown Creeper			48	57	Yellow-rumped Warbler ‡			10	17	Swamp Sparrow	CF	AE	89	91
Carolina Wren		S	2	62	Black-thr Green Warbler	S	S	24	51	White-throat Sparrow			16	25
House Wren	NY	NE	100	100	Blackburnian Warbler			27	31	Dark-eyed Junco			10	8
Winter Wren			29	37	Pine Warbler	H		54	82	Northern Cardinal	NU	NE	94	100
Sedge Wren ‡			5	5	Prairie Warbler †			5	5	Rose-breast Grosbeak		D	86	100
Marsh Wren	N	A	32	22	Cerulean Warbler †			40	31	Indigo Bunting	S	AE	94	100
Golden-crown Kinglet			21	17	Black-white Warbler			40	60	Bobolink			91	94
Blue-gr Gnatcatcher	FY	V	75	80	American Redstart	NY	A	86	91	Red-wing Blackbird	NE	NY	97	100
Eastern Bluebird	CF	P	51	88	Prothonotary Warbler †	NY		13	8	Eastern Meadowlark	P		97	88

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Ontario Breeding Bird Atlas - Summary Sheet for Square 17NH61 (page 3 of 3)

Schedule 16

SPECIES	Code		%	
	1st	2nd	1st	2nd
Western Meadowlark ‡			2	0
Common Grackle	CF	FY	100	100
Brown-head Cowbird	FY	NE	97	100
Orchard Oriole ‡		AE	45	65
Baltimore Oriole	NY	NY	97	100
Purple Finch ‡			18	31
House Finch			40	97
Red Crossbill ‡			10	0
Pine Siskin ‡			2	11
American Goldfinch	S	D	94	100
House Sparrow		P	89	100

This list includes all species found during the Ontario Breeding Bird Atlas (1st atlas: 1981-1985, 2nd atlas: 2001-2005) in the region #5 (Long Point). Underlined species are those that you should try to add to this square. They have not yet been reported during the 2nd atlas, but were found during the 1st atlas in this square or have been reported in more than 50% of the squares in this region during the 2nd atlas so far. In the species table, "BE 2nd" and "BE 1st" are the codes for the highest breeding evidence for that species in square 17NH61 during the 2nd and 1st atlas respectively. The % columns give the percentage of squares in that region where that species was reported during the 2nd and 1st atlas (this gives an idea of the expected chance of finding that species in region #5). Rare/Colonial Species Report Forms should be completed for species marked: § (Colonial), ‡ (regionally rare), or † (provincially rare). Current as of 8/08/2008. An up-to-date version of this sheet is available from http://www.birdsontario.org/atlas/summaryform.jsp?squareID=17NH61

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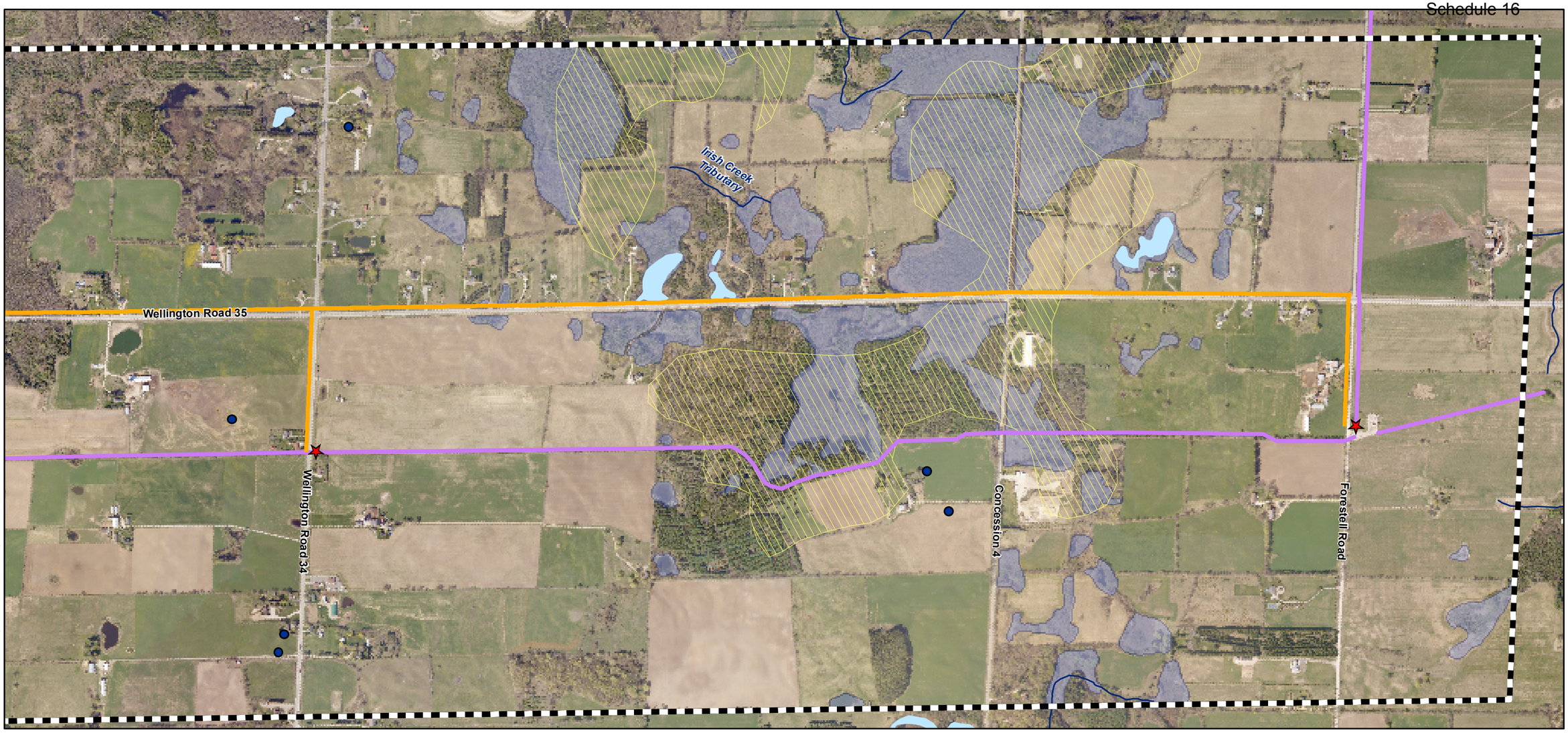
Appendix D

Photomosaics



File: W:\active\60960383\graphics\GIS\MXD\MitigationMosaics\60960383_M_02.mxd

Source: LIDS, 2006; GRCA, 2008; MOE, 2005; Union Gas, 2008.

Construction within road allowance. Potential impedance to vehicle traffic. Refer to Environmental Report Section 6.3.7 Existing Linear Facilities. Construction within 100 m of a residence or business. Potential disturbance to residences and businesses. Refer to Environmental Report Section 6.3.1 Municipal Structure and 6.3.2 Population and Institutional Facilities.

Crossing of Wellington Road 34. Consult with County of Wellington to discuss crossing method and timing of crossing. Refer to Environmental Report Section 6.3.7 Existing Linear Facilities.

Construction in close proximity to Cranberry – Oil Well Bog Complex. Potential disturbance to Provincially Significant Wetland. Refer to Environmental Report Section 6.2.3 Wetlands.

Crossing of pond associated with Irish Creek. Consult with Grand River Conservation Authority and other agencies as required to determine crossing method. Refer to Environmental Report Section 6.1.7 Hydrology and 6.2.1 Watercourses and Fisheries.

Crossing of Concession 2. Consult with Township of Puslinch to discuss crossing method and timing of crossing. Refer to Environmental Report Section 6.3.7 Existing Linear Facilities.

Construction in close proximity Oil Well Bog – Little Tract. Potential disturbance to Life Science Area of Natural and Scientific Interest. Refer to Environmental Report Section 6.2.6 Natural Areas.

Crossing of Forestell Road. Consult with City of Guelph to discuss crossing method and timing of crossing. Refer to Environmental Report Section 6.3.7 Existing Linear Facilities. Crossing of Wellington Road 35. Consult with County of Wellington to discuss crossing method and timing of crossing. Refer to Environmental Report Section 6.3.7 Existing Linear Facilities. Construction adjacent to existing Union Gas natural gas pipeline. Safety and distance requirements should be determined prior to construction. Refer to Environmental Report Section 6.3.7 Existing Linear Facilities.

Study Area
Potential End Point
Preferred Route
Existing Pipelines
Watercourses
Provincially Significant Wetland
Life Science ANSI
Water Wells*

* Water well information was obtained from Ministry of the Environment data (2005). There may be other water wells within the study area.

Stantec

0 200 Meters

1:12,000

PREPARED FOR:

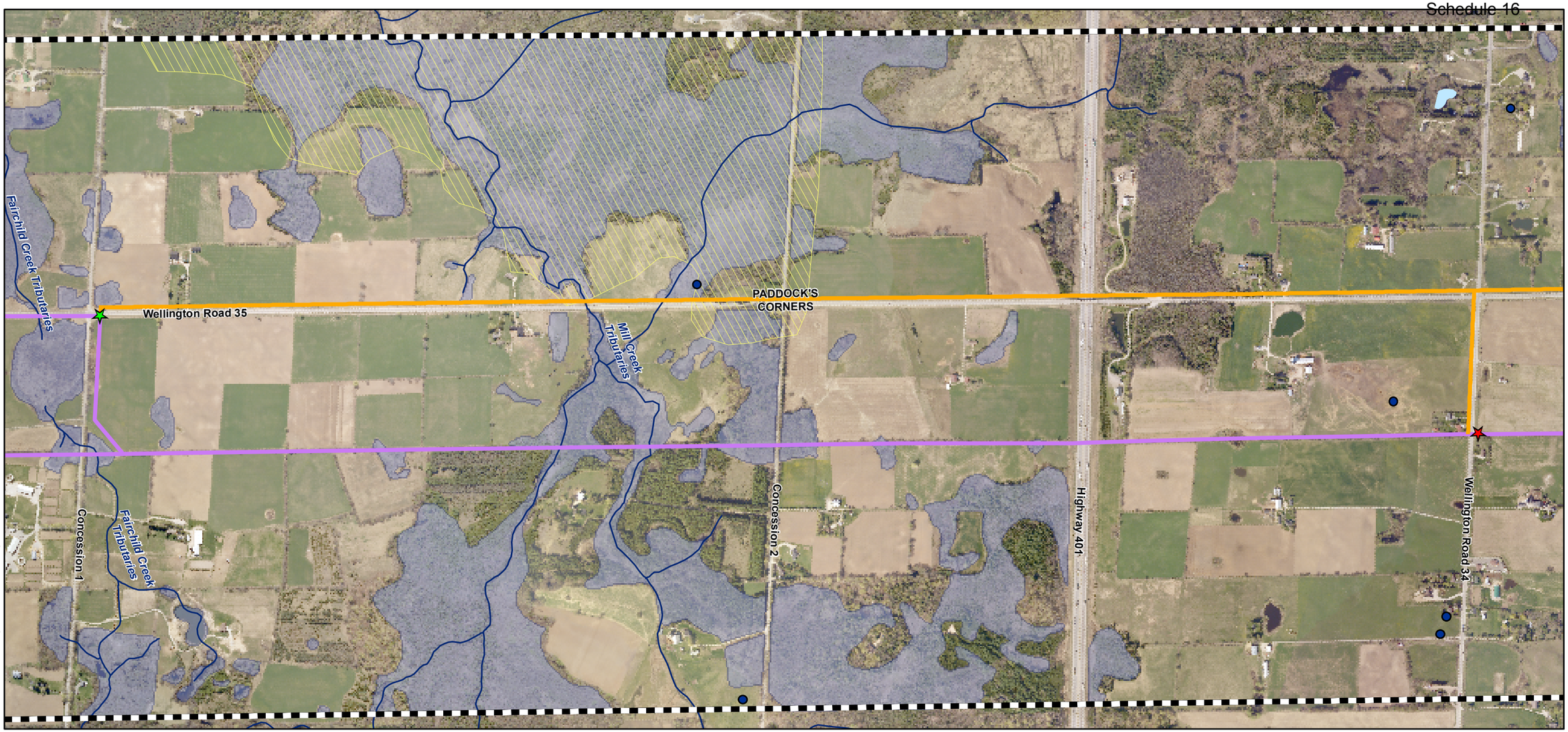
UNION GAS LTD.
GUELPH REINFORCEMENT PHASE II

FIGURE NO. D-1 Page 2 of 2

MITIGATION

Initiated: July, 2008.

Revised: September, 2008



File: W:\active\60960383\graphics\GIS\MXD\MitigationMosaics\60960383_M_01.mxd

Source: LIDS, 2006; GRCA, 2008; MOE, 2005; Union Gas, 2008.

Construction within road allowance. Potential impedance to vehicle traffic. Refer to Environmental Report Section 6.3.7 Existing Linear Facilities.
Construction within 100 m of a residence or business. Potential disturbance to residences and businesses. Refer to Environmental Report Section 6.3.1 Municipal Structure and 6.3.2 Population and Institutional Facilities.

Construction in close proximity to Fairchild Creek Headwaters Wetland Complex. Potential disturbance to Provincially Significant Wetland. Refer to Environmental Report Section 6.2.3 Wetlands.

Crossing of Tributary of Mill Creek. Consult with Grand River Conservation Authority and other agencies as required to determine crossing method. Refer to Environmental Report Section 6.1.7 Hydrology and 6.2.1 Watercourses and Fisheries.

Construction in close proximity to Mill Creek Wetland. Potential disturbance to Provincially Significant Wetland. Refer to Environmental Report Section 6.2.3 Wetlands.

Construction within 100 m of water well. Potential disturbance to water well. Consult with landowner and implement Union Gas's Standard Water Well Monitoring Program. Refer to Environmental Report Section 6.1.7 Hydrology and 6.3.1 Municipal Structure.

Crossing of Concession 2. Consult with Township of Puslinch to discuss crossing method and timing of crossing. Refer to Environmental Report Section 6.3.7 Existing Linear Facilities.

Construction in close proximity to Galt (Mill) Creek and Forest. Potential disturbance to Life Science Area of Natural and Scientific Interest. Refer to Environmental Report Section 6.2.6 Natural Areas.

Crossing of Tributary of Mill Creek. Consult with Grand River Conservation Authority and other agencies as required to determine crossing method. Refer to Environmental Report Section 6.1.7 Hydrology and 6.2.1 Watercourses and Fisheries.

Crossing of Highway 401. Consult with Province of Ontario to discuss crossing method and timing of crossing. Refer to Environmental Report Section 6.3.7 Existing Linear Facilities.

Crossing of Wellington Road 35. Consult with County of Wellington to discuss crossing method and timing of crossing. Refer to Environmental Report Section 6.3.7 Existing Linear Facilities.

Stantec

0 200
Meters
1:12,000

- Study Area
- Start Point
- Potential End Point
- Preferred Route
- Existing Pipelines
- Watercourses
- Provincially Significant Wetland
- Life Science ANSI
- Water Wells*

* Water well information was obtained from Ministry of the Environment data (2005). There may be other water wells within the study area.

PREPARED FOR:
UNION GAS LTD.
GUELPH REINFORCEMENT PHASE II

FIGURE NO. D-1 Page 1 of 2

MITIGATION

Initiated: July, 2008.
Revised: September, 2008

Appendix E

Archaeological Assessment

The Stage 1 Archaeological Assessment of the Proposed NPS 12 Guelph Reinforcement Pipeline, Phase II, Township of Puslinch, Wellington County, Ontario

Submitted to

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and

The Ontario Ministry of Culture

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CIF #P053-143-2008; Corporate Project Number 08-45

July 2008

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Project Personnel

Consulting Archaeologist	Dana R. Poulton
Report Preparation	Dana R. Poulton James A. Caldwell
Draughting	Christine F. Dodd

Acknowledgments

This assessment was facilitated by the following individuals and their agencies:

- ***Melanie Adamson***, B.Sc., CEPIT, Stantec Consulting Ltd.; and
- ***Robert von Bitter***, Archaeological Data Coordinator, Heritage and Libraries Branch, Culture Services Unit, Ministry of Culture.

EXECUTIVE SUMMARY

In April 2008 Stantec Consulting Ltd. contracted D.R. Poulton & Associates Inc. to carry out an archaeological assessment of the proposed Union Gas Limited (Union Gas) NPS 12 Guelph Reinforcement Pipeline, Phase II. The proposed pipeline is to reinforce the existing NPS 12 Guelph Reinforcement Pipeline. Figure 1 shows the location of the proposed development. This report details the rationale, methods and results of the archaeological assessment.

The proposed undertaking will involve the construction and connection of an NPS 12 natural gas pipeline in the Township of Puslinch, County of Wellington, Ontario. The pipeline is intended to meet the growing demand for clean power by expanding the existing Guelph Line natural gas pipeline system.

Two alternative routes have been identified for the proposed pipeline. Both are located in the Township of Puslinch; they have a combined length of 14.7 kilometres. The northern end of the proposed pipeline will connect with the proposed pipeline at an existing Union Gas station located on Forestell Road, 400 m east of Downey Road. The southern end of the proposed pipeline will connect to the proposed pipeline in one of two locations, depending on the alignment selected. The first is located at the intersection of Wellington Road 35 and Concession 1; the second is located on Concession 1 between Lots 16 and 17.

The present archaeological assessment consisted of a background study. This is a Stage 1 level of assessment as defined in the 1993 technical archaeological guidelines formulated by the Ontario Ministry of Culture, Tourism and Recreation (MCTR). There were two objectives to the archaeological assessment of the proposed pipeline. The first was to determine the presence and nature of known archaeological sites in the study area. The second was to evaluate known and potential archaeological planning concerns for the two alternative routes.

The background study determined that two archaeological sites have been registered within the study area containing the two alternative routes. They consist of a Euro-Canadian historic homestead and a prehistoric findspot. The study also indicated that most of the lands in question had at least a moderate potential for as-yet undiscovered prehistoric and historic archaeological resources.

In order to address the potential for archaeological remains, it is recommended that a Stage 2 archaeological survey be carried out once the preferred route has been selected. The survey will effect a field-based assessment of archaeological potential. It will also effect a systematic examination of any lands that are subject to impact from the undertaking and retain a potential for archaeological remains.

1.0 INTRODUCTION

In April 2008 Stantec Consulting Ltd. contracted D.R. Poulton & Associates Inc. to carry out an archaeological assessment of Phase II of the proposed Union Gas Limited NPS 12 Guelph Reinforcement Pipeline. Two alternative routes have been identified for the proposed pipeline; they are contained within a single study area. This report details the rationale, methods and results of the archaeological assessment of the proposed pipeline.

The archaeological assessment consisted of a background study. It is a Stage 1 level of assessment as defined in the 1993 technical archaeological guidelines formulated by the Ontario Ministry of Culture, Tourism and Recreation (MCTR).

There were two objectives to the archaeological assessment of the proposed pipeline. The first was to determine the presence and nature of known archaeological sites in the study area. The second was to evaluate known and potential archaeological planning concerns for the two alternative routes.

The archaeological assessment was carried out under Archaeological Consulting Licence # P053, issued by the Ontario Ministry of Culture to Christine Dodd of D.R. Poulton & Associates. The firm submitted a Contract Information Form for the assessment to the Ministry of Culture on April 25, 2008. Confirmation of receipt of the form was received from the Ministry on April 28, 2008. It designated the project as CIF # P053-143-2008.

The assessment was conducted in accordance with the provisions of the Ontario Heritage Act (Government of Ontario 1990a) and the Ontario Environmental Assessment Act (Government of Ontario 1990b), and with the technical guidelines for archaeological assessments formulated by the Ministry of Culture, Tourism, and Recreation (now Ministry of Culture) (MCTR 1993).

The records pertaining to this project are currently housed in the corporate offices of D.R. Poulton & Associates Inc. However, in the event the opportunity arises, the project archive will be transferred to a suitable long-term repository.

2.0 LOCATION AND DESCRIPTION

The purpose of the proposed pipeline is to reinforce the existing NPS 12 Guelph Line by constructing a loop along one of two proposed alignments. This undertaking will involve the construction and connection of an NPS 12 natural gas pipeline in the Township of Puslinch, Ontario (Figure 1). The pipeline will meet the growing demand for clean power by expanding the existing Guelph Line natural gas pipeline system.

The study area that incorporates both proposed alternative alignments is located in the County of Wellington, Ontario. It encompasses an area from approximately 300 m north of Forestell Road in the north to the division of Township of Puslinch Lots 18 and 19 in the east, to the middle of Concession 1 in the south, and to the division between Township of Puslinch Lots 13 and 14 to the west.

The proposed pipeline will extend from an existing natural gas pipeline that runs along Concession 1 between Wellington Road 35 and the border of Lots 16 and 17 to an existing Union Gas station located on Forestell Road approximately 400 metres east of Downey Road. As stated in Section 1.0 of this report, two alternative routes are being considered for the proposed pipeline. They have a combined length in the order of 14.7 kilometres.

The two alternative routes involved in the Guelph Reinforcement Phase II pipeline are located in the Guelph Drumlin Fields physiographic region (Chapman and Putnam, 1984:137). The Guelph Drumlin field occupies an area of 320 square miles including part of Wellington County. Chapman and Putnam estimate that 300 drumlins, of various sizes, are present within the physiographic region.

The drumlins are widely spaced and the till in these drumlins is loamy and calcareous, and was derived mostly from dolostone of the Amabel Formation. In addition, the till contains fragments of the underlying red shale (Chapman and Putnam 1985: 137).

Both alternative routes for the proposed pipeline crosses Mill Creek. They also cross an unnamed tributary of Mill Creek.

Figure 1 illustrates the location of the two routes. Descriptions of the individual alternative routes follow.

2.1 Road Allowance Alternative Route

This alternative route as has a total length of approximately 7.7 kilometres; it is the longest of the two alternative routes. The southern terminus of this route is at the intersection of Concession 1 and Wellington Road 35. The Road Allowance Alternative route follows Wellington Road 35 north to the intersection of Wellington Road 35 and Forestall Road. It then follows Forestell Road east for 400 metres to the existing Union Gas station. There is also a short 400-metre long tie-in; it follows Wellington Road 34 to the east from the intersection of that road and Wellington Road 35. Both the main branch and the tie-in of the proposed pipeline in this route are to placed within existing road allowances.

2.2 Cross Country Alternative Route

This alternative has a total length of approximately 6.9 kilometres; it is the shorter of the two alternative routes. The Cross Country Alternative begins at the existing pipeline on the border of Lots 16 and 17 north of Concession 1. It then travels north parallel to the existing Union Gas pipeline easement between Lots 16 and 17 until it reaches the existing Union Gas station on Forestell Road 400 metres east of Downey Road.

3.0 STAGE 1: BACKGROUND RESEARCH

3.1 Methods

The initial element of an archaeological assessment of a proposed development undertaking consists of background research. This is defined as a Stage 1 level of assessment in the archaeological guidelines formulated by the Province of Ontario (MCTR 1993). Background research is carried out in order to amass all of the readily available information on previous archaeological surveys in the area;

- determine the location of any registered and unregistered sites within and adjacent to the property;
- identify areas of archaeological potential which represent concerns for Stage 2 field survey; and
- develop an historical framework for assigning levels of potential significance to any new sites discovered during fieldwork.

The framework for assigning levels of potential archaeological significance is drawn from provincial environmental assessment guidelines (Weiler 1980). The information includes the identification and evaluation of any feature that has one or more of the following attributes:

> *... it has the potential through archaeological exploration, survey or fieldwork to provide answers to substantive questions (i.e. relate to particular times and places) about events and processes that occurred in the past and therefore add to our knowledge and appreciation of history;*
>
> *it has the potential through archaeological exploration, survey and fieldwork to contribute to testing the validity of general anthropological principles, cultural change and ecological adaptation, and therefore to the understanding and appreciation of our man-made heritage; or*
>
> *it is probable that various technical, methodological, and theoretical advances are likely to occur during archaeological investigation of a feature, alone or in association with other features, and therefore contribute to the development of better scientific means of understanding and appreciating our man-made heritage (Weiler 1980:8).*

For purposes of context, the Stage 1 background study examined data for the study area containing the two alternative routes for the proposed pipeline. Two collective sources were examined in the course of the background research. One was the Archaeological Sites Database of the Ministry of Culture; it houses site record forms for registered sites as well as published and unpublished reports on past surveys, assessments, and excavations. At the request of the consultant, data on registered sites within the study area were provided by Robert von Bitter, Archaeological Data Coordinator for that Ministry.

The second collective source for the Stage 1 study was the library/archives of D.R. Poulton & Associates Inc. It includes an extensive inventory of published and unpublished reports, as well as inventories of both registered and unregistered archaeological sites in the area. Data on file with the firm include the reports on the previous Stage 1 and 2 archaeological assessment of the Guelph Reinforcement Pipeline (DPA 2003, 2004).

The above sources were supplemented by reprints of the Historic Atlas of Wellington County (Walker & Miles 1877) and the Historical Atlases of Wellington County (Historical Atlas Publishing Co. 1906). They include details on the status of land use and development in the area of the proposed pipeline as of the third quarter of the 19th century and the first decade of the 20th century. For reference purposes a facsimile of the 1877 Historic Atlas map is reproduced here as Figure 2. A cultural chronology of the region is presented in Table 1.

3.2 Results

The results of the Stage 1 study may be divided into three separate but related categories: information on past archaeological investigation and known sites in the vicinity of the study area; information of the history of 19th century land use in the area; and data on the known or potential archaeological concerns in the area. They will be considered in turn for both the preferred and alternative routes in the following sections (Section 4.0 and 5.0 respectively).

The background study determined that only two archaeological sites have been recorded within the study area containing the two alternative routes for the proposed pipeline. They are described below.

One of the registered sites is designated AiHb-290. It is a Euro-Canadian historic homestead represented by a scatter of historic period artifacts in a cultivated field. While this site is within the study area for the proposed pipeline, it is located northeast of the northern terminus of the proposed pipeline; as such, it is not a potential planning concern for the proposed pipeline.

The other registered site is an isolated First Nations findspot designated AiHb-293. It is located 200 metres north of Forestell Road, northwest of the intersection of Forestell Road and Downey Road. The latter road forms the northeastern limit of the Road Allowance route for the proposed Guelph Reinforcement Pipeline. The location of this site does not directly impact the proposal for the Road Allowance Alignment Route. However, its presence may indicate the existence of as-yet unknown prehistoric sites in the immediate vicinity.

Table 1 Cultural Chronology for Southwestern Ontario

PERIOD	GROUP	TIME RANGE	COMMENTS
PALEO-INDIAN			
	Fluted Point Hi-Lo	9500 - 8500 B.C. 8300 - 7900 B.C.	Big game hunters; small nomadic groups
ARCHAIC			
Early	Nettling	7700-6900 B.C.	Nomadic hunters and gatherers.
	Bifurcate Based	6800 - 6000 B.C.	
Middle	Laurentian	3500 - 2500 B.C.	Transition to territorial settlements.
Late	Lamoka	2500 - 1800 B.C.	Polished/ground stone tools
	Broad Point	1800 - 1400 B.C.	
	Crawford Knoll	1500 - 500 B.C.	
	Glacial Kame	ca. 1000 B.C.	Burial ceremonialism
WOODLAND			
Early	Meadowood Red Ochre	1000 - 400 B.C. 1000 - 500 B.C.	Introduction of pottery
Middle	Saugeen Princess Point	400 B.C. - 500 A.D. 500 - 800 A.D.	Long distance trade networks. Incipient horticulture
Late	Glen Meyer	800 - 1280 A.D.	Transition to village life and agriculture
	Uren	1280 - 1330 A.D.	Large village sites
	Middleport	1330 - 1400 A.D.	Widespread stylistic horizon
	Neutral	1400 - 1650 A.D.	Tribal differentiation and warfare
HISTORIC			
Early	Odawa, Ojibwa, Mississauga	1700 - 1875 A.D.	Social displacement
Late	Euro-Canadian	1800 A.D. - present	European settlement

4.0 ROAD ALLOWANCE ALTERNATIVE ROUTE

As stated in Section 3.2 of this report, the background research confirmed that no archaeological sites had been registered within or in close proximity to the Road Allowance Alternate Route prior to this assessment.

Puslinch Township, with the exception of the Gore, was originally a clergy reserve. The Gore of Puslinch was largely given by the government to those who had claims for military service. In 1929 Puslinch Township had 126 inhabitants. The first blacksmith shop was established on Lot 19, Concession 1. Interestingly, the blacksmith shop used hemlock bark rather than coal.

Reference to the Illustrated Historic Atlases of Wellington County (Walker & Miles 1877, Historical Atlas Publishing Co. 1906) show that the pipeline involved in the proposed Guelph Reinforcement Pipeline was under the ownership of several different individuals in the late 19th and early 20th centuries. Table 2 lists information on their respective landholdings in 1877.

The 1877 Historic Atlas lists G. Paddock as the owner of the part of the southern half of Lot 16, Concession 1 of Puslinch Township. This property is illustrated as having a homestead adjacent to the historic road that is currently known as Wellington Road 35. The properties of J. Gilchrist, Lot 15, north half of Concession 2, and P. Moran, Lot 15, north half of Concession 3, similarly had homesteads situated adjacent to the historic Wellington Road 35. A store was located on the northwest corner of Wellington Road 35 and Forestell Road on the property of W. Strachan, Lot 15, north half of Concession 4. A schoolhouse was located across the street, on the southeast corner of the intersection, on Lot 16, south half of Concession 4; it was owned by W. and E. Rame.

The only additional information from the 1906 Historic Atlas is the homestead of Mrs. Geo. Paddock. This homestead is located in the northeast corner of the north half of Lot 15, Concession 1.

A log church was constructed on the front half of Lot 15, Concession 1, on lands donated to the Presbyterian Church for that purpose by Neil McPhatter (Historical Atlas of Wellington County, 1906: 7). Construction of the church was complete in 1840. For fourteen years, up until the closing of the church (due to a "disruption"), the pastor was William Meldrum.

Rev. Meldrum's biography in the 1906 Historic Atlas further states that in 1852 he and his family moved to Vaughan. It is unclear why they moved, or whether or not it was the result of or the cause of the "disruption" that ended the log church. Further confusing the issue is the biography of Captain Thomas Paddock, who purchased the front and rear of Lot 16, Concession 1 from Alexander McNaughton. Upon his arrival in Puslinch, Captain Paddock donated some lumber he owned in Galt for the completion of the log church on Lot 16, Concession 1. Since the location of the log church is not indicated on either the 1877 Atlas or the 1906 Atlas, its exact location cannot be pinpointed.

The historical atlas does not illustrate any other homesteads or historical resources in close proximity to the Road Allowance Alternative Route. However, that does not negate the possibility that structures were located within or in close proximity to this route.

Table 2 Road Allowance Alternative Route:
Summary Data on Late 19th Century Landownership

Owner	Year	Lot	Concession
J. Paddock	1877	S. Half 15	1
G. Paddock	1877	S. Half 16	1
R. Paddock	1877	Part of N. Half 15	1
G. Paddock	1877	Part of N. Half 15	1
R. Paddock	1877	N. Half 16	1
T. Cooper	1877	S. Half 15	2
J. McCormack	1877	S. Half 16	2
J. Gilchrist	1877	N. Half 15	2
A. Gilchrist	1877	N. Half 16	2
A. McCormick	1877	S. Half 15	3
J. McCormick	1877	S. Half 16	3
P. Moran	1877	N. Half 15	3
A. Moran	1877	N. Half 16	3
M. Lynch	1877	S. Half 15	4
W. & E. Rame	1877	S. Half 16	4
W. Strachan	1877	N. Half 15	4
R. Maddock	1877	N. Half 16	4

5.0 CROSS COUNTRY ALTERNATIVE ROUTE

As stated in Section 3.2 of this report, the background research confirmed that no archaeological sites had been registered within the Cross Country Alternate Route prior to this assessment. The Stage 1 background study did demonstrate that one past archaeological study had been conducted within the study area for the proposed Guelph Reinforcement Pipeline. It was the 2003-2004 Stage 1-2 archaeological assessment of the proposed Guelph Reinforcement NPS 12 Union Gas Pipeline (DPA 2003, 2004). It included a test pit survey of the north portion of that proposed pipeline from Concession 1 northeast to the tie-in with the existing pipeline on the border of Lots 16 and 17. The latter forms the southern limit of the Cross Country Alternate Route.

As previously stated, Puslinch Township, with the exception of the Gore, was originally a clergy reserve. The Gore of Puslinch was largely given by the government to those who had claims for military service. In 1829, Puslinch Township had 126 inhabitants. The first blacksmith shop was established on Lot 19, Concession 1.

Reference to the Illustrated Historic Atlases of Wellington County (Walker & Miles 1877, Historical Atlas Publishing Co. 1906) show that the pipeline involved in the proposed Guelph Reinforcement Pipeline was under the ownership of several different individuals in the late 19th and early 20th centuries. Table 3 lists information on their respective landholdings for 1877.

Table 3 Cross Country Alternative Route:
Summary Data on Late 19th Century Landownership

Owner	Year	Lot	Concession
R. Bond	1877	S. Half 17	1
G. Paddock	1877	S. Half 16	1
R. Paddock	1877	N. Half 16	1
J. Martin	1877	N. Half 17	1
A. Fraser	1877	S. Half 17	2
J. McCormack	1877	S. Half 16	2
H. McCaig	1877	N. Half 17	2
A. Gilchrist	1877	N. Half 16	2
Mrs J. MCaig	1877	S. Half 17	3
J. McCormick	1877	S. Half 16	3
Mrs Kinsella	1877	N. Half 17	3
A. Moran	1877	N. Half 16	3
A. Gerrie	1877	S. Half 17	4
W. & E. Rame	1877	S. Half 16	4
B. Parker	1877	N. Half 17	4
R. Maddock	1877	N. Half 16	4

The only homesteads in close proximity to the proposed Cross Country Alignment are found in the 1877 Historic Atlas. Three of them are located on the west side of the alignment in Lot 16. They are on properties owned by J. McCormack, A. Gilchrist and J. McCormick in the southern half of Concession 2, the northern half of Concession 2, and the southern half of Concession 3, respectively. The other homestead close to the alignment was located in the northeast corner of the north half of Lot 17, Concession 3, on the property of Mrs. Kinsella. No homesteads in close proximity to the proposed alignment are indicated on the 1906 Historic Atlas map.

As stated in Section 4.0 of this report, a log church was constructed for the Presbyterians of Puslinch somewhere on Concession 1. There remains the possibility that this church was located on the southern half of Lot 16, Concession 1, which was then owned by Captain Thomas Paddock.

The historical atlas does not illustrate any other homesteads or historical resources in close proximity to the Road Allowance Alternative Route. However, that does not negate the possibility that structures were located within the preferred route.

6.0 EVALUATION OF ALTERNATIVE ROUTES

As detailed in this report, the background research determined that no archaeological sites have been documented within the preferred or alternative routes for the Guelph Reinforcement Pipeline Project, Phase II. Accordingly, archaeological planning concerns are limited to the potential for as-yet undiscovered sites.

The potential for prehistoric and historic archaeological resources is generally evaluated on the basis of both known sites in the area and on the nature of the human adaptations to the physiography, soils and drainage of the area. Another important consideration is the degree to which part construction or earthmoving may have degraded or eradicated the inherent potential for archaeological sites.

Past investigations in the region indicate that potential archaeological remains in the study area could span the period of human existence in southern Ontario, from ca. 9500 B.C. onwards. The inherent potential for prehistoric and historic native sites in the area is derived in part from the fact that the lands in question consist of knolls, ridges and other well drained lands, suitable for native occupation and agriculture and the proximity of Mill Creek, which would have provided reliable sources of drinking water. The presence of a findspot northwest of the intersection of Forestell Road and Downey Road may indicate the presence of as-yet unknown prehistoric archaeological sites in that area.

The potential for 19th century Euro-Canadian historic archaeological planning concerns in the study area may be defined with reference to documented features in the 19th century landscape. Historic research summarized above indicates that the lands transacted by the proposed pipeline were settled as early as 1829. That fact generally indicates that the study area has at least a moderate potential for historic archaeological resources.

6.1 Road Allowance Alternative Route

The past impacts from adjacent road construction have to some extent undoubtedly decreased the inherent potential for extant archaeological remains for the Road Allowance Alternative Route. However, experience indicates that at least some segments of this route will have suffered only limited or partial impact from past construction. Another important consideration is that the Road allowance follows the historic road network to which 19th century farmsteads and commercial and institutional structures were oriented. \\

All things considered, the Road Allowance route is considered to have at least some potential for archaeological remains. As such, it would warrant a field-based assessment to confirm the presence or absence of significant archaeological resources, if it were to be confirmed as the preferred route for the proposed Guelph Reinforcement Pipeline.

6.2 Cross Country Alternative Route

For the Cross Country Alternative Route, the fact that the alignment parallels the existing NPS 12 Guelph Line indicates that it may have undergone some previous disturbance from past pipeline construction. However, experience shows that significant archaeological sites can and do survive directly adjacent to existing pipelines. In consequence, all of the length of the Cross Country route is considered to have a least a moderate potential for archaeological remains. As such, this route would warrant a field-based assessment if it were to be confirmed as the preferred route for the proposed Guelph Reinforcement Pipeline.

7.0 RECOMMENDATIONS

As detailed in Section 3.2 of this report, the Stage 1 background study determined that most of the lands involved in the Road Allowance and Cross Country Alternative Route for the proposed Guelph Reinforcement Pipeline have at least a moderate potential for as-yet undiscovered archaeological remains. In order to address that potential, it is recommended that a Stage 2 archaeological survey be carried out once the preferred route has been selected.

The survey will effect a field-based assessment of the archaeological potential of the proposed pipeline route. It will also effect a systematic examination of any lands that are subject to impact from the undertaking and retain a potential for archaeological remains.

The purpose of the Stage 2 survey will be to confirm the presence or absence of archaeological resources that could represent potential constraints for the proposed pipeline construction. In the event that any sites are discovered that may represent significant planning concerns, it is also recommended that measures for mitigating the concern be implemented. Options include preservation by avoidance or mitigation by salvage excavation in advance of development.

The above conclude the site-specific and property-specific recommendations of this report. Nevertheless, it should be emphasized that no archaeological survey can be considered to totally negate the potential for deeply buried cultural remains, including human burials. In recognition of that fact, the archaeological assessment technical guidelines formulated by the Province of Ontario require that all reports on archaeological assessments include recommendations to address the possibility that deeply buried remains may be encountered during construction (MCTR 1993:12).

In accordance with the above, it is recommended that archaeological staff of the Ontario Ministry of Culture be notified immediately if any deeply buried archaeological remains should be discovered during earthmoving or construction within the HCBPD. It is similarly recommended that in the event that human remains should be encountered, the proponent immediately contact Shari Prowse, Archaeological Review Officer, Ontario Ministry of Culture (519 675-6898) and Michael D'Mello, Registrar of the Cemeteries Regulation Unit of the Ontario Ministry of Government Services (416 326-8404).

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Appendix F

DFO Endorsed Sediment Control Plan

Generic Sediment Control Plan – Dry Flume Crossings

This plan sets out the measures that will be taken by Union Gas Limited (company) and its contractors to control downstream sediment to the lowest level practically achievable during the construction of dry flume type crossings. The conditions and techniques set out on this plan are to be followed unless approved otherwise by the Department of Fisheries and Oceans (DFO).

General Measures

The company must use materials, construction practices, mitigation techniques and monitoring of operations at every water crossing in order to prevent the unauthorized harmful alteration, disruption or destruction of fish habitat or the impairment of water quality. The following requirements apply to any permanent or intermittent waterbody (stream, river, pond) and areas adjacent to it.

* The company will adhere to all permits and approvals of federal and provincial agencies related to watercourse crossings.
* The company will notify the appropriate federal or provincial agencies prior to commencement of a watercourse crossing in accordance with regulatory permit conditions.
* In–stream work will occur during the appropriate time windows for the geographic region and for the fish species present unless otherwise permitted by the appropriate agencies.
* Prior to removal of the low vegetative cover, effective mitigation techniques for erosion and sediment control must be in place to protect water quality. Limit the areal extent of disturbance to the minimum needed for construction and delay grubbing to immediately prior to grading operations.
* All watercourses will require a minimal disturbance zone (MDZ) to be clearly marked with flagging prior to the commencement of clearing activities or any construction activity near the waterbody. This flagging will be set back a minimum of 5m from the waterbody and will be based on site specific conditions. Extra work area required at watercourse crossing will be situated away from the waterbody outside of the minimal disturbance zone (MDZ).
* Materials removed or stockpiled during construction (e.g., excavated soil, backfill material) must be deposited in a manner to ensure sediment does not enter a waterbody. Appropriate erosion and sediment controls (e.g. revegetation, vegetated buffer strips, drainage control, sediment settling devices, and sediment fence or other appropriate mitigation measures) will be installed around spoil or stockpiles, to prevent sediment from stockpile runoff from entering a watercourse.
* All vehicles, machinery and other construction equipment shall not enter the water. There must be no fording of any stream.
* Except during construction of the crossing, the company will not obstruct any watercourse so as to impede the free movement of fish.
* Flow shall be maintained at all times downstream of the watercrossing.
* All exposed soil must be stablized (e.g. graded to a stable slope and erosion control measures implemented) as quickly as possible to prevent erosion.
* The company is to adhere to the Generic Sediment Control Plan For Temporary Vehicle Crossings.
* All required materials (e.g., silt fencing, filter cloth, polyethylene liners, granular material, rip rap, dam materials) and installation equipment (e.g., pipe, flumes, pumps, pump hoses, generators, spares, energy dissipaters) will be on–site and in good working order prior to construction.
* Prior to commencing watercourse crossings, local weather stations will be monitored to determine whether any precipitation is forcasted. In–stream activity will be delayed if flows are in flood stage and until weather conditions are favourable.
* Water intakes used in fish bearing waters will be screened in accordance with the DFO Freshwater Intake Fish Screening Guidelines (1995).
* Fish recovery and transfer will be conducted prior to and during the isolation of flow and in accordance with permit regulations. See detailed construction sequence for timing of fish recovery operations.
* In–stream activities in all watercourses (e.g., trenching, pipe installation, backfilling) will be completed in as short a time as possible to minimize disturbance to water quality, fish and fish habitat.
* In situations where the crossing can be completed in one day, in–stream excavation will begin in the early morning to allow for same day installation.
* Refueling and lubrication of equipment will be conducted in areas that will allow any accidental spill of deleterious substance to be disposed of in an approved location before it reaches any waterbody. Appropriate spill prevention kits shall be readily available on site.
* The area around water crossings is to be regularly monitored and if erosion problems develop, immediate action is to be taken with appropriate treatments and completed as quickly as possible. Accumulated sediment is to be removed regularly.
* Revegetation must be completed as quickly as possible. Revegetate any disturbed areas by planting and seeding preferably native trees, shrubs or grasses and cover such areas with mulch or erosion control matting to prevent soil erosion and to help seeds germinate.
* The company will be held responsible for implementation of this plan.
* All use of silt fence, rock check dams and dewatering traps shall be constructed/installed in accordance to the most up to date company specifications and drawings. Where these mitigation measures are not sufficient to prevent sediment from entering the waterbody, additional mitigation measures will be implemented to prevent sediment from entering the waterbody.

Contingency Plan

If unforseen events (e.g., bedrock in trench, flume washout) cause the strategies set out in this plan to be insufficient or inappropriate to meet the objective, The company is expected to respond in a timely manner with all reasonable measures consistent with safety, to prevent, counteract or remedy any effects on fish or fish habitat that may result. DFO is to be notified as soon as practical.

Spill reporting procedures established by MOE shall be used to report any unexpected discharge of silt or sediment or other deleterious substance at the water crossing. The spill shall also be reported to the DFO as soon as possible in these circumstances.

If DFO determines that long term damage to fish habitat has occurred due to failure of this plan to control sediment, a restoration plan will be developed by the company, in consultation with and approval from DFO for implementation by the company.

Flume Sizing

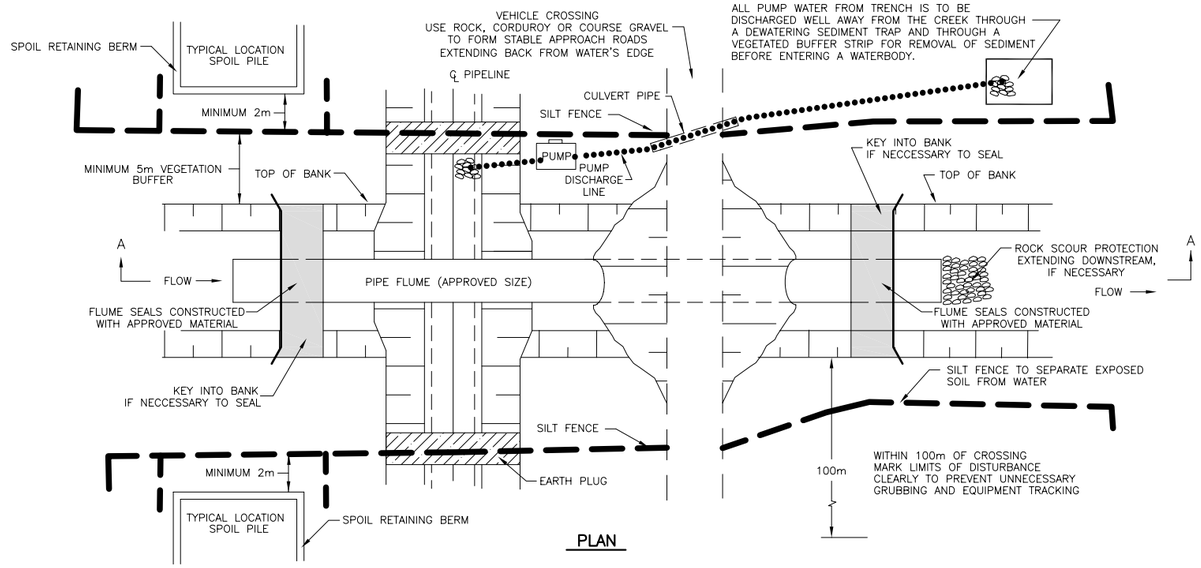
As a general guide, the flume method will be applied to streams where the expected maximum discharge of the watercourse exceeds 1.0 cubic metre/second. A combination of pumps and flumes may be required to bypass stream flow and to control water entrained within the isolated area. Specific methods proposed for each stream crossing will also be influenced by site specific conditions such as channel configuration, bank configuration and flow rates.

Flumes will be sized initially based on engineering hydrologic calculations. These theoretical sizes will be used as a guide, for confirmation in the field between the company and DFO.

The capacity of the flumes will be sized to handle 150% of the anticipated flow.

Flumes in place for less than 2 weeks may have their size selected by the company based on actual measured flow in the creek at the time of installation plus an additional 50% buffer.

Flume sizes may also be selected to be the same as nearby culverts that have been in place for many years and have performed satisfactorily.



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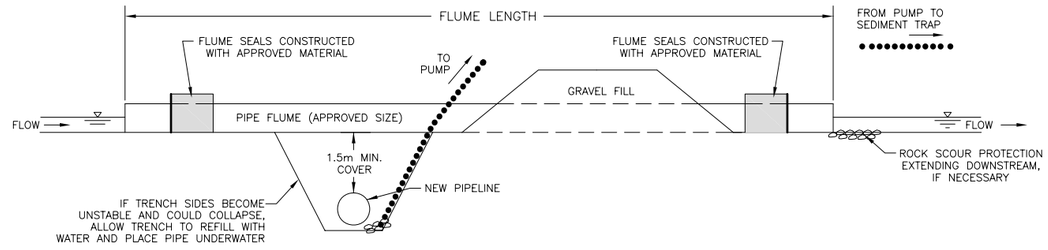


SECTION A–A

Detailed Construction Sequence – Dry Flume Crossings

In general terms, the following sequence of construction and mitigation measures will be followed at all "dry flume" type water crossings.

1. Mark out and maintain limits of authorized work areas with fencing or flagging tape to avoid unnecessary disturbance of vegetation. Ensure equipment operators working on the crossing have been briefed about this plan and the measures needed to protect water quality. Install prework sediment control measures, including silt fences and measures to contain excavated spoil and backfill. All necessary equipment and materials to build the flume must be on site or readily available prior to commencing in–water construction. Pipe shall be strung, welded and coated ready for installation prior to watercourse trenching.
2. Install flumes equal to or larger than the diameter determined by the methods described above. Flume length is to be identified in the permit application. Flume is to set 10 percent of diameter below streambed level where soil conditions permit (otherwise installed at stream grade and slope). Place impervious dams at each end of the flume, upstream first then downstream. Alternative dam materials include coarse gravel with rip rap protection, peastone bags, steel plate and rockfill. During placement, install an impervious membrane, if necessary, to prevent leakage. Dams may need keying into the bank and streambed. Once area is isolated, conduct fish recovery and transfer operations and dewater the area between the dams. All pump water is to be discharged well away from the creek and through a sediment trap for filtering of solid material before entering the creek. Pump discharge lines shall be installed to keep pumped water from coming into contact with soil on the construction site.
3. Excavate trench through plugs and under flume, then dewater. Work area dewatering will be filtered to remove suspended solids. Lower in pipe by passing under flume and backfill immediately. The top 300 mm of trench backfill is to be clean rock, cobble material or native streambed material. The Company is to use granular backfill if the native material is not suitable. In this case, the excavated material is to be moved back and deposited behind sediment fences. Any excess material is to be disposed of above the high water mark in an approved location and stabilized to prevent reentry into the waterbody. Work is to be completed as quickly as possible.
4. Flumes shall be removed as quickly as possible, when no longer required for pipe laying or for road access, in the following manner: remove the vehicle crossing ramp; surplus gravel is to be removed from the crossing area to an approved location. Creek banks are to be restored to a stable angle and protected with erosion resistant material compatible with flow velocity (e.g., coarse gravel, rip rap or erosion control matting) to the maximum extent possible before removing the dams. If rip rap material contains fines, the completed face is to be washed off and the turbid water pumped to land. Then remove downstream dam; remove upstream dam; remove flume; complete bank trimming and erosion protection. If pea stone bags are used for the dams, place and remove by hand to avoid equipment breaking bags.
5. Restore, stabilize and reclaim bed and banks of waterbody to preconstruction profiles and protected with erosion resistant material compatible with flow velocity (e.g., *do not use erosion control matting in the bankfull channel* coarse gravel or rip rap) to the maximum extent possible between dams. If rip rap material contains fines, the completed face is to be washed off and the turbid water pumped to the dewatering sediment trap. All construction material (e.g. dams, rip rap, spilled pea gravel from pea stone bags) not required to return the waterbody to preconstruction condition shall be removed from the site and stablized above the high water mark in an approved location. Removal of all materials will be done in a manner that will not introduce sediment to the waterbody.
6. Site stabilization, which includes control of stormwater drainage using a combination of methods such as silt fences, erosion blankets, diversion berms and check dams etc., is to be completed within 10 days of the removal of the flume. If stabilization is delayed, short term erosion control measures shall be used to prevent sediment entering the water. Material accumulated at silt fences is to be removed or stabilized in place. Silt fences are to be removed when the site is permanently stablized.
7. Vegetate any disturbed areas by planting and seeding preferably native trees, shrubs or grasses and cover such areas with mulch or erosion control matting to prevent soil erosion and to help seeds germinate.
8. If post–construction monitoring reveals erosion problems, remedial work is to be undertaken as quickly as possible.

NOTES

Schedule 16

Union Gas is responsible for implementation of appropriate sediment and erosion control to mitigate impacts to fish and fish habitat. Fisheries and Oceans Canada, Ontario–Great Lakes Area has reviewed Union Gas drawing, "GENERIC SEDMENT CONTROL PLAN DRY FLUME WATER CROSSINGS" dated January 2008, and endorses its use as a guideline for implementation of erosion and sediment measures.

For more information on this plan, please contact:
Doug Schmidt,
Principal Environmental Planner,
Union Gas Limited,
1–800–571–8446, ext. 2895

DATE	REV NO	REVISION	BY	APPD

uniongas
A Spectra Energy Company

PROJECT
UNION GAS LIMITED
CONSTRUCTION PROGRAM

LOCATION
ALL DRY FLUME WATER CROSSINGS IN ONTARIO

DRAWING TITLE
GENERIC SEDIMENT CONTROL PLAN DRY FLUME WATER CROSSINGS

SCALE	NTS	DATE	JAN. 1/08
FILE No.		PROJECT NO	
DRAWN GTH	CHECKED	DRAWING 1 of 3	REV 0

APPROVED

Generic Sediment Control Plan – Dam & Pump Crossing

This plan sets out the measures that will be taken by Union Gas Limited (company) and its contractors to control downstream sediment to the lowest level practically achievable during the construction of dam and pump type crossings. The conditions and techniques set out on this plan are to be followed unless approved otherwise by the Department of Fisheries and Oceans (DFO).

General Measures

The company must use materials, construction practices, mitigation techniques and monitoring of operations at every water crossing in order to prevent the unauthorized harmful alteration, disruption or destruction of fish habitat or the impairment of water quality. The following requirements apply to any permanent or intermittent waterbody (stream, river, pond) and areas adjacent to it.

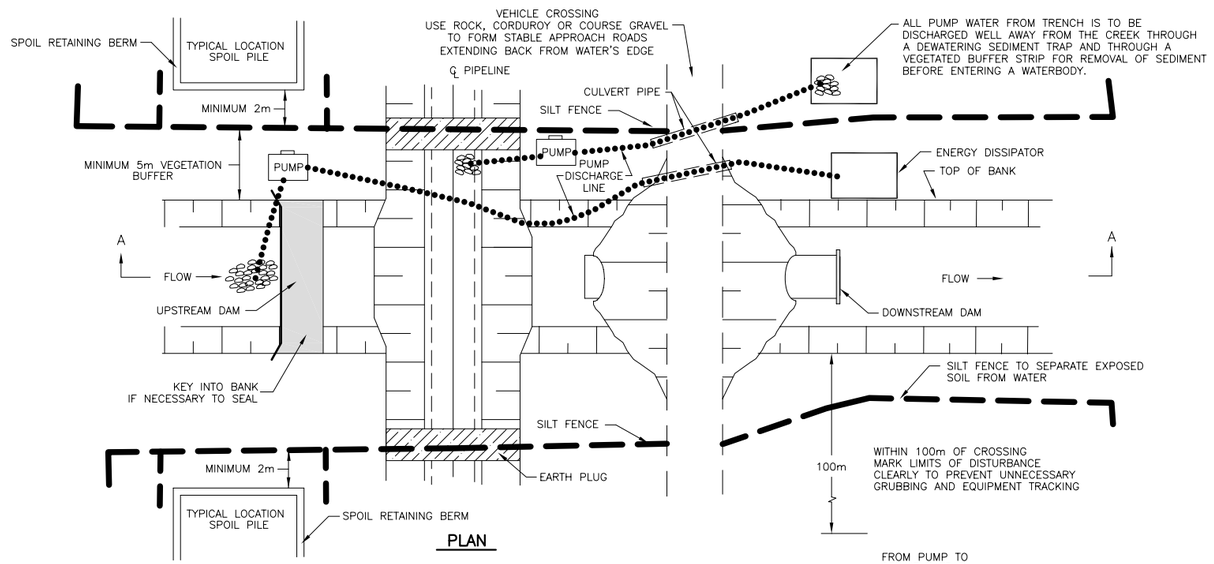
* The company will adhere to all permits and approvals of federal and provincial agencies related to watercourse crossings.
* The company will notify the appropriate federal or provincial agencies prior to commencement of a watercourse crossing in accordance with regulatory permit conditions.
* In–stream work will occur during the appropriate time windows for the geographic region and for the fish species present unless otherwise permitted by the appropriate agencies.
* Prior to removal of the low vegetative cover, effective mitigation techniques for erosion and sediment control must be in place to protect water quality. Limit the areal extent of disturbance to the minimum needed for construction and delay grubbing to immediately prior to grading operations.
* All watercourses will require a minimal disturbance zone (MDZ) to be clearly marked with flagging prior to the commencement of clearing activities or any construction activity near the waterbody. This flagging will be set back a minimum of 5m from the waterbody and will be based on site specific conditions. Extra work area required at watercourse crossing will be situated away from the waterbody outside of the minimal disturbance zone (MDZ).
* Materials removed or stockpiled during construction (e.g., excavated soil, backfill material) must be deposited in a manner to ensure sediment does not enter a waterbody. Appropriate erosion and sediment controls (e.g. revegetation, vegetated buffer strips, drainage control, sediment settling devices, and sediment fence or other appropriate mitigation measures) will be installed around spoil or stockpiles, to prevent sediment from stockpile runoff from entering a watercourse.
* All vehicles, machinery and other construction equipment shall not enter the water. There must be no fording of any stream.
* Except during construction of the crossing, the company will not obstruct any watercourse so as to impede the free movement of fish.
* Flow shall be maintained at all times downstream of the watercrossing.
* All exposed soil must be stablized (e.g. graded to a stable slope and erosion control measures implemented) as quickly as possible to prevent erosion.
* The company is to adhere to the Generic Sediment Control Plan For Temporary Vehicle Crossings.
* All required materials (e.g., silt fencing, filter cloth, polyethylene liners, granular material, rip rap, dam materials) and installation equipment (e.g., pipe, flumes, pumps, pump hoses, generators, spares, energy dissipaters) will be on–site and in good working order prior to construction.
* Prior to commencing watercourse crossings, local weather stations will be monitored to determine whether any precipitation is forcasted. In–stream activity will be delayed if flows are in flood stage and until weather conditions are favourable.
* If there is any flow in the creek, the company is to install pumps to maintain streamflow around the blocked off section of channel. An energy dissipator is to be built to accept pump discharge and prevent streambed or streambank erosion.
* Adequate pump capacity will be on site to handle anticipated water flows and any potential increases in flow during the construction period. Backup pumps with adequate capacity to handle 100% of the downstream flow must be on site and ready for immediate replacement, should the primary operating pump(s) fail.
* Water intakes used in fish bearing waters will be screened in accordance with the DFO Freshwater Intake Fish Screening Guidelines (1995).
* Fish recovery and transfer will be conducted prior to and during the isolation of flow and in accordance with permit regulations. See detailed construction sequence for timing of fish recovery operations.
* In–stream activities in all watercourses (e.g., trenching, pipe installation, backfilling) will be completed in as short a time as possible to minimize disturbance to water quality, fish and fish habitat.
* In situations where the crossing can be completed in one day, in–stream excavation will begin in the early morning to allow for same day installation.
* Refueling and lubrication of equipment will be conducted in areas that will allow any accidental spill of deleterious substance to be disposed of in an approved location before it reaches any waterbody. Appropriate spill prevention kits shall be readily available on site.
* The area around water crossings is to be regularly monitored and if erosion problems develop, immediate action is to be taken with appropriate treatments and completed as quickly as possible. Accumulated sediment is to be removed regularly.
* Revegetation must be completed as quickly as possible. Revegetate any disturbed areas by planting and seeding preferably native trees, shrubs or grasses and cover such areas with mulch or erosion control matting to prevent soil erosion and to help seeds germinate.
* The company will be held responsible for implementation of this plan.
* All use of silt fence, rock check dams and dewatering traps shall be constructed/installed in accordance to the most up to date company specifications and drawings. Where these mitigation measures are not sufficient to prevent sediment from entering the waterbody, additional mitigation measures will be implemented to prevent sediment from entering the waterbody.

Contingency Plan

If unforseen events (e.g., bedrock in trench, dam washout) cause the strategies set out in this plan to be insufficient or inappropriate to meet the objective, the company is expected to respond in a timely manner with all reasonable measures consistent with safety, to prevent, counteract or remedy any effects on fish or fish habitat that may result. DFO is to be notified as soon as practical.

Spill reporting procedures established by MOE shall be used to report any unexpected discharge of silt or sediment or other deleterious substance at the water crossing. The spill shall also be reported to the DFO as soon as possible in these circumstances.

If DFO determines that long term damage to fish habitat has occurred due to failure of this plan to control sediment, a restoration plan will be developed by the company, in consultation with and approval from DFO for implementation by the company.



SECTION A–A

Detailed Construction Sequence – Dam and Pump Crossings

In general terms, the following sequence of construction and mitigation measures will be followed at all "dam and pump" type water crossings.

1. Mark out and maintain limits of authorized work areas with fencing or flagging tape to avoid unnecessary disturbance of vegetation. Ensure equipment operators working on the crossing have been briefed about this plan and the measures needed to protect water quality. Install pre–work sediment control measures, including silt fences and measures to contain excavated spoil and backfill. All necessary equipment and materials to build the dams and to pump water must be on site or readily available prior to commencing in–water construction. Pipe shall be strung, welded and coated ready for installation prior to watercourse trenching.
2. Install pumps in natural pool upstream of the excavation. Excavate temporary sump within right–of–way if no natural pool exists. Check pump operation to equalize flow and ensure water intakes used in fish bearing waters are screened in accordance with DFO guidelines. Rip rap, stilling wells, filter cloth, gravel filters or other mitigation measures will be used at the upstream inlet of the pump to prevent suspension of sediment from pumping when necessary. Rip rap and rock check dams will be used when necessary to prevent scouring and erosion at the pump outlet. Pump discharge lines shall be installed to keep pumped water from coming into contact with soil on the construction site.
3. Dams are to be made of steel plate, inflatable rubber dam (aquadam), peastone bags, cobbles, well graded coarse gravel fill or rock fill and constructed so that sediment is not introduced to the waterbody. An impervious membrane is to be incorporated into the dam if necessary to control seepage flow. Dams may need keying into the banks and streambed. Install downstream dam only if needed to keep the trench area dry. Dewater the area between dams and for fish bearing streams, conduct fish salvage operations. All pump water is to be discharged well away from the creek and through a dewatering sediment trap for removal of sediment before entering the waterbody.
4. Excavate trench through plugs and streambed as quickly as possible, re–positioning discharge hose as necessary. Lower the pipe in the trench and backfill immediately. During this operation, try to maintain pumping as much as possible. The top 300 mm of trench backfill is to be clean rock, cobble material or native streambed material. The company is to use granular backfill if the native material is not suitable. Any excess material is to be disposed of above the high water mark in an approved location and stabilized to prevent reentry into the waterbody. Work is to be completed as quickly as possible.
5. Restore, stabilize and reclaim bed and banks of waterbody to preconstruction profiles and protected with erosion resistant material compatible with flow velocity (e.g., *do not use erosion control matting in the bankfull channel* coarse gravel or rip rap) to the maximum extent possible between dams. If rip rap material contains fines, the completed face is to be washed off and the turbid water pumped to the dewatering sediment trap. All construction material (e.g. dams, rip rap, spilled pea gravel from pea stone bags) not required to return the waterbody to preconstruction condition shall be removed from the site and stablized above the high water mark in an approved location. Removal of all materials will be done in a manner that will not introduce sediment to the waterbody. The downstream dam shall be removed first. Keep pump running until normal flow is resumed. Complete bank trimming and erosion protection. If pea stone bags are used for the dams, place and remove by hand to avoid equipment breaking bags.
6. Site stabilization, which includes control of stormwater drainage using combinations of silt fences, erosion blankets, diversion berms and check dams etc., is to be completed within 10 days of trench backfilling. If stabilization is delayed, short term erosion control measures shall be used to prevent sediment entering the water. Material accumulated at silt fences is to be removed or stabilized in place. Silt fences are to be removed when the site is permanently stabilized.
7. Vegetate any disturbed areas by planting and seeding preferably native trees, shrubs or grasses and cover such areas with mulch or erosion control matting to prevent soil erosion and to help seeds germinate.
8. If post–construction monitoring reveals erosion problems, remedial work is to be undertaken as quickly as possible.

NOTES

Schedule 16

Union Gas is responsible for implementation of appropriate sediment and erosion control to mitigate impacts to fish and fish habitat. Fisheries and Oceans Canada, Ontario–Great Lakes Area has reviewed Union Gas drawing, "GENERIC SEDMENT CONTROL PLAN DAM AND PUMP WATER CROSSINGS" dated January 2008, and endorses its use as a guideline for implementation of erosion and sediment measures.

For more information on this plan, please contact:
Doug Schmidt,
Principal Environmental Planner,
Union Gas Limited,
1–800–571–8446, ext. 2895

DATE	REV NO	REVISION	BY	APPD

unionGas
A Spectra Energy Company

PROJECT
UNION GAS LIMITED
CONSTRUCTION PROGRAM

LOCATION
ALL DAM AND PUMP WATER CROSSINGS IN ONTARIO

DRAWING TITLE
GENERIC SEDIMENT CONTROL PLAN DAM AND PUMP WATER CROSSINGS

SCALE	NTS	DATE	JAN. 1/08
FILE No.		PROJECT NO	
DRAWN GTH	CHECKED	DRAWING 2 of 3	REV 0

APPROVED

Generic Sediment Control Plan – Vehicle Crossings

This plan sets out the measures that will be taken by Union Gas Limited (company) and its contractors to control downstream sediment to the lowest level practically achievable during the construction, use and removal of temporary vehicle water crossing at streams, rivers and ponds. The conditions and techniques set out on this plan are to be followed unless approved otherwise by the Department of Fisheries and Oceans (DFO).

General Measures

The company must use materials, construction practices, mitigation techniques and monitoring of operations at every water crossing in order to prevent the unauthorized harmful alteration, disruption or destruction of fish habitat or the impairment of water quality. Vehicle crossings typically include temporary bridges such as wooden mats (swamp mats), portable bridges and culvert/grade fill ramps. The following requirements apply to any waterbody (stream, river, pond) and areas adjacent to it.

* Temporary vehicle access to be in place for less than four seasons and no work shall occur outside of timing windows, unless prior approval is obtained from the permitting agency. If temporary vehicle access is to stay in place outside of the in–water timing windows, then appropriate fish passage will be provided.
* Use existing vehicle access accross watercourses wherever possible.
* Prior to removal of the low vegetative cover, effective mitigation techniques for erosion and sediment control must be in place to protect water quality. Limit the areal extent of disturbance to the minimum needed for construction and delay grubbing to immediately prior to grading operations.
* Prior to commencing the installation of temporary vehicle crossings, local weather stations will be monitored to determine whether any precipitation is forcasted. If practical work will be delayed until weather conditions are favourable and if flows are in flood stage. If necessary to proceed with work under unfavourable conditions, the company will exercise due diligence.
* Vehicle crossing structures capable of handling anticipated high water flows during the construction period will be used. See guidelines below on sizing of water openings.
* Coarse cobbles, sandbags, geotextile liners and/or curb stringers to protect culvert and ramp approach fills from erosion and to prevent sedimentation of a watercourse will be used.
* On the approaches to vehicle crossing structures, road ditches constructed for drainage control will incorporate the necessary erosion and sedimentation control measures (e.g., silt fence, check dams) to prevent sediment from entering the watercourse.
* Except during construction of the crossing, the company will not obstruct any watercourse so as to impede the free movement of water and fish.
* All exposed mineral soil must be graded to a stable slope and treated as quickly as possible to prevent erosion and sediment from entering the water.
* All temporary vehicle crossing structures will be removed upon completion of construction. Banks and approaches will be restored and stabilized immediately upon removal of a vehicle crossing structure.
* The area around water crossings is to be regularly monitored and if erosion problems develop, immediate action is to be taken with appropriate treatments and completed as quickly as possible. Accumulated sediment is to be removed regularly from sediment control mitigations.
* Equipment fording will only be allowed with approval from the applicable government agencies. Fording will only be considered if:
  - The fording site does not support known critical aquatic habitat, such as spawning gravels;
  - The fording does not take place during fish spawning, incubation or migration periods;
  - The work site cannot be accessed from the opposite side of the watercourse to avoid fording activities;
  - The fording site has low profile and gradual banks which will not require grading to support vehicle traffic;
  - The fording site has relatively shallow water depths (less than 1m) at time of use;
  - The fording site has coarse substrate which will support vehicle travel without creating erosion and sedimentation;
  - Run–off from the approach slopes to the ford can be effectively controlled to prevent sediment introductions to the stream.
  - The number of crossings of the fording should be limited to a one–time event (over and back).
  - Boundaries of the fording site will be marked on both sides of the crossing to confine all vehicle traffic to the ford.
  - Fords will be aligned at right angles to the channel flow wherever possible to minimize instream travel.
  - Excess soil will be removed from vehicles before fording. In addition, all vehicles using the ford will be in good working order and checked to ensure no fuel, hydraulic fluid or lubricating fluid leaks are present.
  - Bed and banks of ford sites will be restored when no longer needed.
* For additional information refer to the Fisheries and Oceans Operational Statement–Clear Span Bridges. If the installation of a clean span bridge can meet all the conditions as stated in the Operational Statement, DFO review is not necessary.
* The company will be held responsible for implementation of this plan.

Sizing of Water Opening

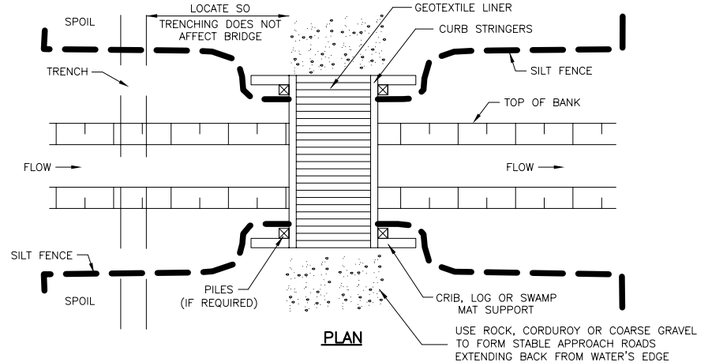
It is important that the size of the water opening be selected so the structure can safely pass flood flows that can reasonably be expected to occur during the life of the crossing. Either of the following methods can be followed:

* Install a bridge that clear spans the creek from top of bank to top of bank and ensure adequate freeboard to allow for anticipated increase in stream discharge and passage of debris.
* Conduct a hydrology analysis to determine theoretical opening size. The design flow will be the two year flood (Q2), unless the culvert is to be left in place through the spring freshet, in which case the theoretical opening size will be based on the five year flood (Q5). Culvert sizes may also be selected to be the same as existing nearby culverts that have been in place for many years and have performed satisfactorily.
* Culvert sizes and lengths must be approved by DFO prior to installation.
* If culverts are used, the approved size or equivalent multiple culverts must be installed. If a bridge is selected with cribs or piers in the water, the opening must provide the same end area as the culvert and must be approved by DFO.

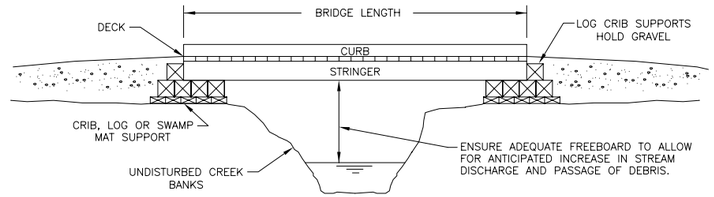
Detailed Construction Sequence – Temporary Bridges

In general terms, the following sequence of construction and mitigation measures will be followed at all temporary bridges:

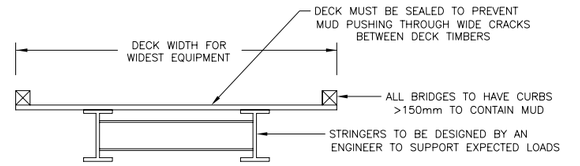
1. Generally, there are no restrictions on timing for the construction of clear–span structures as they do not involve in–water work. However, if there are any activites with the potential to disrupt fish or fish habitat (e.g., in–water crossing of watercourse by machinery), these should be done during provincial fisheries, timing windows.
2. Install the bridge in a manner that will minimize sediment entering the water. Stringers must be engineered to support the loads expected on the bridge. Curbs at least 150 mm high must be installed along the edge of the deck and if necessary, the deck lined with geotextile to contain mud on the bridge. Fasteners connecting components must be strong enough to hold them in position during the life of the bridge. If used, cribs are to be filled with rock or cobble. Rip rap erosion protection is to be placed around the cribs and on the fill slopes projecting into the water.
3. Road approaches leading to bridges and flume vehicle crossings must be raised and stable so equipment loads are supported a sufficient distance back from the water to reduce mud entering the stream from equipment tracks. This may require using materials such as gravel, rock or corduroy. If cuts are needed to obtain a satisfactory grade, they are to be dug with side ditches and stable slopes. Erosion and sediment control measures are to be installed to keep sediment on land (eg., check dams, filter cloth, rip rap, seed and mulch, sediment traps, etc.)
4. While the bridge is in use, any buildup of mud on the bridge deck or approaches that is affecting water quality is to be scraped off and disposed of in an approved location.
5. Temporary crossings shall be removed as quickly as possible when no longer required. Surplus gravel and bridge materials are to be removed from the crossing area and stabilized above the floodplain in an approved location. The creek bed and banks are to be restored to a stable angle and protected with erosion resistant material compatible with flow velocity (eg., coarse gravel or rip rap) Measures such as berms or logs may be needed to prevent sediment laden water running down the road.
6. Vegetate any disturbed areas by planting and seeding preferably native trees, shrubs or grasses and cover such areas with mulch or erosion control matting to prevent soil erosion and to help seeds germinate.



PLAN



BRIDGE PROFILE

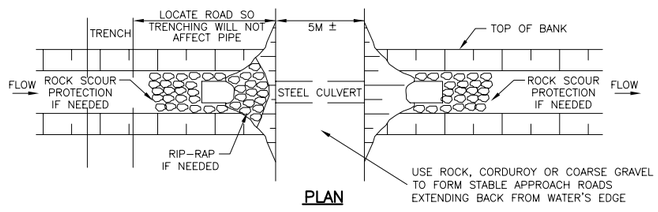


TYPICAL STEEL BRIDGE SECTION

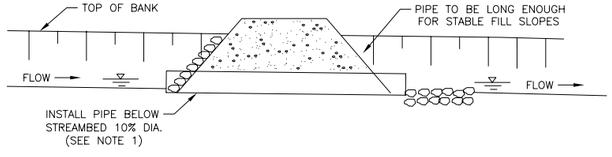
Detailed Construction Sequence – Temporary Culverts

In general terms, the following sequence of construction and mitigation measures will be followed at all temporary culverts:

1. Install culvert pipe of diameter and length as per approval conditions. Culvert invert is to be set to allow a minimum of 10cm water depth for fish passage where soil conditions permit (otherwise at at stream grade and slope). If streambed soils are soft, install coarse gravel or rockfill pad under the pipe. Pipe installation can be done in flowing water unless DFO specifies otherwise. Culvert backfill and fill for the road is to be coarse granular or rock fill material. Erosion protection may be needed on the upstream road fill slope and if scour is possible, rip rap is to be placed in the streambed upstream and downstream of the pipe outlet.
2. The road approach leading to the culvert crossing must be raised and stable so equipment loads are supported a sufficient distance back from the water to reduce mud entering the water from equipment tracks. This may require using materials such as gravel, rock or corduroy. If cuts are needed to obtain a satisfactory grade, they are to be dug with side ditches and stable slopes. Erosion and sediment control measures are to be installed to keep sediment on land (eg., check dams, filter cloth, rip rap, seed and mulch, sediment traps, etc).
3. While the culvert is in use, any build–up of mud on the road surface or approaches that is affecting water quality is to be scraped off and disposed of in an approved location.
4. When the temporary crossing is no longer required, it is to be removed as quickly as possible. Removal shall not occur outside the construction windows as identified in the approval without prior written approval from DFO. Surplus gravel is to be removed from the crossing area and disposed of in an approved location. The creek bed and banks are to be restored to a stable angle and protected with erosion resistant material compatible with flow velocity (eg., coarse gravel, rip rap or erosion control matting). Measures such as berms or logs may be needed to prevent sediment laden water running down the road.
5. Vegetate any disturbed areas by planting and seeding preferably native trees, shrubs or grasses and cover such areas with mulch or erosion control matting to prevent soil erosion and to help seeds germinate.



PLAN



STREAM PROFILE

NOTES

Schedule 16

Union Gas is responsible for implementation of appropriate sediment and erosion control to mitigate impacts to fish and fish habitat. Fisheries and Oceans Canada, Ontario–Great Lakes Area has reviewed Union Gas drawing, "GENERIC SEDMENT CONTROL PLAN TEMPORARY VEHICLE CROSSINGS" dated January 2008, and endorses its use as a guideline for implementation of erosion and sediment measures.

For more information on this plan, please contact:
Doug Schmidt,
Principal Environmental Planner,
Union Gas Limited,
1–800–571–8446, ext. 2895

DATE	REV NO	REVISION	BY	APPD

uniongas
A Spectra Energy Company

PROJECT
UNION GAS LIMITED
CONSTRUCTION PROGRAM

LOCATION
ALL TEMPORARY VEHICLE CROSSINGS (BRIDGES & CULVERTS) IN ONTARIO

DRAWING TITLE
GENERIC SEDIMENT CONTROL PLAN
TEMPORARY VEHICLE CROSSINGS

SCALE	NTS	DATE	JAN. 1/08
FILE No.		PROJECT NO	
DRAWN GTH	CHECKED	DRAWING	3 of 3
		REV	0

APPROVED

Schedule 17

OPCC Review Summary

Guelph Reinforcement Phase II Pipeline Project

AGENCY	COMMENT	RESPONSE
Ministry of Transportation Letter dated October 2, 2008	Union's letter has been forwarded to Ian Smyth, Corridor Management Planner, Ian will provide any comments.	Not Required
Township of Puslinch Letter dated October 6, 2008	Work will include crossing Concession Road #2. The proponent should provide details of the proposed crossing and restoration for approval of the Township prior to construction of the pipeline. Provided the above requirement is met, the Township has no objection to the proposal.	Response letter dated November 10, 2008. Union Gas will provide the Township of Puslinch with construction details regarding the proposed crossing of Concession Road #2.
Six Nations Council Letter dated October 22, 2008	The project is within the 1701 Treaty Territory. At this time, no further comment. Would appreciate being kept informed about any archaeological artifacts that are found.	Response letter dated November 10, 2008. Union Gas and its archaeological consultant have completed an assessment of the road allowance with no archaeological artifacts found. Temporary work spaces outside the road allowance still need assessment work; once work is completed an update will be provided.
Technical Standards & Safety Authority (TSSA) Letter dated October 29, 2008	We have reviewed the Stantec Report and the Design and Pipe Specifications. The report properly deals with our concerns and is acceptable to us.	Not Required

Ministry of
Transportation

Ministère des
Transports

Operations Office
Corridor Management and Property Section
301 St. Paul St, 2nd Floor
St. Catharines, Ontario L2R 7R4
Phone - (905) 704-2916; Fax - (905) 704-2777

Ontario

October 2, 2008

Union Gas
P.O. Box 2001,
50 Keil Drive North
Chatham, Ontario
N7M 5M1

Att: Doug Schmidt
Provincial Environmental Planner

RE: Guelph Reinforcement Phase II Pipeline Project

Thank you for your letter of September 19, 2008 regarding the above noted subject.

Please be advised that I have forwarded your letter to our London (Ian Smyth, Corridor Management Planner). Ian will review the proposed work and provide any comments directly to Ms. Zora Crnojacki (Chairman, OPCC) and to yourself.

If you required further information, please do not to hesitate to contact me.

Thank you.

Yours truly

Doug Peeling
Senior Policy Adviser

c:- I. Smyth

Schedule 4 Doug Schmidt
Union Gas

Gamsby and Mannerow
ENGINEERS

RECEIVED
OCT 14 2008
Union Gas Limited
Major Projects Department

October 6, 2008
Our File: 108-006

RECEIVED
OCT - 9 2008

Township of Puslinch
RR 3, 7404 Wellington Road 34
Guelph, ON N1H 6H9

Attention: Mrs. Brenda Law, AMCT
Clerk Treasurer

Re: Union Gas Limited
Guelph Reinforcement Phase II
Pipeline Project

Dear Mrs. Law:

As requested we reviewed the Environmental Report for the above captioned project.

The preferred pipeline route is located within the right-of-way on the west side of County Road 35. The initial stage of the project will involve the construction of a 12 inch diameter gas main from the north side of Concession Road #1 to County Road #34.

Construction of the gas main extension along County Road #35 from County Road #34 to Forestell Road will be constructed at a later date.

The initial phase of work will include the crossing of Concession Road #2 in the Township of Puslinch.

Depending on the frequency of use of Concession Road #2 the crossing may be directionally drilled, bored or open cut. As previously stated the proponent should provide details of the proposed road crossing and restoration for approval of the Township prior to construction of the pipeline. If the road is to be temporarily closed to complete the crossing (i.e. open cut) the proponent should provide signing and advanced notice of the road closure to inform the traveling public on Concession Road #2 as well as the emergency service providers.

Provided the above requirements are met we have no objection to the proposal

Yours truly,

GAMSBY AND MANNEROW LIMITED

Per:

R.C. Wheildon, P.Eng.

RCW/sn

cc. Jim Howlett, Township of Puslinch

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SIX NATIONS COUNCIL

October 22, 2008

Doug Schmidt
Principal Environmental Planner
P.O. Box 2001,
50 Keil Drive North,
Chatham, ON
N7M 5M1

Dear: Mr. Schmidt

Re: Union Gas Limited – Guelph Reinforcement Phase II Pipeline Project

Six Nations of the Grand River (Six Nations) has received a notice regarding the Guelph Reinforcement Phase II Pipeline Project.

Six Nations' cultural, sustenance and other rights are recognized by the Province of Ontario by way of the 1701 Treaty of Ft. Albany. Six Nations' rights and interests in relation to lands six miles either side of the Grand River (the Grand River Tract) was also confirmed by way of treaty, through the Haldimand Proclamation of October 25, 1784. This project is within the 1701 Treaty Territory.

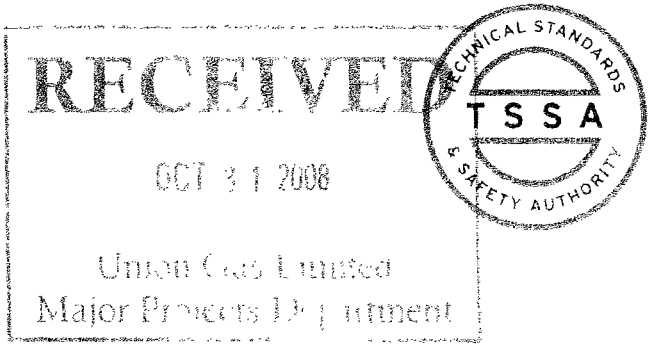
At this time we have no further comments with regards to this project. We would appreciate being kept informed about any archaeological artifacts that are found. For further information, please do not hesitate to contact Lonny Bomberry at (519) 753-0665 ext. 12. We thank Union Gas for providing us notification of this project.

Respectfully,

Lonny C. Bomberry, Director
Six Nations Lands and Resources

CC: Mr. William K. Montour, Chief: Six Nations Elected Council
Mr. Leroy Hill, Secretary: Haudenosaunee Six Nations Confederacy Council
Minister Brad Duguid, Ontario Ministry of Aboriginal Affairs
Minister Chuck Strahl, Indian and Northern Affairs Canada

This letter is without prejudice to the positions that Six Nations has and may take in respect to its claims and litigation in relation to the Six Nations Tract/ Haldimand Proclamation Lands.



FUELS SAFETY DIVISION

Tel: (416) 734-3353
Fax: (416) 231-7525

October 29, 2008
File: CF

Mr. D. F. Schmidt
Principal Environmental Planner
Union Gas Limited
P. O. Box 2001
Chatham, ON N7M 5M1

Dear Mr. Schmidt:

Re: Union Gas Limited – Guelph Reinforcement Phase II Pipeline Project.

This is in response to your letter of September 19, 2008 regarding the referenced project. We reviewed the Stantec Consulting Ltd. Report dated September 2008 (File No. 160960383) and the Design and Pipe Specifications attached to your submission.

The report properly deals with our concerns and is acceptable to us.

Yours truly,

Oscar Alonso, P. Eng.
Fuels Safety Engineer

cc: Zora Crnojacki, Chair, OPCC, OEB

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uniongas
A Spectra Energy Company

November 10, 2008

Six Nations of the Grand River Territory
1695 Chiefswood Road
Ohsweken, ON
N0A 1M0

Dear: Mr. Bomberry

Re: Union Gas Limited – Guelph Reinforcement Phase II Pipeline Project

Thank you for your comments in your letter dated October 22, 2008.

With respect to archaeology, Union Gas and its archaeological consultant have completed an assessment of the road allowance with no archaeological artifacts found. A small number of temporary work spaces outside the road allowance still require assessment work. Once that work is completed I will forward an update to your attention.

Yours truly,

UNION GAS LIMITED

D.F. (Doug) Schmidt
Principal Environmental Planner

CC: John Bonin, Union Gas Limited, London Office

November 10, 2008

Township of Puslinch
RR 3, 7404 Wellington Road 34
Guelph, ON
N1H 6H9

Attention: Mrs. Brenda Law, AMCT
Clerk Treasurer

Re: Union Gas Limited – Guelph Reinforcement Phase II Pipeline Project

Dear Mrs. Law

Union Gas has received the letter forwarded to the Township of Puslinch by Gamsby and Mannerow Engineers dated October 6, 2008 regarding the Environmental Report and the above mentioned pipeline project.

Thank you for these comments and prior to construction, Union Gas will provide the Township of Puslinch with construction details regarding the proposed crossing of Concession Road #2.

If you should have any further questions on this matter or the project in general please do not hesitate to contact myself or Paul Clarke, Construction Team Lead, 519 885-7479.

Sincerely,

UNION GAS LIMITED

D.F. (Doug) Schmidt
Principal Environmental Planner
1 866-949-1595, Ext. 76954

CC: Paul Clarke, Union Gas Limited, Waterloo Office

Schedule 18

TOTAL ESTIMATED ENVIRONMENTAL COSTS

GUELPH REINFORCEMENT PHASE II
PIPELINE PROJECT

Pre-Construction			
Environmental Assessment	$	70,000	
Archaeology		15,000	
Soil Sampling		5,000	
Watercourse Survey		10,000	
Vegetation Survey		5,000	
Hearing Costs (Environmental Consultant)		15,000	
Permits		10,000	
Environmental Planning		5,000	
Total Pre-Construction			**$ 135,000**
Construction			
Environmental Inspection	$	5,000	
Stream Crossings		3,000	
Site Restoration		71,000	
Water Well Sampling		10,000	
Total Construction			**$ 89,000**
Post Construction			
Site Restoration	$	18,000	
Tree Replacement		15,000	
Total Post Construction			**$ 33,000**
Total Estimated Environmental Costs			**$ 257,000**