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Enbridge Gas Inc.
500 Consumers Road
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April 14, 2020

VIA EMAIL, RESS AND COURIER

Ms. Christine Long
Board Secretary
Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

Dear Ms. Long:

Re: Enbridge Gas Inc. (Enbridge Gas)
Ontario Energy Board (OEB) File No.: EB-2019-0188
North Bay (Northshore and Peninsula Roads) Community Expansion Project – Updated Interrogatory Response

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Further to Enbridge Gas's submission dated March 27, 2020 in the above noted proceeding, attached please find the following updated IR response:

- Exhibit I.STAFF.7
  - Attachment 1
  - Attachment 2
  - Attachment 3 (new)
  - Attachment 4 (new)
  - Attachment 5
  - Attachment 6

As Attachment 4 contains personal information, the submission is being filed in accordance with the Board's revised Practice Direction on Confidential Filings, effective October 28, 2016.

Please contact the undersigned if you have any questions.

Sincerely,

(Original Signed)

Erica Péquegnat
Regulatory Coordinator

ENBRIDGE GAS INC.

Answer to Interrogatory from
Board Staff (STAFF)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 7, page 1-3
Exhibit B, Tab 2, Schedule 12

Preamble:

A copy of the EPP has been submitted to the Ontario Pipeline Coordinating Committee (OPCC), local municipalities, government agencies, and Indigenous communities. The summary will continue to be updated as additional comments are received. Enbridge Gas retained a Cultural Heritage Specialist to complete a Cultural Heritage Study for the Project. The report was sent to the Ministry of Tourism, Culture and Sport (MTCS) on April 2, 2019, and was accepted by the Ministry on May 7, 2019. Enbridge Gas also retained a licensed Archaeologist to complete an Archaeological Assessment for the Project. The Archaeological Assessment Report was submitted to the Ministry of Tourism, Culture and Sport on February 8, 2019 and approval was received on July 18, 2019.

Question:

a) Please discuss the process used by Enbridge Gas to determine that an Environmental Report is not required. If there are any checklists or screening tools, please file the ones used.

b) Please file an update of the comments (in tabular format) that Enbridge Gas received as part of the OPCC review and in any public consultation (e.g. updates on the hydrogeological report submitted to the Ministry of the Environment, Conservation and Parks). Include the dates of communication, the issues and concerns identified by the parties, as well as Enbridge Gas' responses and actions to address these issues and concerns.

c) Please provide a copy of the letter from the Ministry of Tourism, Culture and Sports approving the Archaeological Assessment Report submitted to the ministry.

d) Please provide a copy of the letter from the Ministry of Tourism, Culture and Sports accepting the Cultural Heritage Report submitted to the ministry.

Response:

a) The Environmental Protection Plan filed in the Leave to Construct application with the Ontario Energy Board (OEB) is synonymous with an "Environmental Report" and was prepared to take into consideration and to meet the intent of the OEB Environmental Guidelines. The label Environmental Protection Plan was used consistent with past practice related to smaller construction projects. However, the report content is consistent with what is required for an Environmental Report under the Guidelines. To avoid confusion, Enbridge Gas will use the label Environmental Report in future for all projects requiring OEB approval.

   As noted in Section 1.3.1 of the Guidelines, "the level of detail in the ER should reflect environmental issues or concerns encountered on the project". The principal objective of the EPP is to outline various environmental mitigation and protection measures for the construction and operation of the project while meeting the intent of the Guidelines. To meet this objective, the EPP was prepared to:

   - Identify a preferred route that minimizes potential environmental impacts, i.e. the pipeline will be located entirely in road allowance designed to accommodate utilities;
   - Review the environmental features along the preferred route and assess the potential environmental impacts;
   - Establish mitigation and protective measures to avoid or minimize environmental impacts;
   - Obtain input from interested and potentially affected parties; and
   - Identify any necessary supplemental studies.

   Stantec Consulting Ltd. (Stantec) was also retained to complete a Natural Heritage Study for the proposed project to review the proposed running line for environmental constraints and sensitive features. Additional mitigation measures were provided in the Natural Heritage Study as well as the "Mitigation Mapping" completed by Stantec, which can be found in Attachment 1 and 2 respectively. Enbridge Gas will adhere to the recommended mitigation measures during construction.

b) At the time Enbridge Gas filed its responses to the interrogatories on March 27, 2020, it had received no comments since the OPCC Review Summary was filed with the Leave to Construct Application. However, on April 9, 2020 the Ministry of the Environment, Conservation and Parks ("MECP") informed Enbridge Gas that it had a

/U

comment dated April 7, 2019 (see Attachment 3). As described in the email exchange (Attachment 4) the MECP's comment originated as part of the OPCC review process. The MECP has not raised a specific concern or request that requires any action from Enbridge Gas. Rather it identified observations specific to the Hydrogeological Study and Spill Prevention and Response Procedures for the North Bay (Northshore and Peninsula Roads) expansion project. Enbridge Gas's response to the MECP submission is included in Attachment 4.

c) Please see Attachment 5. /U

d) Please see Attachment 6. /U

Natural Gas Pipeline Community Expansion Project
Natural Heritage Study: North Bay

FINAL REPORT

May 10, 2018

File: 160961225

Prepared for:

Union Gas Ltd.
745 Richmond Street
Chatham, Ontario N7M 5J5

Prepared by:

Stantec Consulting Ltd.
1 – 70 Southgate Drive
Guelph, Ontario N1G 4P5

This document entitled Natural Gas Pipeline Community Expansion Project Natural Heritage Study: North Bay was prepared by Stantec Consulting Ltd. (“Stantec”) for the account of Union Gas Ltd. (the “Client”). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec’s professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by _____
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Table of Contents

ABBREVIATIONS II

1.0 INTRODUCTION 1.1
1.1 PROJECT LOCATION 1.1
1.1.1 Study Area 1.1

2.0 EXISTING CONDITIONS 2.1
2.1 DESIGNATED NATURAL AREAS 2.1
2.2 TERRESTRIAL SPECIES AND HABITAT 2.1
2.2.1 Forest and Vegetation Cover 2.1
2.2.2 Wetlands 2.4
2.2.3 Wildlife Habitat and Species at Risk 2.4
2.3 AQUATIC SPECIES AND HABITAT 2.8
2.3.1 Aquatic Species At Risk 2.10

3.0 IMPACT ASSESSMENT AND RECOMMENDED MITIGATION 3.1
3.1 VEGETATION COVER 3.1
3.2 WETLANDS 3.2
3.3 WILDLIFE HABITAT AND SPECIES AT RISK 3.4
3.4 AQUATIC SPECIES AND HABITAT 3.6

4.0 REFERENCES 4.1

LIST OF TABLES

Table 2-1: Land Cover and Vegetation Community Types Identified in the Study Area 2.2
Table 2-2: Terrestrial Species of Conservation Concern 2.6
Table 2-3: Terrestrial Species at Risk 2.7
Table 2-4: Fish Species in Trout Lake 2.9
Table 2-5: Watercourse and Fish Habitat Summary 2.11

LIST OF APPENDICES

APPENDIX A: FIGURES
Figure 1: Project Location and Study Area
Figure 2: Existing Natural Features Overview Map
Figure 2.1-2.5: Existing Natural Features
Figure 3.1-3.5: FRI Vegetation Communities
Figure 4: Watercourse Crossings

Abbreviations

AMO	Atlas of the Mammals of Ontario
COSEWIC	Federal Committee on the Status of Endangered Wildlife in Canada
COSSARO	Provincial Committee on the Status of Species at Risk in Ontario
CRA	Commercial, Recreational, or Aboriginal fishery
DFO	Fisheries and Oceans Canada
FRI	Forest Resource Inventory
END	Endangered
HDD	Horizontal Directional Drill
LIO	Land Information Ontario
km	kilometre
m	metre
MBCA	Migratory Bird Convention Act
MNRF	Ministry of Natural Resources and Forestry
MOECC	Ministry of Environment and Climate Change
NHIC	Natural Heritage Information Centre
OBBA	Ontario Breeding Bird Atlas
ORAA	Ontario Reptile and Amphibian Atlas
OWES	Ontario Wetland Evaluation System
PSW	Provincially Significant Wetland
SAR	Species at Risk
SARA	Species at Risk Act

SC	Special Concern
SOCC	Species of Conservation Concern
Stantec	Stantec Consulting Ltd.
THR	Threatened
UG	Union Gas Ltd.

1.0 INTRODUCTION

Union Gas Ltd. (UG) has retained Stantec Consulting Ltd. (Stantec) to conduct natural heritage reviews along the routes for their community expansion projects across Ontario. This report discusses approximately 27 km of natural gas pipeline located east of North Bay along the north shore of Trout Lake and along the peninsula of Trout Lake.

The purpose of this report is to identify natural features along the proposed route, potential impacts to those features and to recommend mitigation measures to reduce potential impacts. This report included a combination of desktop screening consisting of the following:

- Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Information Centre (NHIC) Database (NHIC 2018)
- LIO mapping database (LIO 2018a)
- Forest Resource Inventory (FRI) data provided by the MNRF (LIO 2018b)
- Fisheries and Oceans Canada (DFO) Species At Risk Mapping (DFO 2017)
- Breeding Bird Atlas of Ontario (Cadman et al. 2007)
- Ontario Reptile and Amphibian Atlas (Ontario Nature 2010-2018)
- City of North Bay – Schedule 3A – Environmental Constraints Overlay (City of North Bay 2012)
- Available air photos (First Base Solutions 2018)

1.1 PROJECT LOCATION

The proposed pipeline is located in the District of Nipissing, east of North Bay along the north shore of Trout Lake and follows along the existing road allowances of Trout Lake Road, Gartland Drive, West Peninsula Road, Viceroy Road, Northshore Road, Hughes Road, Regal Road and Peninsula Road.

1.1.1 Study Area

The Project Study Area is shown in **Figure 1** (**Appendix A**[1]) and consist of the road allowances on both side of the roadways in which the route follows. The Project Study Area includes a 120 m boundary around the proposed pipeline. The surrounding landscape includes primarily forested lands in the Nippissing District. This shield area lacks any significant agricultural lands and is primarily occupied by residences and cottages.

[1] All figures referenced herein are located in Appendix A

2.0 EXISTING CONDITIONS

2.1 DESIGNATED NATURAL AREAS

According to the LIO database (LIO 2018a), the following provincially designated natural areas are present in the Project Study Area (**Figure set 2**):

- Provincial Park – Mattawa River

Schedule 3A of the City of North Bay Official Plan (2012) also maps the following designated natural areas in the Study Area:

- Development Constraint Area
- Floodplain One Zone Policy Area
- Floodplain Two Zone Policy Area
- Escarpment

2.2 TERRESTRIAL SPECIES AND HABITAT

2.2.1 Forest and Vegetation Cover

Background Review

The Project Study Area is located in Rowe's (1972) Great Lakes-St. Lawrence Forest Region. Vegetation cover at this location is known to be mixed in nature. The Project Study Area occurs near the northern limit of this forest region, where coniferous, hardwood and mixed forests dominate the landscape. Tree cover includes a variety of species and can be determined based on vegetation community type. Upland forest communities commonly include: sugar maple (*Acer saccharum*), American beech (*Fagus grandifolia*), various oaks (*Quercus* sp.), eastern hemlock (*Tsuga canadensis*), eastern white pine (*Pinus strobus*), and poplar species (*Populus* sp.). Lowlands, including rich floodplain forests and swamps, typically contain silver maple (*Acer saccharinum*), red maple (*Acer rubrum*), eastern white cedar (*Thuja occidentalis*), yellow birch (*Betula alleghaniensis*), balsam fir (*Abies balsamea*), and black ash (*Fraxinus nigra*).

Site Investigations

A desktop review of the vegetation communities occurring in the Study Area was completed using the Forest Resource Inventory (FRI) data provided by the Ministry of Natural Resources and Forestry (LIO 2018b). Community characterizations were based on the provincial ecosite classification system for northern Ontario (Banton et al., 2009). In the case where an area was not provided with an ecosite classification from the FRI data layer, air photo interpretation was completed to assign an ecosite type to the undetermined area. Ecosites identified in the Study Area are herein referred to as vegetation communities.

Sixteen (16) land cover and vegetation community types were delineated within the Study Area and are shown on **Figure set 3**. Land cover and vegetation community types consisted of upland areas (forest), lowland areas (wetland communities, including swamp, fen and marsh) and urban areas. Vegetation communities present in the Study Area are described in **Table 2-1.**

Table 2-1: Land Cover and Vegetation Community Types Identified in the Study Area

Category	Vegetation Community	Community Description
Forest	**G048** Dry to Fresh, Coarse: Red Pine – White Pine Conifer	Tall treed community. Tree cover is generally >10 m in height, where the canopy cover is typically closed. Species cover includes eastern white and red pine amongst other conifer species. Sweet blueberry, beaked hazel, bush honeysuckle, wild lily-of-the-valley, bracken fern, wild sarsaparilla and Schreber's moss are commonly found in the understory. This community varies from moderate to deep non-calcareous soil.
Forest	**G054** Dry to Fresh, Coarse: Red Pine – White Pine Mixedwood	Tall treed community. Tree cover is generally >10 m in height, where the canopy closure can be variable. Red pine and white pine comprise the canopy cover amongst hardwood species such as red maple and birch. Beaked hazel, wintergreen, low sweet blueberry, wild sarsaparilla, wild lily-of-the-valley, bracken fern and powder horn lichen are commonly found in the understory. Soil depth is moderate and non-calcareous.
Forest	**G055** Dry to Fresh, Coarse Loamy: Aspen - Birch Hardwood	Tall treed community. Aspen and birch species dominate the canopy along with white birch, trembling aspen, large-tooth aspen and yellow birch with sugar maple, balsam fir and red maple associates. Beaked hazel, fly honeysuckle, mountain maple, bluebead-lily and Schreber's moss are commonly found in the understory. This community varies from moderate to deep non-calcareous soil
Forest	**G057** Dry to Fresh, Coarse: Oak Hardwood	Tall treed community. Canopy closure can be variable, with tall tree (> 10 m) and low tree (≤ 10 m) cover. Oak species comprise a minimum of 50% of the canopy cover, and can include red oak, white oak and bur oak, amongst other hardwood species such as sugar maple, red maple, white birch and balsam popular and ironwood. Understory vegetation can include striped maple, fly honey suckle, maple-leaved virburnum, large-leaved aster and powder horn lichen. This community varies from moderate to deep non-calcareous soil.
Forest	**G058** Dry to Fresh, Coarse: Maple Hardwood	Tall treed community. Canopy closure can be variable, with tall tree (> 10 m) and low tree (≤ 10 m) cover. Canopy cover mostly consists of maple species, including sugar maple and red maple. Eastern hemlock, yellow birch, white birch, American basswood, American beech, ironwood and eastern white pine can be common amongst the maple cover. Understory vegetation can include beaked hazel, fly honeysuckle, striped maple, leatherwood, wild lily-of-the-valley, spinulose wood fern, starflower, purple trilling and beautiful branch moss. This community varies from moderate to deep non-calcareous soil.
Forest	**G059** Dry to Fresh, Coarse: Mixedwood	Tall treed community. Hardwood canopy generally consisting of sugar maple, American beech, American basswood, red oak, white birch, red maple, ironwood and yellow birch. Common understory can include striped maple, beaked hazel, serviceberry, hobblebush, spinulose wood fern. Deep non-calcareous soil.

Table 2-1: Land Cover and Vegetation Community Types Identified in the Study Area

Forest	**G064** Moist, Coarse: Red Pine – White Pine Conifer	Tall treed community. Canopy cover generally consisting of eastern white and red pine, amongst associates of large-tooth aspen, white birch, red maple, whites spruce, trembling aspen and balsam fir. Understory species may include beaked hazel, low sweet blueberry and fly honeysuckle. Deep non-calcareous soil.
Forest	**G066** Moist, Coarse Loamy: Hemlock - Cedar Conifer	Tall treed community. Eastern white cedar and eastern hemlock dominate the canopy with yellow birch, balsam fir, red maple, white birch, sugar maple and white spruce associates. Understory comprised of shrub and herbaceous cover, and may include mountain maple, fly honeysuckle, striped maple, starflower, goldthread and glossy moss. Deep non-calcareous soil.
Forest	**G067** Moist, Coarse: Spruce - Fir Conifer	Tall treed community. Conifer cover dominating the canopy cover, consisting of balsam fir and/or spruce species. Other tree species may include white birch, trembling aspen, red maple, black cherry and yellow birch. Common understory cover includes fly honeysuckle, mountain maple, beaked hazel, star flower, spinulose wood fern and glossy moss. Deep non-calcareous soil.
Forest	**G070** Moist, Coarse Loamy: Aspen - Birch Hardwood	Tall treed community. Aspen and birch species dominate the canopy with white birch, trembling aspen, large-tooth aspen and yellow birch. Associates include sugar maple, balsam fir, red maple, and white spruce. Understory may include beaked hazel, mountain maple, northern wild raisin, starflower and beautiful branch moss. This community varies from moderate to deep non-calcareous soil.
Forest	**G075** Moist, Coarse: Maple Hardwood	Tall treed community. Maple species comprise the canopy, including sugar maple, red maple and silver maple. White birch, eastern white pine, trembling aspen, white spruce, balsam fir and yellow birch associates. Understory vegetation can include fly honeysuckle, beaked hazel, mountain maple, wild sarsaparilla and powder horn lichen. Deep non-calcareous soil.
Forest	**G076** Moist, Coarse: Mixedwood	Tall treed community. Canopy consists of a mixture of sugar maple, American beech, yellow birch, eastern hemlock, red maple and American basswood. Understory species may include striped maple, fly honeysuckle, hobblebush and beautiful branch moss. Deep non-calcareous soil.
Swamp	**G130** Intolerant Hardwood Swamp	Tall treed community. Hardwood canopy consisting of black ash, green ash, trembling aspen and balsam poplar. Understory cover includes mountain maple, swamp black current, northern wild raisin, large-leaved aster, naked miterwort, sensitive fern and common green peat moss. Deep non-calcareous soil.
Fen	**G140** Open Moderately Rich Fen	Graminoids (sedges and grasses) or shrub cover with no tree or shrub species. Areas of open peatlands often present. Ground-cover mostly sedge litter. Deep non-calcareous soil.
Marsh	**G142** Mineral Meadow Marsh	Graminoids (sedges and grasses) dominate the vegetation cover with very little to none tree or shrub cover. Ground-cover sedge litter. Non-calcareous soils - mostly deep and wet.
Not Vegetated	**G197** Early Successional Forest - Disturbed - Pavement/Concrete	Community classification assigned a result of industry and/or anthropogenic disturbances. Areas in the Study Area classified as G197X mostly include residential areas.

Reference: Banton et al., 2009

2.2.2 Wetlands

Background Review

Provincially Significant Wetlands (PSW) are identified by the MNRF in accordance with the *Ontario Wetland Evaluation Manual, 3rd Edition* (MNR, 1993). Through the application of the Ontario Wetland Evaluation System (OWES), wetland areas are evaluated and scored to identify PSWs. An evaluated wetland may be one contiguous unit or may be a series of smaller wetlands functioning as a whole. Evaluated wetlands that do not qualify as provincially significant may be designated as locally significant. Locally significant wetlands may qualify for protection through regulation under the Conservation Authorities Act, and local planning and policy measures. Unevaluated wetlands are wetlands that have not undergone an evaluation through the OWES process. A review of LIO (2018a) natural heritage mapping (as discussed in Section 2.1) indicated no PSWs are present in the Study Area (**Figure set 2**). No evaluated wetlands were identified in the Study Area as per LIO (2018a) mapping. Several unevaluated wetland areas were identified in the Study Area. These areas are considered as "wetlands not evaluated per OWES" (LIO 2018a) and are shown on **Figure set 2**. Some of these wetland areas are located in areas that are classified as G197 communities (residential), indicating they partially undergo regular mowing or property maintenance, and may not support an abundance of native wetland vegetation and diversity.

Site Investigations

Through the review of the FRI data (LIO 2018b) discussed in Section 2.2.1, three wetland vegetation community types occur within the Study Area. These community types include a treed swamp (G130), fen (G140) and marsh (G142). Descriptions of these communities are provided in **Table 2-1**. These wetland communities are considered not evaluated as per the OWES.

2.2.3 Wildlife Habitat and Species at Risk

Records of wildlife within the vicinity of the Study Area were compiled from available literature and resources including the Atlas of the Mammals of Ontario (Dobbyn 1994), Reptiles and Amphibians of Ontario (Ontario Nature 2010-2018) and the Ontario Breeding Bird Atlas (Cadman et al. 2007), in addition to NHIC data (LIO 2018a) and MNRF correspondence (personal communication Julie Robinson MNRF, March 13, 2018). Species of Conservation Concern (SOCC) and Species at Risk (SAR) are the primary species of interest for development activities.

The potential for SAR and SOCC to be present along the proposed pipeline location is limited by the habitat suitability and availability supported by the Study Area. Therefore, the identified SAR and SOCC recorded from the databases may not occur along the preferred pipeline route or the Study Area. The preferred route alignment does not traverse through natural habitat as it is located entirely within an existing road allowance that is periodically disturbed for maintenance work.

Significant Wildlife Habitat

Wildlife habitat is defined as an area where plants, animals and other organisms live, including areas where species concentrate at a vulnerable point in their life cycle and that are important to migratory and non-migratory species (MNRF 2010). Wildlife habitat is considered significant if it is ecologically important

in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or Natural Heritage System (MNRF 2010). Significant wildlife habitat features are not mapped in the City of North Bay Official Plan (2012). There is limited potential for significant wildlife habitat to occur in the Study Area. The proposed pipeline follows along an existing road allowance where the temporary disturbance to habitat would be an area where periodic maintenance such as lawn or roadside grass cutting would be frequent. The treed and graminoid communities located within the Study Area occur within the 120 m boundary of the proposed pipeline (including the Mattawa River Provincial Park). These natural vegetated communities experience high amount of disturbance as they are located adjacent to residential areas and roadsides. Protection for these natural features are discussed in Section 3.3.

Significant wildlife habitat is determined based on guidance provided in the Natural Heritage Reference Manual (MNRF 2010), Significant Wildlife Habitat Technical Guide (MNR 2000) and the significant wildlife habitat Ecoregion 5E Criterion Schedule (MNRF 2015). The guidance documents divide wildlife habitat into four broad categories:

- Habitats of seasonal concentrations of animals
- Rare vegetation communities or specialized habitats for wildlife
- Habitats of species of conservation concern (excluding endangered and threatened species)
- Animal movement corridors

Significant wildlife habitat for seasonal concentrations of animals, rare vegetation communities or specialized habitats for wildlife, and animal movement corridors may occur within the Study Area but are not anticipated to occur along the construction footprint of the proposed preferred route. The existing road allowance is not anticipated to support significant wildlife habitat due regular periodic maintenance and limited natural features available to wildlife. Potential turtle nesting habitat may occur along the gravel road shoulders; however, mitigation for turtle nesting habitat is considered for turtle SOCC and SAR that may potentially occur in the Study Area. Mitigation specific to turtle nesting is discussed in Section 3.3.

Species of Conservation Concern

There are four types of SOCC: those which are rare, those whose populations are significantly declining, those which have been identified as being at risk from certain common activities and those with relatively large populations in Ontario compared to the remainder of the globe. The Significant Wildlife Habitat Criteria Schedule for Ecoregion 5E (MNRF, 2015) identifies marsh, open country and shrub/early successional bird breeding habitat and special concern and rare wildlife species in this category.

Species of conservation concern includes species that have a high proportion of their global population in Ontario. Although they may be common in Ontario, they are found in low numbers in other jurisdictions. Species designated as Special Concern provincially or federally are included as species of conservation concern.

S-Ranks are status rankings (see list below) assigned for the province by the MNRF and available in the NHIC database. Provincially rare species are those with S-Ranks of S1, S2 or S3 (NHIC 2017):

- S1 – Critically Imperiled
- S2 – Imperiled
- S3 – Vulnerable
- S4 – Apparently Secure
- S5 - Secure

The NHIC database was accessed on April 5, 2018 to obtain recent records of species of conservation concern (less than 30 years old) near the proposed preferred route. A review of the NHIC database has indicated no species of conservation concern have been historically documented in the vicinity the Study Area. However, a review of wildlife atlases indicated 6 potential SOCC are known to occur in the vicinity of the Study Area. Exact locations of species occurrences are not available from these databases or atlases, and the potential for species to be present is limited by habitat suitability and availability. Therefore, the identified species recorded from these databases may not occur in the Study Area.

Table 2-2 below provides a summary of the SOCC that have been identified during the NHIC and wildlife atlas background review, and whether potential habitat for these species may be present in the Study Area.

Table 2-2: Terrestrial Species of Conservation Concern

Common Name	Scientific Name	S-RANK	Provincial Status (COSSARO)	National Status (COSEWIC)	Source	Potential Habitat in the Study Area? (Y/N)
REPTILES						
Snapping Turtle	*Chelydra serpentina*	S3	SC	SC	ORAA	Y
BIRDS						
Common Nighthawk	*Chordeiles minor*	S4B	SC	THR	OBBA	Y
Canada Warbler	*Cardellina canadensis*	S4B	SC	THR	OBBA	Y
Eastern Wood-Pewee	*Contopus virens*	S4B	SC	SC	OBBA	Y
Short-eared Owl	*Asio flammeus*	S2N, S4B	SC	SC	MNRF	N
Wood Thrush	*Hylocichla mustelina*	S4B	SC	THR	OBBA	Y

Legend:

SC: Special Concern

THR: Threatened

S3: Vulnerable – vulnerable in the province, relatively few populations

S4: Apparently Secure – Uncommon but not rare

S#B: Breeding status rank

AMO: Atlas of the Mammals of Ontario

OBBA: Ontario Breeding Bird Atlas

ORAA: Ontario Reptile Atlas

Species at Risk

Species at risk are those species given status rankings, by the Federal Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and/or the provincial Committee on the Status of Species at Risk in Ontario (COSSARO), as threatened or endangered according to federal or provincial legislation. Endangered and threatened species receive general habitat protection under the ESA 2007. Special concern species are not afforded habitat protection and have been summarized as species of conservation concern above.

Recent records (less than 30 years old) of endangered and threatened species were obtained through the NHIC database on the LIO Natural Heritage Mapping website, accessed April 5, 2018 (LIO 2018a). The NHIC database uses Element Occurrences to show locations of species. An Element Occurrence is defined as an area of land and/or water on/in which an element (e.g., species or ecological community) is or was present. For protection purposes, exact locations of species are not provided (only within a 1 km grid), and presence of the species in the Study Area are not definite.

A review of the NHIC database has indicated that 1 endangered (END) species has been documented in the vicinity the Study Area.

Based on a review of background information and consultation with the MNRF (personal communication Julie Robinson [MNRF], March 13, 2018), 7 threatened and endangered species have ranges that overlap with the Study Area, including 1 reptile, 2 species of breeding birds and 4 species of mammal, as shown in **Table 2-3**.

Exact locations of species occurrences are not available from the database, and the potential for species to be present is limited by habitat suitability and availability in the active zone of the Study Area.

Table 2-3: Terrestrial Species at Risk

Common Name	Scientific Name	S-RANK	Provincial Status (COSSARO)	National Status (COSEWIC)	Source	Potential Habitat in the Study Area? (Y/N)
REPTILES						
Blanding's Turtle	*Emydoidea blandingi*	S3	THR	THR	ORAA, NHIC	Y
BIRDS						
Barn Swallow	*Hirundo rustica*	S4B	THR	THR	OBBA	Y
Chimney Swift	*Chaetura pelagica*	S4B, S4N	THR	THR	OBBA	N
MAMMALS						
Little Brown Myotis	*Myotis lucifugus*	S4	END	END	AMO	Y
Northern Myotis	*Myotis septentrionalis*	S3?	END	END	AMO	Y
Small-footed Myotis	*Myotis leibii*	S2S3	END	-	AMO	Y

Table 2-3: Terrestrial Species at Risk

Common Name	Scientific Name	S-RANK	Provincial Status (COSSARO)	National Status (COSEWIC)	Source	Potential Habitat in the Study Area? (Y/N)
Tri-coloured Bat	*Perimyotis subflavus*	S3?	END	END	AMO	Y

Legend:
END: Endangered

Records of Blanding's Turtle are present in Trout Lake. Blanding's Turtle typically nest in open habitat, which can include beach and shorelines, in addition to human-altered areas such as gravel roads and shoulders. The peak nesting season for Blanding's Turtle typically occurs between the last week of May and the first week of July, as indicated in Environment Canada's proposed *Recovery Strategy for the Blanding's Turtle (Emydoidea blandingii)* guidance document (EC 2016). Potential nesting habitat may occur for Blanding's Turtle along the gravel roadsides in the Study Area. Mitigation specific to turtle nesting habitat is discussed in Section 3.3.

In regards to the other 6 SAR listed above, potential habitat for SAR is considered present in the Study Area, it is not anticipated that the preferred route alignment traverses any sensitive habitat for SAR, as it is located within an existing road allowance that is periodically disturbed for maintenance work. In addition, construction techniques will avoid sensitive habitats (i.e. using trenchless technologies such as horizontal directional drilling (HDD) where appropriate). Section 3.3 discusses potential impacts and recommended mitigation measures for wildlife and terrestrial species at risk.

2.3 AQUATIC SPECIES AND HABITAT

As part of the assessment of potential environmental impacts, an aquatic habitat assessment was undertaken to document and characterize aquatic features in the Study Area. The aquatic habitat assessment was undertaken in support of identification of potential impacts and associated mitigation measures.

Background Review

The MNRF's LIO digital mapping (LIO 2018a) indicates that there are seven watercourse crossings in the Study Area, including the following:

- Two crossings of Hogan Creek
- One crossing of Four Mile Creek
- Four crossings of unnamed tributaries to Trout Lake

The LIO database contains records for fish species within the that inhabit Trout Lake. **Table 2-4** provides a list of fish species known to inhabit Trout Lake (LIO 2018a).

Table 2-4: Fish Species in Trout Lake

Common Name	Scientific Name
Atlantic Salmon	*Salmo salar*
Brook Trout	*Salvelinus fontinalis*
Cisco	*Coregonus artedi*
Common Shiner	*Luxilus cornutus*
Lake Trout	*Salvelinus namaycush*
Largemouth Bass	*Micropterus salmoides*
Muskellunge	*Esox masquinongy*
Rainbow Trout	*Oncorhynchus mykiss*
Rock Bass	*Ambloplites rupestris*
Smallmouth Bass	*Micropterus dolomieu*
Smelts	*Osmerus spp.*
Walleye	*Sander vitreus*
White Sucker	*Catostomus commersonii*

Consultation with MNRF has indicated that Brook Trout are known to inhabit Hogan Creek and Four Mile Creek, and that Four Mile Creek provides Atlantic Salmon spawning habitat (Robinson 2018).

Trout Lake supports a Commercial, Recreational, or Aboriginal (CRA) fishery and since watercourses crossed by the preferred route are connected to Trout Lake, it is assumed that they also support a CRA fishery.

Figure 4 illustrates the crossing locations and thermal regime provided by the MNRF data for watercourses crossed by the proposed pipeline.

Desktop Analysis

The purpose of the desktop analysis was to identify the location of potential fish habitat at watercourse crossings along the preferred route.

The pipeline will be installed within the road allowance along the preferred route. Background review and desktop analysis were conducted where roads along the preferred route cross watercourses. The survey included crossings identified on MNRF databases and any additional watercourse crossings visible on air photos along roads within the preferred route.

Data collected during background review and desktop analysis was used to determine the potential that a watercourse supports fish that are part of or support a CRA fishery, as defined by the federal *Fisheries Act*. It was determined that a watercourse supported a CRA fishery if it met one or more of the following criteria:

- Mapping from LIO database (2018a) suggests that the watercourse is directly connected to fish habitat downstream.

- Conditions of channel visible on air photos suggest that flow is permanent.
- There is a surface water feature visible in air photos at the crossing.

Table 2-5 provides a summary of habitat characteristics identified at each watercourse crossing. Desktop analysis identified the presence of suitable habitat to support a CRA fishery at each of the seven crossings along the pipeline route.

2.3.1 Aquatic Species At Risk

Information provided by LIO (2018a) and DFO Aquatic Species at Risk Mapping (Ontario North East Map 2 of 27) indicated there are no records for aquatic species at risk within the Study Area.

Table 2-5: Watercourse and Fish Habitat Summary

Crossing ID	Watercourse Name	Supports a CRA fishery	Desktop Analysis	Aquatic Species At Risk Present
SC1	Hogan Creek	Yes	• Open channel visible on air photos and fish species present indicate watercourse is permanently flowing. • Hogan Creek appears to be permanent watercourse downstream of Study Area.	No
SC2	Hogan Creek	Yes	• Open channel visible on air photos and fish species present indicate watercourse is permanently flowing. • Hogan Creek appears to be permanent watercourse downstream of Study Area.	No
SC3	Four Mile Creek	Yes	• Open channel visible on air photos and fish species present indicate watercourse is permanently flowing. • Four Mile Creek appears to be permanent watercourse downstream of Study Area.	No
SC4	Unnamed Tributary to Trout Lake	Yes	• Open channel visible on air photos indicate watercourse is permanently flowing. • Tributary appears to be permanent watercourse downstream of Study Area.	No
SC5	Unnamed Tributary to Trout Lake	Yes	• Open channel visible on air photos indicate watercourse is permanently flowing. • Tributary appears to be permanent watercourse downstream of Study Area.	No
SC6	Unnamed Tributary to Trout Lake	Yes	• Open channel visible on air photos indicate watercourse is permanently flowing. • Tributary appears to be permanent watercourse downstream of Study Area.	No
SC7	Unnamed Tributary to Trout Lake	Yes	• Open channel visible on air photos indicate watercourse is permanently flowing. • Tributary appears to be permanent watercourse downstream of Study Area.	No

3.0 IMPACT ASSESSMENT AND RECOMMENDED MITIGATION

The following sections discuss potential impacts and recommended mitigation measures for the proposed pipeline.

3.1 VEGETATION COVER

Potential Impacts
Tree clearing is not anticipated; however, in the case cutting may be required, the following impacts and mitigation will apply.

Vegetative cover within the road allowance generally consists of common, hardy plant species as well as herbaceous and graminoid vegetation, all of which are adaptable to disturbed environments. The Study Area is dominated by a mixture of forests and wetlands with scattered residential properties and cottages. The proposed pipeline route will follow along the existing road allowance, outside of the natural vegetation communities (forests and wetlands).

Without appropriate mitigation measures, construction activities can adversely impact trees and other vegetation through soil compaction, removal of topsoil and equipment encroachment, causing irreversible damage to roots or trunks and destroying the structural integrity of vegetation or soils. Filling, excavation, grading or trenching in the root area of a tree has the potential to cause irreversible damage. Vegetation removal may also have the potential to clear active nests if vegetation removal occurs during the active breeding bird season. Nest clearing surveys will be required for vegetation clearing activities between April 15 and August 13 to comply with the Migratory Bird Convention Act (MBCA). Refer to Section 3.3 for associated wildlife mitigation measures.

Mitigation and Protective Measures
Stantec recommends the following mitigation measures, or equivalent, to be implemented to reduce impacts on forests and vegetation cover:

- Municipal requirements or permits for tree cutting will be determined prior to construction.
- Encroachment into adjacent wooded areas to be avoided and individual tree removal minimized.
- Construction traffic to be restricted to the existing road allowance where possible to avoid potential compression damage to the root zones of trees located adjacent to the road allowance.
- High-traffic or erosion-prone areas of the road allowance to be revegetated with suitable protective cover.
- Reclamation in residential/commercial land areas traversed by the road allowance to involve seeding (or sodding) the disturbed areas and replacement of ornamental trees and shrubs.

Stantec recommends the following mitigation measures, or equivalent, to be implemented to protect trees or other vegetation to be retained along the preliminary preferred route:

- Where the pipeline route encroaches on the drip line of specimen trees (i.e. large diameter Oak trees), Horizontal Directional Drill (HDD) to be considered to protect the root system where feasible
- Understory vegetation beneath the drip line of specimen trees to be retained in an undisturbed state, where possible
- Any specimen trees or other vegetation to be retained is recommended to be surrounded by temporary protective fencing or other measures before any clearing or grading occurs

The following criteria are recommended by Stantec to be taken into consideration when selecting a seed mix for use in natural vegetation areas:

- Site specific conditions such as climate, soil types and terrain to be considered
- Only local native species to be included
- A fast-growing seed mixture requiring little or no maintenance to be selected
- Seed mixture to be consistent with the land use of the area
- If there is no suitable local native seed mix available, but seeding is deemed desirable to promote rapid revegetation of an area, a non-invasive annual nurse crop such as annual ryegrass to be used instead
- Purchased seed to be certified free of weeds

Net Impacts
With effective implementation of the mitigation measures recommended above, no significant adverse residual impacts to vegetation cover are anticipated.

Vegetation removal may be required along the edges of rural roads. Removal will be restricted to cultural hedgerow allowance communities and the edge of natural heritage features that are currently exposed to road traffic and maintenance activities. As vegetation removals are restricted to the edge of natural heritage features, impacts on the ecological function of these features will be minimized.

3.2 WETLANDS

Potential Impacts
The potential impacts on wetlands during construction include accidental contaminant release, sedimentation and turbidity from surface runoff, introduction of invasive species and temporary lowering of the water table during trench dewatering. Clean-up and restoration activities to contain or remove contaminant and sediment releases can cause more damage to sensitive wetland ecology than the initial impact of the release. Therefore, it is important to institute appropriate mitigation measures to minimize interactions with adjacent wetlands.

As construction is planned within the previously disturbed road allowance, no significant adverse interactions are expected to occur with wetlands along the preferred route. However, to protect these features, Stantec recommends construction activities undertaken to include the following mitigation measures when working in proximity to wetlands.

Mitigation and Protective Measures

Cross wetlands encroaching the road ROW using HDD construction methods. Where wetlands are adjacent to the construction areas, and HDD is not to be implemented, Stantec recommends silt fencing to be installed to protect the adjacent feature. The following mitigation measures are recommended to reduce impacts to wetlands during construction:

- All activities, including equipment maintenance and refueling to be controlled to prevent entry of petroleum products or other deleterious substances, including any debris, waste, rubble, or concrete material, into a wetland.
- In the unlikely event of a spill, spills containment and clean-up procedures to be implemented immediately. Union Gas to contact the Ministry of Environment and Climate Change (MOECC) Spills Action Centre. The MOECC Spills Action Centre is the first point of contact for spills at the provincial and federal level.
- Construction material, excess material, construction debris and empty containers to be stored away from adjacent wetlands.
- Temporary work space width to be minimized when working within 30 m of wetlands, where practical.
- Staging areas to be located at least 30 m away from the edge of wetlands.
- Construction dewatering to be discharged to sediment removal basins if discharge to a well-vegetated dry area is not feasible. Locate the sediment removal basin in an area that maximizes the distance to the nearest surface water feature and minimize the slope of the surrounding buffer area. The basin to consist of a temporary enclosure constructed with hay bales, silt fence or both.

Stantec recommends the following erosion control measures specific to wetlands to include the following:

- Surface runoff to be directed as overland flow with sufficient drainage structures to dissipate hydraulic energy
- Soil transport to be prevented by diversion of site runoff through shallow vegetated channels, placement of straw bales or sediment control fencing
- Sediment barriers to be installed along the edge of the road allowance to contain spoil within the road allowance, where required
- Natural drainage spacing to be provided around spoil piles
- Temporary erosion/silt control structures (i.e. straw bales, sediment fencing) to be used down gradient of spoil stockpiles, as necessary
- Temporary sediment barriers to be maintained until soils are stabilized

- Vegetation clearing not to be conducted within 30 m of a wetland unless required for site construction activity (i.e. within the road allowance)
- If vegetation regeneration is unlikely to occur immediately following construction (i.e. outside the growing season), all impacted slopes adjacent to wetlands to be stabilized using geogrids or weed-free mulch for a minimum of 30 m from the wetland
- Erosion control measures in both active and non-active construction areas to be regularly inspected until the site has been adequately stabilized to prevent erosion

Net Impacts
With the implementation of HDD construction and the above mitigation and protective measures, no significant adverse residual impacts on wetlands are anticipated.

3.3 WILDLIFE HABITAT AND SPECIES AT RISK

Potential Impacts
New pipeline construction impacts on wildlife populations are associated with vibration and compaction of the shoulder as well as direct mortality from animal-vehicle collisions because of increased construction traffic, temporary avoidance behavior due to the presence of humans and equipment and direct loss of habitat (e.g., destruction of nests or alteration of nesting habitat). No new lands or natural areas are anticipated to be assumed for this Project. Because the Project will be working within a road allowance, mitigation will be primarily targeted at SOCC and SAR (ESA 2007 protected species) that are either permanent residents of the area, such as turtles and bats, or known to migrate through the area such as birds. The preferred habitat for the potential SOCC and SAR that may occur in the vicinity of the Study Area is generally not present in the road allowance, and therefore, little or no interaction with Project activities is anticipated.

Mitigation and Protective Measures
The mitigation measures below, or equivalent, are recommended by Stantec to minimize potential impacts of the Project on wildlife and wildlife habitat:

SOCC and SAR
Information to be provided to workers on SAR identification and habitat or nesting characteristics. If a SAR is observed, work is to be stopped immediately in the vicinity to prevent harm or harassment of the individual. The species can be removed by a qualified ecologist using approved MNRF handling protocols and relocated away from the construction area to prevent incidental harm. Preconstruction surveys will be conducted for identification of turtle habitat along roadsides and wetlands, as well as bat maternity roosts where tree removal is required.

Reptiles
The following mitigation are recommended to protect reptiles and their habitat:

- Gravel road shoulders may provide nesting habitat for turtle SOCC and SAR.

- Exclusion fencing (e.g. silt fence) to be erected along the road prior to activities occurring in areas identified as having potential turtle habitat such as along or adjacent to stream/river crossings, lake shores, ponds, wetlands, where HDD is not being implemented.
- Habitat for Blanding's Turtle is considered present along the preferred route. Pre-construction surveys along the roadside to be conducted to identify evidence of obvious nest sites. During construction, workers are to be instructed to watch for active turtles that may be entering the work site.
- No heavy machinery to be permitted on the shoulder of the road past the exclusion fencing to prevent compaction and prevent destruction of nests and habitat.

Birds

- Restrict any activities to a species-specific radius of an active nest that are immediately in the construction zone.
- Tree and vegetation removal (including roadsides and any tree removal) to be completed outside of the migratory bird nesting season from April 1 to August 31 to avoid disturbance to nesting birds protected under the MBCA and SAR protected by the ESA 2007.
- Removals could take place during this restricted timing window only if nest clearing surveys are completed by qualified individuals no more than seven days prior to any clearing activities.

Bats

- Further to the timing window for birds, no tree clearing to occur when bat species at risk may be roosting in the trees (between May 1 to August 31).
- To limit the potential impacts to bats, the amount of tree clearing to be kept to a minimum.

Other Wildlife

- Incidents involving wildlife are to be documented and reported to the MNRF.
- Food waste and other debris to be properly contained, collected and removed from the site daily to an approved disposal facility.
- No dogs are permitted on the work site.

Net Impacts

It is not anticipated that SAR will be encountered or habitat will be altered during this Project. However, a permit under ESA 2007 may be required if SAR are encountered and/or if a residence or habitat of a SAR is altered.

With the effective implementation of the above mitigation and protective measures, no significant adverse residual impacts on wildlife or wildlife habitats are anticipated. Therefore, the pipeline route is anticipated to have no significant adverse environmental effects with respect to wildlife or wildlife habitat.

3.4 AQUATIC SPECIES AND HABITAT

Potential Impacts

Construction has the potential to affect fish through impacts on water quality (erosion, sedimentation, and accidental spills) and disruption/harassment (vibration and noise). These potential effects may occur due to construction of the pipeline.

Watercourses identified as supporting fish that are part of or support a CRA fishery will be crossed using HDD methods. Therefore, no in-water work will be required. Watercourses identified as not supporting fish that are part of or support a CRA fishery may be crossed using trenched construction methods.

Stantec recommends the setback distances for the drill entry and exits pits to be established at least 30 m from the bankfull width of aquatic habitat. With the successful implementation of mitigation measures, HDD crossings reduce the risk of impacts on sensitive habitats and sedimentation in a watercourse and reduce disturbance to the streambed and banks within the riparian zone. Fish passage and stream flow are also maintained.

If HDD is not feasible, Stantec recommends consideration to be given to installations within the road allowance above culvert where grades and integrity allow.

If trenched crossings are required at locations that support fish that are part of or support a CRA fishery, other potential impacts could include restrictions to habitat use and fish passage, changes to habitat such as altered substrate composition, increased erosion potential, loss of in-stream cover and loss of riparian shading. Excessive sediment introduced into a watercourse can adversely impact fisheries through clogging of fish gills, sedimentation of spawning beds and alteration of habitat.

Construction activities at or in close proximity to a watercourse should follow DFO's Measures to Avoid Causing Harm to Fish and Fish Habitat (DFO 2016) and the Agreement Letter Between Union Gas and DFO for Pipeline Construction and Maintenance (DFO 2008). These documents include measures for erosion and sediment control, fish relocations, and in-water construction timing windows.

Impacts to aquatic species at risk are not anticipated as records are limited to Chippewa Creek. The proposed pipeline does not cross this river.

Mitigation and Protective Measures

The following general mitigation measures, or equivalent, are recommended at watercourse crossings along the preferred pipeline route. Some of the following general measures may not be applicable to HDD crossing methods but are included in the event a trenched crossing is required. Additionally, activity-specific measures related to the crossing methods are provided following the general mitigation measures. All measures presented are intended to be consistent with DFO's measures to avoid serious harm (DFO 2016), which are recommended to be consulted immediately prior to construction to confirm that the construction plan is consistent with the most up-to-date list of DFO avoidance measures.

General Mitigation Measures

Stantec recommends the following mitigation measures while working in or adjacent to watercourses:

- In-water work for coldwater habitats along the proposed route is to occur from June 16 to August 31 (no work from September 1 to June 15) and for warmwater habitats along the proposed route is to occur from June 21 to March 30 (no work from April 1 to June 20) (MNRF 2017).
- Watercourses not to be obstructed in a way that impedes the free movement of water and fish.
- Prior to removal of vegetation cover, effective mitigation techniques for erosion and sedimentation to be in place to protect water quality. Disturbance to an area during construction to be limited. Grubbing activities to be delayed until immediately prior to grading operations.
- Soil exposure to be reduced prior to commencing construction, and the period that soil remains exposed for grading to be limited. Exposed soils surrounding watercourses to be seeded immediately following construction.
- Temporary erosion and sediment control measures to be maintained and kept in place until work within or near a watercourse has been completed and stabilized. Temporary sediment control measures to be removed at the completion of the work but not until permanent erosion control measures have been established.
- Construction material, excess material, construction debris and empty containers to be stored a minimum of 30 m from watercourses and watercourse banks.
- Equipment maintenance and refueling to be controlled to prevent entry of petroleum products or other deleterious substances, including any debris, waste, rubble, or concrete material, into a watercourse, unless otherwise specified in the contract.
- Deleterious substances (fuel, oil, spoil) to be stored >30 m from the watercourse. Any such material that inadvertently enters a watercourse is to be removed in a manner satisfactory to the environmental inspector.
- In the unlikely event of a spill, spills containment and clean-up procedures are to be implemented immediately. Union Gas is to contact the MOECC Spills Action Centre. The MOECC Spills Action Centre is the first point of contact for spills at the provincial and federal level.
- Conditions of water crossing permit(s), if applicable, are to be adhered to.
- Additional supplies to be maintained on-site, in a readily accessible location, for maintenance and contingency purposes. Prior to construction, adequate quantities of the materials listed below, or comparable substitutions, are to be on site to control erosion and sediment deposition:
  - Sediment control fencing
  - Sediment control logs (i.e., SiltSoxx™)
  - Straw bales
  - Wooden stakes
  - Sand bags

- Water energy dissipater
- Filter cloth
- Water pumps (including stand-by pumps and sufficient lengths of hose)
- Culvert

Horizontal Directional Drill Mitigation Measures

HDD construction methods for pipeline water crossings will not require DFO review or Authorization under the *Fisheries Act* provided measures to avoid causing serious harm to fish are followed during construction. These measures include locating entry and exit points at sufficient distance to avoid disturbance to the bed and banks, locating the drill path at an appropriate depth below the channel and installation of appropriate sediment and erosion control measures (i.e. silt fencing around disturbed areas, development of a contingency plan, etc.). If these measures are followed, a Project of this nature is low risk to fish and can proceed without DFO review.

Stantec recommends the following mitigation measures as they relate to employing the HDD method:

- Standard erosion and sediment control measures to be implemented around drill and pipe staging areas.
- Drilling equipment (e.g. drill rig, support equipment, sump) to be set up a minimum of 30 m from the edge of watercourses.
- Clearing of vegetation or grading of watercourse banks not to occur within 30 m from the edge of watercourses, if possible.
- A drilling mud release contingency plan to be prepared and kept on-site.
- Suitable drilling mud tanks or sumps to be installed to prevent contamination of watercourses.
- The excavation of relief pits may be required to prevent a drilling mud release into sensitive features. Relief pits to be set back 10 m from sensitive features where possible and be contained using appropriate ESC measures.
- Where needed, berms or check dams to be installed downslope from drill entry and anticipated exit points to contain the release of any drilling mud.
- Drilling mud to be disposed in accordance with the appropriate regulatory authority requirements.

Drilling Mud Release (Inadvertent Returns) Mitigation Measures

Stantec recommends the following mitigation measures to be employed to reduce the risk of lost drilling mud circulation:

- Install appropriate berms, silt fencing and secondary containment measures (i.e. plastic tarp) around drilling and drilling mud management equipment at both bore entry and bore exit locations to contain operational spills.
- Clean up operational spills daily to prevent mobilization of drilling mud off site during rain events.

- Design the directional drill so that drilling slurry pressure is minimized and the drilling rate is reduced in porous materials to minimize the chance of loss of circulation of the drilling slurry.
- Maintain smooth operation of the drilling string and slurry pumping systems to avoid pressure surges.
- Reduce slurry viscosity through appropriate filtering of drilled material to reduce the pressure gradient along the drill path due to frictional effects.
- Continually monitor slurry volumes to enable a quick response to any indications of lost circulation.
- Immediately contain any drilling mud that escapes onto land and transfer it into an on-site containment system.

The following materials are recommended to be on hand during drilling operations and prepared to be employed in the event of a drilling mud spill or inadvertent return: sand bags, straw bales, silt fencing and a hydrovac truck.

Additional Measures

The contingency method for HDD crossings is a trenched crossing. Additionally, crossings identified as not supporting fish that are part of or support a CRA fishery may be crossed using a trenched construction method. Stantec recommends the following measures in regards to trenched crossings.

Flow Diversion/Dewatering

If in-water works are required, the work area is to be isolated from the remainder of the surface water feature. Downstream flows are to be maintained using dam and pump or dam and flume techniques. When dewatering the work area, dewatering operations are to be managed to prevent erosion and/or release of sediment laden or contaminated water to the waterbody (e.g. settling basin, filter bag, energy dispersion measures). An isolation/containment plan is to be designed and implemented to isolate temporary in-water work zones and maintain flow around the work zone. Maintenance of downstream flow will avoid potential upstream flooding and desiccation of downstream aquatic habitat and organisms. To further reduce the potential for flooding during construction, the weather forecast is to be monitored prior to the start of construction to ensure that in-water works occur during a dry period.

Fish Rescue Plan

Prior to dewatering the work zone, fish trapped in the construction area are to be collected and moved using capture, handling, and release techniques to reduce harm and stress. The intakes of pumping hoses will be equipped with an appropriate device to avoid entraining and impinging fish (see *Measures to Avoid Causing Harm to Fish and Fish Habitat* (DFO 2016) at the following DFO website http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/measures-mesures-eng.html). Fish rescue plans will be developed on a site-specific basis and implemented by qualified professionals with the appropriate permitting in place (i.e. MNRF Licence to Collect Fish for Scientific Purposes).

Site Restoration and Riparian Planting

Following construction, the bed and banks of the crossing locations will be restored to pre-construction conditions to the extent possible in accordance with environmental permits. Bank slopes will be restored to match existing grades; however, alterations may be made to maintain slope stability and limit future

erosion. Exposed banks will be re-vegetated with native plants to provide riparian cover and aid in erosion and sediment control. Stream beds will be restored to maintain slopes and tie in with existing grades. Bed material will be replaced to match pre-construction conditions.

Permitting

The *Fisheries Act* prohibits causing serious harm to fish unless authorized by DFO. This applies to work being conducted in or near water bodies that support fish that are part of or that support a CRA fishery. Since November 25, 2013, proponents must take the responsibility to determine whether their projects meet the DFO requirements under the Self-Assessment process. If serious harm cannot be avoided, proponents are to contact DFO for a formal review and/or approval under the *Fisheries Act*. Following finalization of plans, Stantec recommends a Self-Assessment to be completed for all project activities that have the potential to cause serious harm to fish. If it is determined that serious harm is likely to occur because of project-related activities, a Request for Review is to be completed and submitted to DFO to determine approvals requirements under the *Fisheries Act*.

Net Impacts

With the implementation of the HDD construction method and the above mitigation and protective measures, no significant adverse residual impacts on aquatic species or habitat are anticipated.

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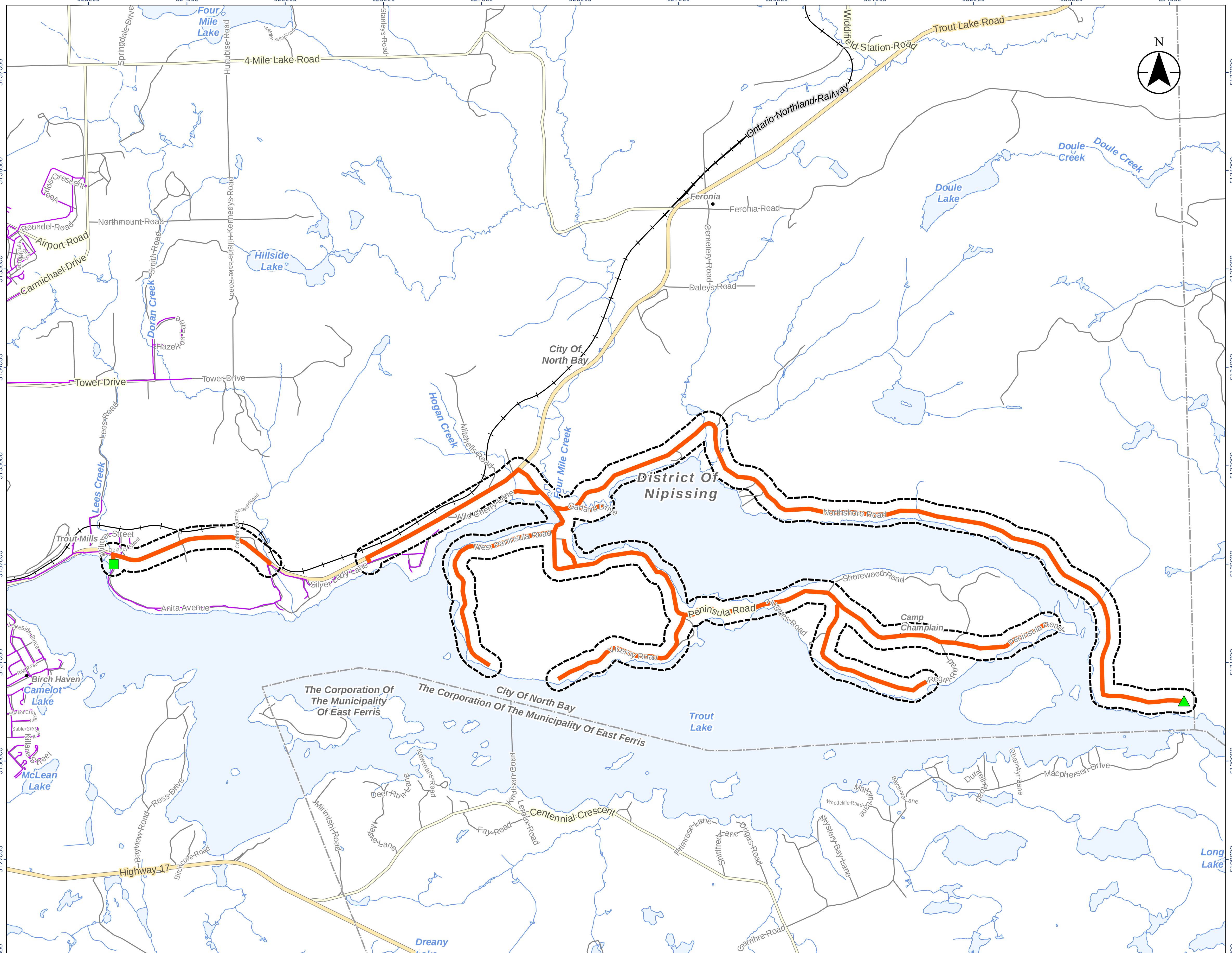
APPENDIX A: FIGURES



Legend
- Study Area
- Start Point
- End Point
- Proposed Pipeline Location
- Distribution Pipeline (UG)
- Highway
- Major Road
- Minor Road
- Railway
- Watercourse (Intermittent)
- Watercourse (Permanent)
- Waterbody
- Municipal Boundary, Upper Tier
- Municipal Boundary, Lower Tier

0 500 1,000 m

1:40,000 (At original document size of 11x17)

Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2018.

Project Location
District of Nipissing

160961225 REVA
Prepared by PW on 2018-04-06
Technical Review by DH on 2017-06-01
Independent Review by MK on 2018-04-06

Client/Project
UNION GAS LIMITED
COMMUNITY EXPANSIONS - PHASE 3
NORTH BAY – NORTHSHORE AND PENINSULA ROADS

Figure No.
1

Title
Project Location and Study Area

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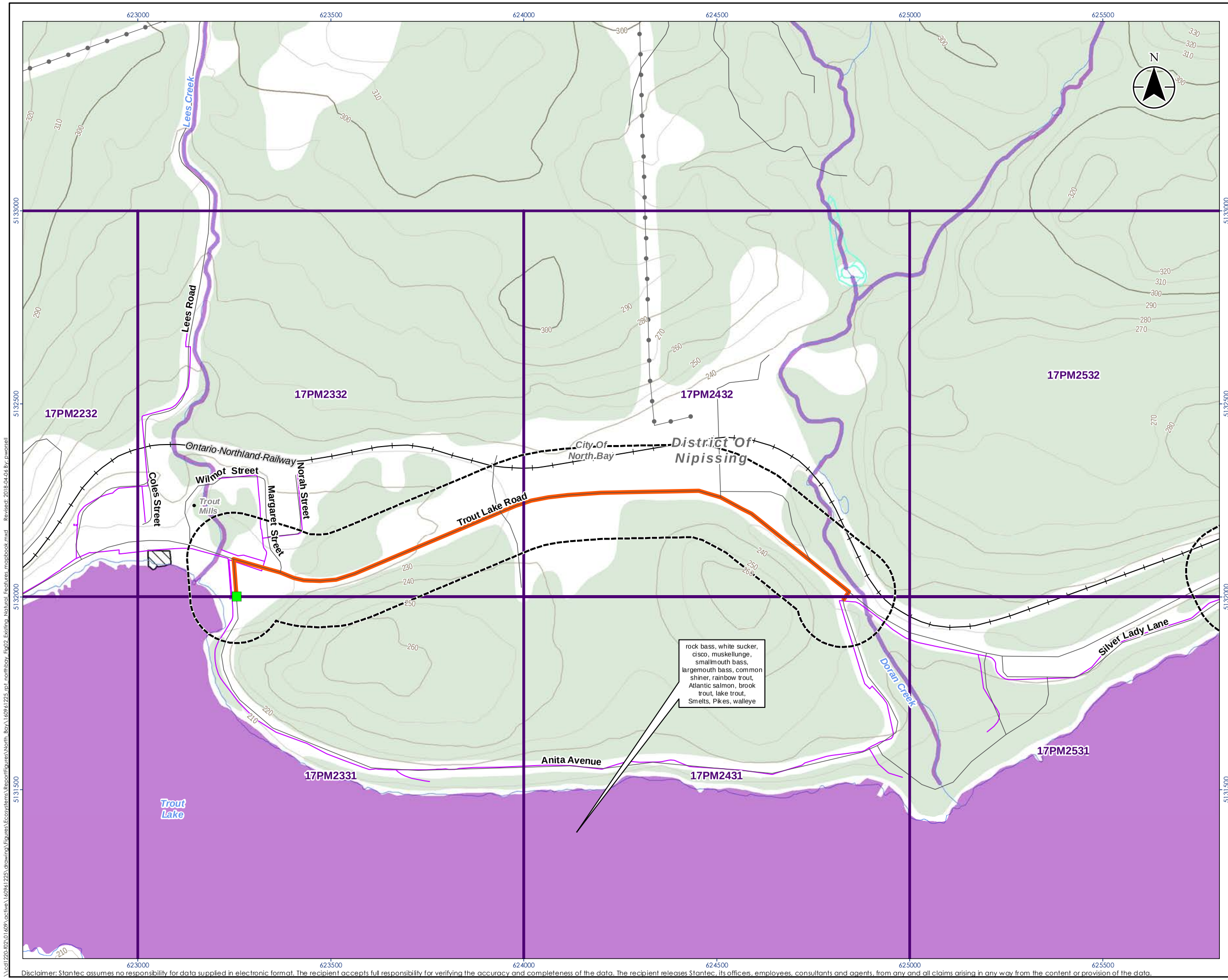

Stantec

Legend

- Study Area
- Start Point
- Proposed Pipeline Location
- Distribution Pipeline (UG)
- Thermal Regime, Cold
- Road
- Railway
- Hydro Line
- Watercourse (Permanent)
- Thermal Regime, Cold
- Waterbody
- Wetland, Not evaluated per OWES
- Municipal Boundary, Upper Tier
- Municipal Boundary, Lower Tier
- Airport
- NHIC 1 km Grid
- Wooded Area

0 250 500 m

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Notes
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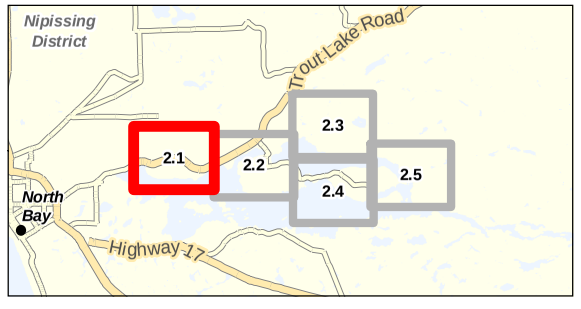

Project Location
District of Nipissing

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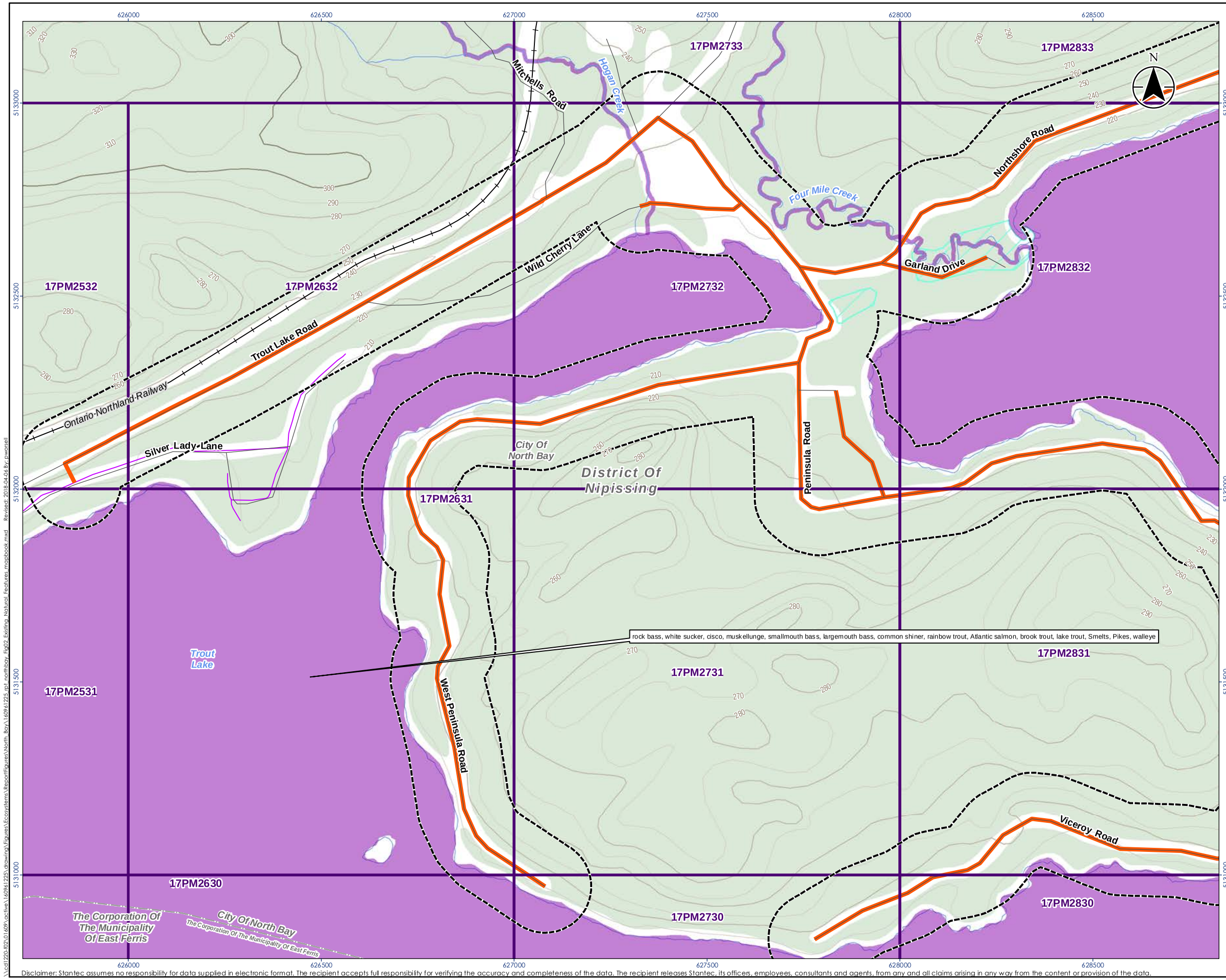
Client/Project
UNION GAS LIMITED
COMMUNITY EXPANSIONS - PHASE 3
NORTH BAY – NORTHSHORE AND PENINSULA ROADS

Figure No.
2.1

Title
Existing Natural Features



Stantec

Legend
- Study Area
- Proposed Pipeline Location
- Distribution Pipeline (UG)
- Thermal Regime, Cold
- Road
- Railway
- Watercourse (Permanent)
- Thermal Regime, Cold
- Waterbody
- Wetland, Not evaluated per OWES
- Municipal Boundary, Upper Tier
- Municipal Boundary, Lower Tier
- NHIC 1 km Grid
- Wooded Area

0 250 500 m

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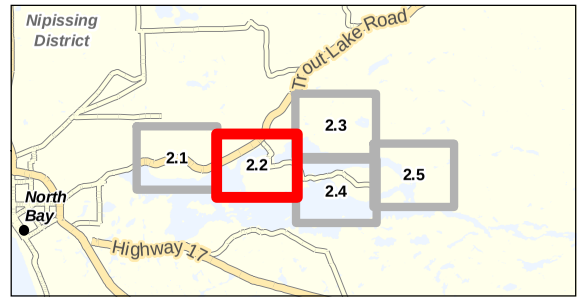

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District of Nipissing

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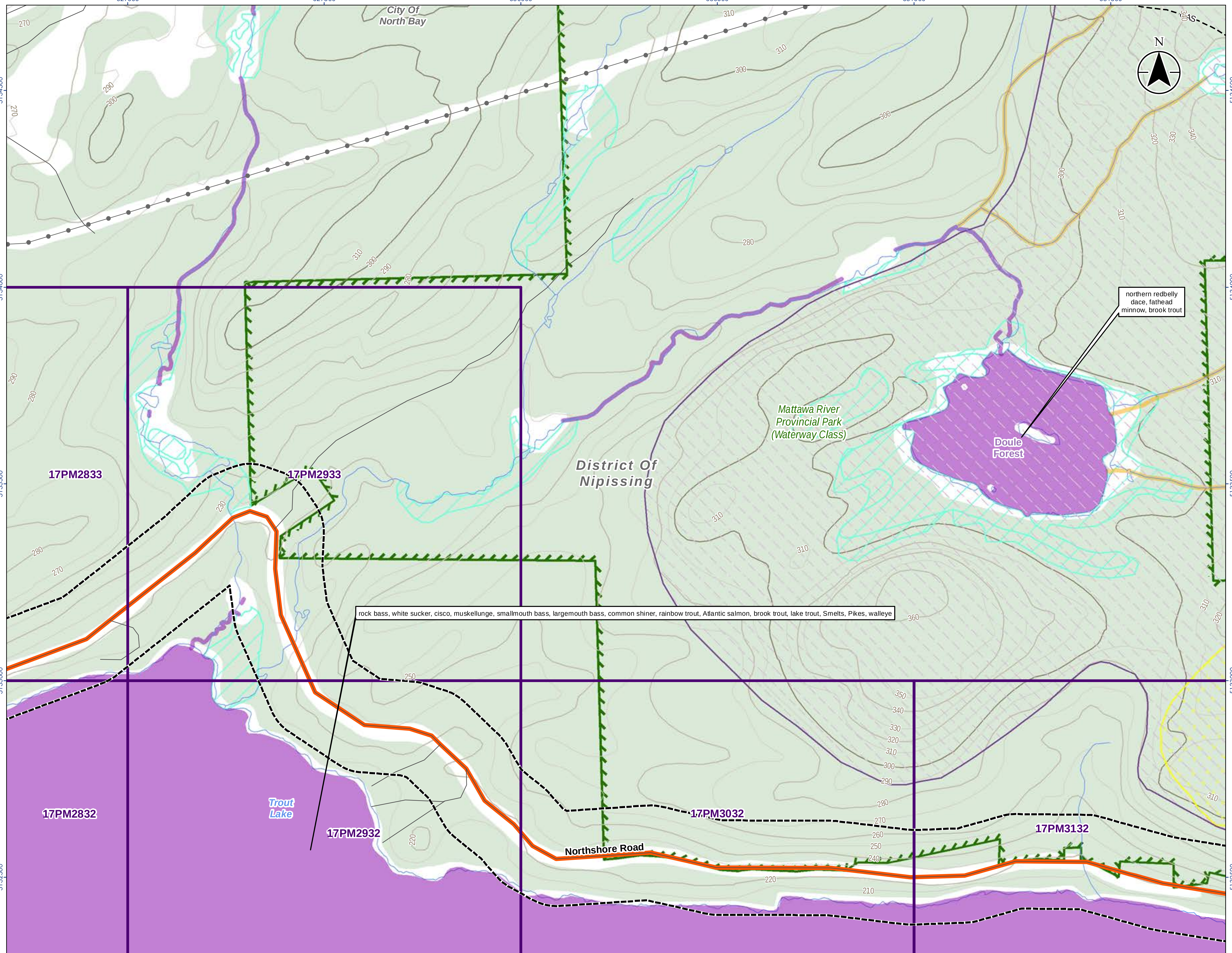
Client/Project
UNION GAS LIMITED
COMMUNITY EXPANSIONS - PHASE 3
NORTH BAY – NORTHSHORE AND PENINSULA ROADS

Figure No.
2.2

Title
Existing Natural Features



Stantec

Legend
- Study Area
- Proposed Pipeline Location
- Thermal Regime, Cold
- Thermal Regime, Warm
- Road
- Hydro Line
- Natural Gas Pipeline
- Watercourse (Permanent)
- Candidate ANSI, Life Science
- Provincial Park
- Significant Ecological Area (No-Cut Area)
- Thermal Regime, Cold
- Waterbody
- Wetland, Not evaluated per OWES
- Municipal Boundary, Upper Tier
- Municipal Boundary, Lower Tier
- NHIC 1 km Grid
- Wooded Area

0 250 500 m

1:10,000 (At original document size of 11x17)

Notes
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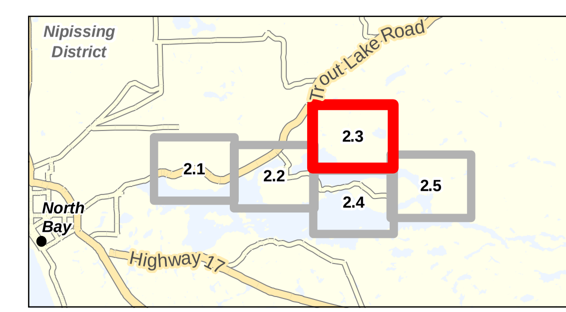

Project Location
District of Nipissing

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Prepared by PW on 2018-04-06
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Client/Project
UNION GAS LIMITED
COMMUNITY EXPANSIONS - PHASE 3
NORTH BAY – NORTHSHORE AND PENINSULA ROADS

Figure No.
2.3

Title
Existing Natural Features

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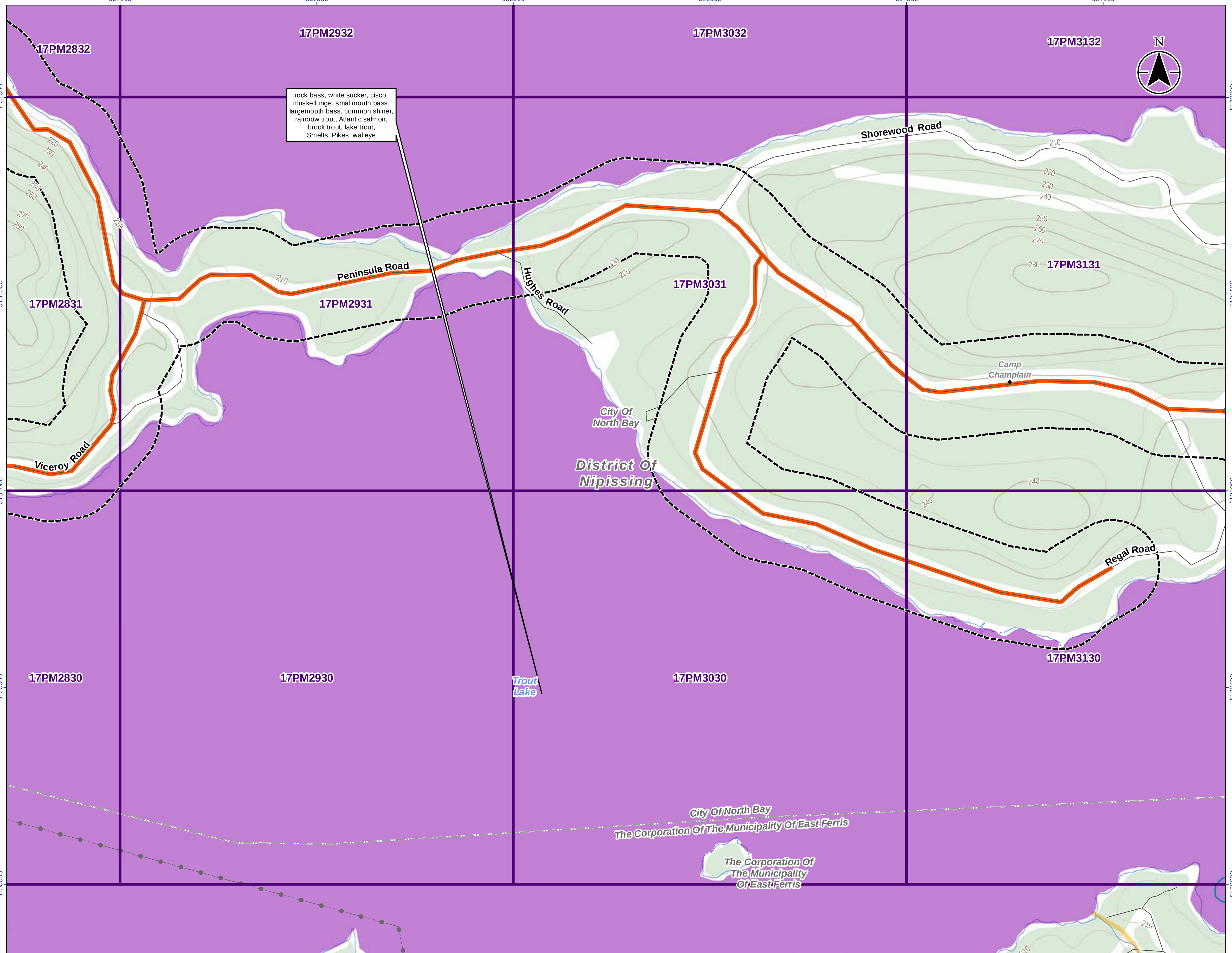

Stantec

Legend
- Study Area
- Proposed Pipeline Location
- Thermal Regime, Warm
- Road
- Submerged Hydro Line
- Watercourse (Permanent)
- Spawning Area
- Thermal Regime, Cold
- Waterbody
- Wetland, Not evaluated per OWES
- Municipal Boundary, Upper Tier
- Municipal Boundary, Lower Tier
- NHIC 1 km Grid
- Wooded Area

0 250 500 m

1:10,000 (At original document size of 11x17)

Notes
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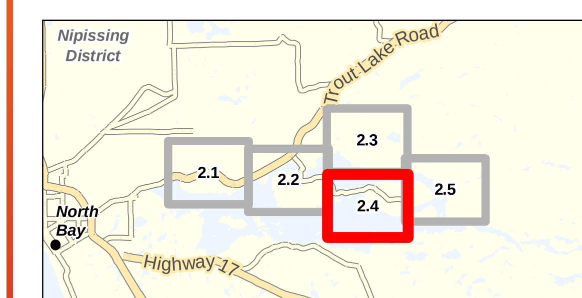

Project Location
District of Nipissing

160961225 REVA
Prepared by PW on 2018-04-06
Technical Review by DH on 2017-06-01
Independent Review by MK on 2018-04-06

Client/Project
UNION GAS LIMITED
COMMUNITY EXPANSIONS - PHASE 3
NORTH BAY – NORTHSHORE AND PENINSULA ROADS

Figure No.
2.4

Title
Existing Natural Features

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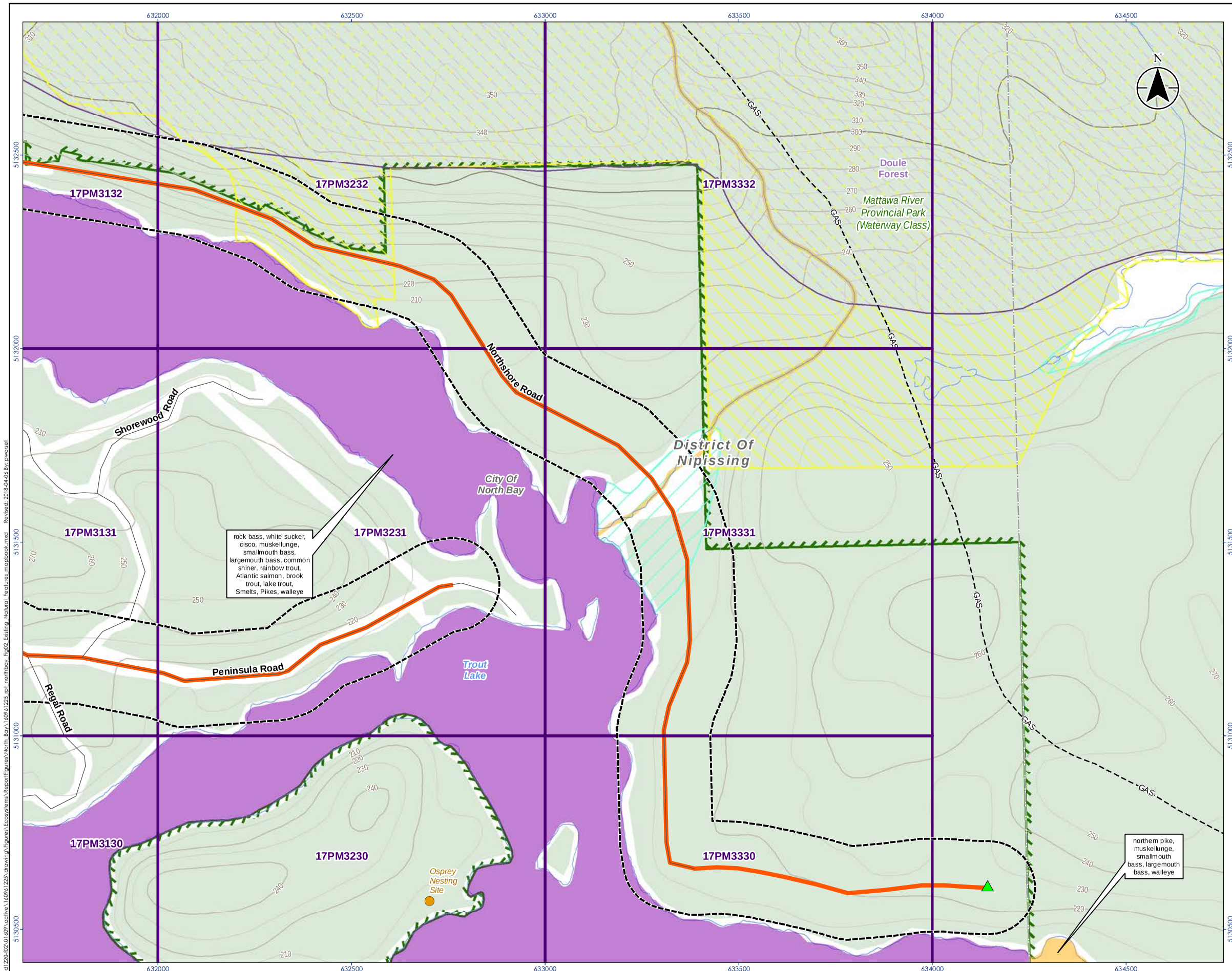

Stantec

Legend
- Study Area
- End Point
- Proposed Pipeline Location
- Nesting Site
- Thermal Regime, Warm
- Road
- Natural Gas Pipeline
- Watercourse (Permanent)
- Candidate ANSI, Life Science
- Provincial Park
- Significant Ecological Area (No-Cut Area)
- Thermal Regime, Cold
- Thermal Regime, Warm
- Waterbody
- Wetland, Not evaluated per OWES
- Municipal Boundary, Upper Tier
- Municipal Boundary, Lower Tier
- NHIC 1 km Grid
- Wooded Area

0 250 500 m

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Notes
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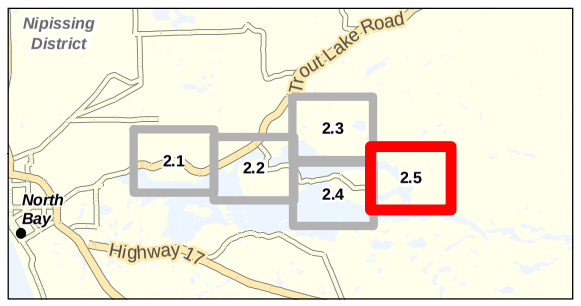

Project Location
District of Nipissing

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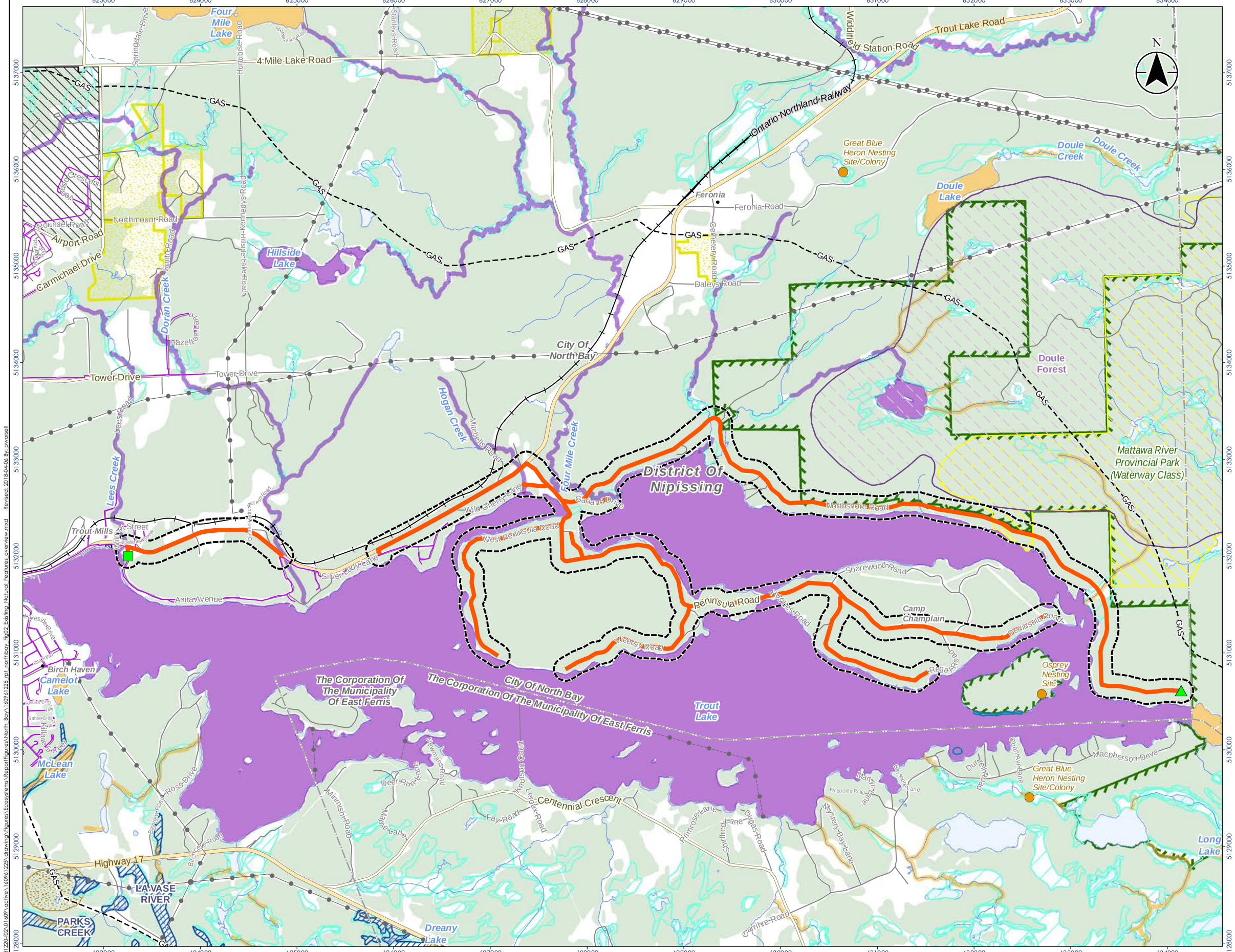
Client/Project
UNION GAS LIMITED
COMMUNITY EXPANSIONS - PHASE 3
NORTH BAY – NORTHSHORE AND PENINSULA ROADS

Figure No.
2.5

Title
Existing Natural Features



Legend

- Study Area
- Start Point
- End Point
- Proposed Pipeline Location
- Distribution Pipeline (UG)
- Nesting Site
- Highway
- Major Road
- Minor Road
- Hydro Line
- Submerged Hydro Line
- Natural Gas Pipeline
- Railway
- Watercourse (Intermittent)
- Watercourse (Permanent)
- Watercourse Thermal Regime, Cold
- Watercourse Thermal Regime, Warm
- Aggregate Site - Active
- Airport
- Deer Wintering Area
- Municipal Boundary, Upper Tier
- Municipal Boundary, Lower Tier
- Provincial Park
- Significant Ecological Area (No-Cut Area)
- Waterbody
- Waterbody Thermal Regime, Cold
- Waterbody Thermal Regime, Warm
- Wetland, Provincially Significant
- Wetland, Not evaluated per OWES
- Wooded Area

Notes

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Project Location
District of Nipissing

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Client/Project
UNION GAS LIMITED
COMMUNITY EXPANSIONS - PHASE 3
NORTH BAY – NORTHSHORE AND PENINSULA ROADS

Figure No.
2.0

Title
Existing Natural Features

Stantec

Legend

- Study Area
- Start Point
- Proposed Pipeline Location
- Distribution Pipeline (UG)
- Railway
- Watercourse (Permanent)
- Waterbody
- Vegetation Community Ecosite (FRI)

Ecosite Code	Vegetation Community Description
G048	Dry to Fresh, Coarse: Red Pine – White Pine Conifer
G054	Dry to Fresh, Coarse: Red Pine – White Pine Mixedwood
G055	Dry to Fresh, Coarse Loamy: Aspen - Birch Hardwood
G057	Dry to Fresh, Coarse: Oak Hardwood
G058	Dry to Fresh, Coarse: Maple Hardwood
G059	Dry to Fresh, Coarse: Mixedwood
G064	Moist, Coarse: Red Pine – White Pine Conifer
G066	Moist, Coarse Loamy: Hemlock - Cedar Conifer
G067	Moist, Coarse: Spruce - Fir Conifer
G070	Moist, Coarse Loamy: Aspen - Birch Hardwood
G075	Moist, Coarse: Maple Hardwood
G076	Moist, Coarse: Mixedwood
G130	Intolerant Hardwood Swamp
G140	Open Moderately Rich Fen
G142	Mineral Meadow Marsh
G197	Early Successional Forest - Disturbed - Pavement/Concrete

0 250 500 m

1:10,000 (At original document size of 11x17)

Notes

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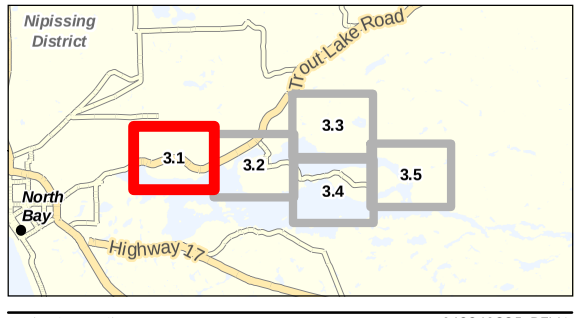

Project Location
District of Nipissing

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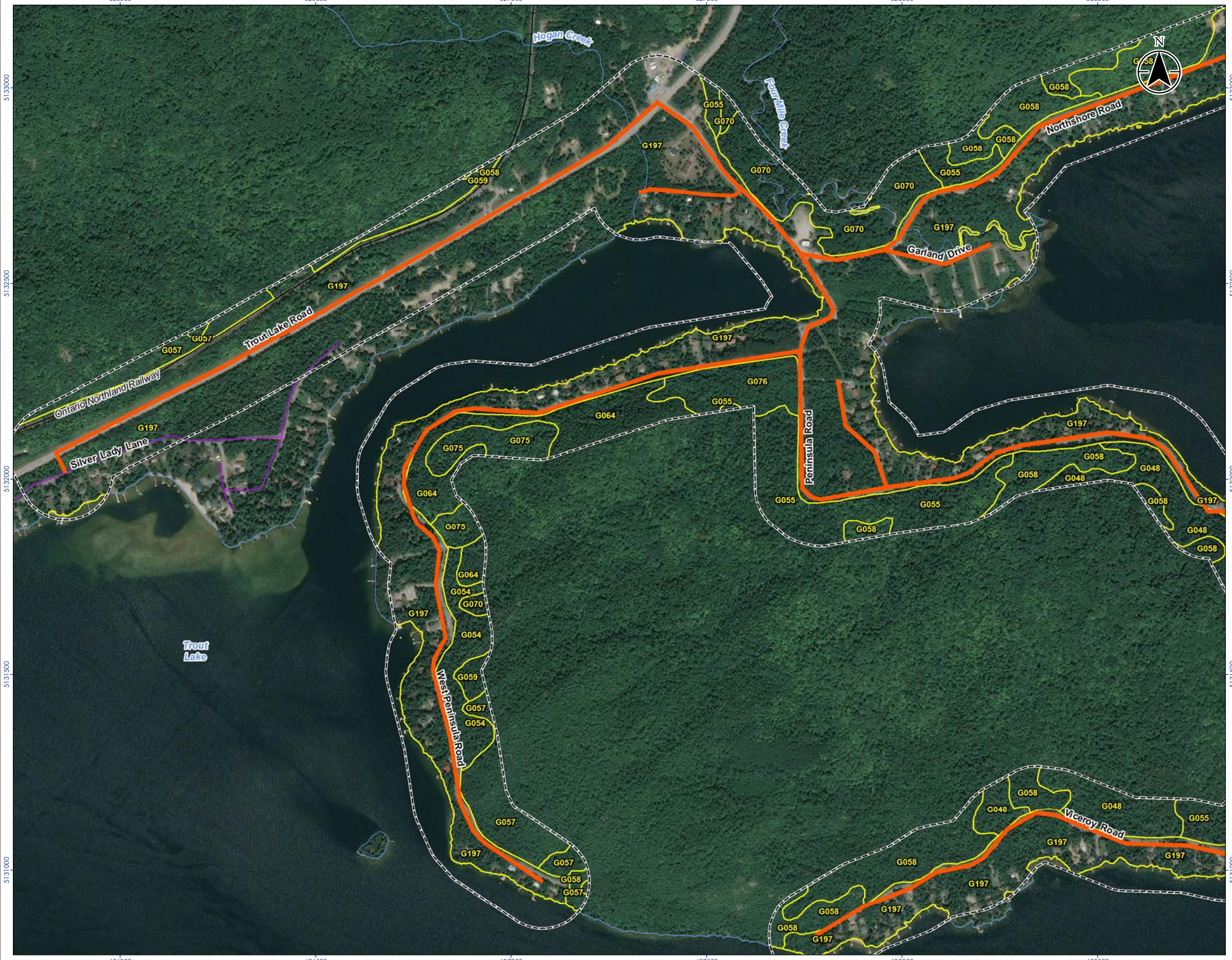
Client/Project
UNION GAS LIMITED
COMMUNITY EXPANSIONS - PHASE 3
NORTH BAY – NORTHSHORE AND PENINSULA ROADS

Figure No.
3.1

Title
FRI Vegetation Communities



Stantec

Legend

- Study Area
- Proposed Pipeline Location
- Distribution Pipeline (UG)
- Railway
- Watercourse (Permanent)
- Waterbody
- Vegetation Community Ecosite (FRI)

Ecosite Code	Vegetation Community Description
G048	Dry to Fresh, Coarse: Red Pine – White Pine Conifer
G054	Dry to Fresh, Coarse: Red Pine – White Pine Mixedwood
G055	Dry to Fresh, Coarse Loamy: Aspen - Birch Hardwood
G057	Dry to Fresh, Coarse: Oak Hardwood
G058	Dry to Fresh, Coarse: Maple Hardwood
G059	Dry to Fresh, Coarse: Mixedwood
G064	Moist, Coarse: Red Pine – White Pine Conifer
G066	Moist, Coarse Loamy: Hemlock - Cedar Conifer
G067	Moist, Coarse: Spruce - Fir Conifer
G070	Moist, Coarse Loamy: Aspen - Birch Hardwood
G075	Moist, Coarse: Maple Hardwood
G076	Moist, Coarse: Mixedwood
G130	Intolerant Hardwood Swamp
G140	Open Moderately Rich Fen
G142	Mineral Meadow Marsh
G197	Early Successional Forest - Disturbed - Pavement/Concrete

0 250 500 m

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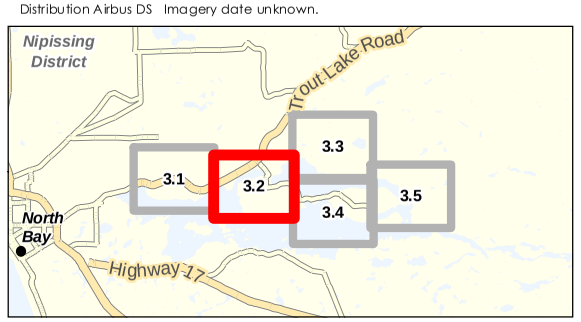

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District of Nipissing

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Client/Project
UNION GAS LIMITED
COMMUNITY EXPANSIONS - PHASE 3
NORTH BAY – NORTHSHORE AND PENINSULA ROADS

Figure No.
3.2

Title
FRI Vegetation Communities

Stantec

Legend
- Study Area
- Proposed Pipeline Location
- Watercourse (Permanent)
- Waterbody
- Vegetation Community Ecosite (FRI)

Ecosite Code	Vegetation Community Description
G048	Dry to Fresh, Coarse: Red Pine – White Pine Conifer
G054	Dry to Fresh, Coarse: Red Pine – White Pine Mixedwood
G055	Dry to Fresh, Coarse Loamy: Aspen - Birch Hardwood
G057	Dry to Fresh, Coarse: Oak Hardwood
G058	Dry to Fresh, Coarse: Maple Hardwood
G059	Dry to Fresh, Coarse: Mixedwood
G064	Moist, Coarse: Red Pine – White Pine Conifer
G066	Moist, Coarse Loamy: Hemlock - Cedar Conifer
G067	Moist, Coarse: Spruce - Fir Conifer
G070	Moist, Coarse Loamy: Aspen - Birch Hardwood
G075	Moist, Coarse: Maple Hardwood
G076	Moist, Coarse: Mixedwood
G130	Intolerant Hardwood Swamp
G140	Open Moderately Rich Fen
G142	Mineral Meadow Marsh
G197	Early Successional Forest - Disturbed - Pavement/Concrete

0 250 500 m

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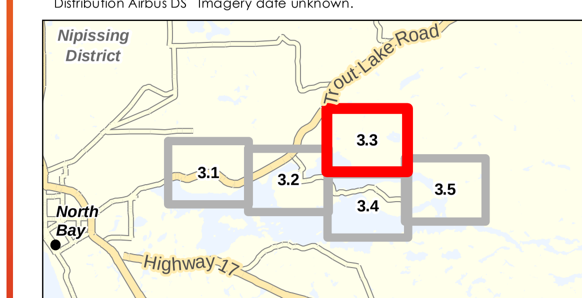

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Client/Project
UNION GAS LIMITED
COMMUNITY EXPANSIONS - PHASE 3
NORTH BAY – NORTHSHORE AND PENINSULA ROADS

Figure No.
3.3

Title
FRI Vegetation Communities

Stantec

Legend

- Study Area
- Proposed Pipeline Location
- Watercourse (Permanent)
- Waterbody
- Vegetation Community Ecosite (FRI)

Ecosite Code	Vegetation Community Description
G048	Dry to Fresh, Coarse: Red Pine – White Pine Conifer
G054	Dry to Fresh, Coarse: Red Pine – White Pine Mixedwood
G055	Dry to Fresh, Coarse Loamy: Aspen - Birch Hardwood
G057	Dry to Fresh, Coarse: Oak Hardwood
G058	Dry to Fresh, Coarse: Maple Hardwood
G059	Dry to Fresh, Coarse: Mixedwood
G064	Moist, Coarse: Red Pine – White Pine Conifer
G066	Moist, Coarse Loamy: Hemlock - Cedar Conifer
G067	Moist, Coarse: Spruce - Fir Conifer
G070	Moist, Coarse Loamy: Aspen - Birch Hardwood
G075	Moist, Coarse: Maple Hardwood
G076	Moist, Coarse: Mixedwood
G130	Intolerant Hardwood Swamp
G140	Open Moderately Rich Fen
G142	Mineral Meadow Marsh
G197	Early Successional Forest - Disturbed - Pavement/Concrete

0 250 500 m

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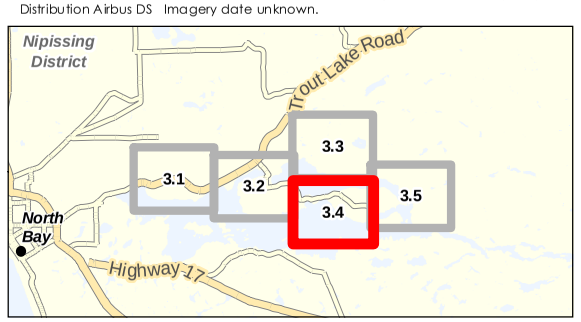

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District of Nipissing

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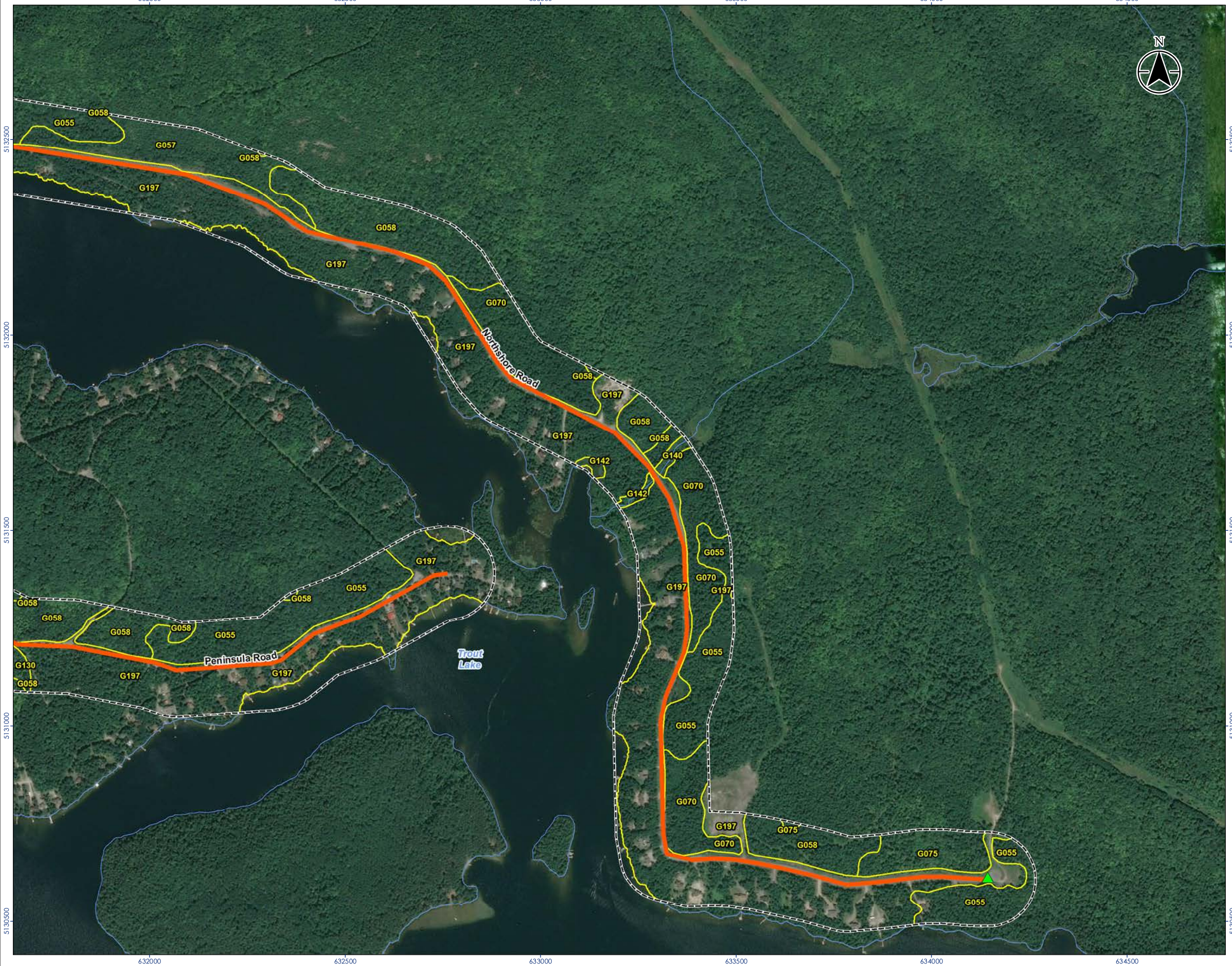
Client/Project
UNION GAS LIMITED
COMMUNITY EXPANSIONS - PHASE 3
NORTH BAY – NORTHSHORE AND PENINSULA ROADS

Figure No.
3.4

Title
FRI Vegetation Communities



Stantec

Legend

- Study Area
- End Point
- Proposed Pipeline Location
- Watercourse (Permanent)
- Waterbody
- Vegetation Community Ecosite (FRI)

Ecosite Code	Vegetation Community Description
G048	Dry to Fresh, Coarse: Red Pine – White Pine Conifer
G054	Dry to Fresh, Coarse: Red Pine – White Pine Mixedwood
G055	Dry to Fresh, Coarse Loamy: Aspen - Birch Hardwood
G057	Dry to Fresh, Coarse: Oak Hardwood
G058	Dry to Fresh, Coarse: Maple Hardwood
G059	Dry to Fresh, Coarse: Mixedwood
G064	Moist, Coarse: Red Pine – White Pine Conifer
G066	Moist, Coarse Loamy: Hemlock - Cedar Conifer
G067	Moist, Coarse: Spruce - Fir Conifer
G070	Moist, Coarse Loamy: Aspen - Birch Hardwood
G075	Moist, Coarse: Maple Hardwood
G076	Moist, Coarse: Mixedwood
G130	Intolerant Hardwood Swamp
G140	Open Moderately Rich Fen
G142	Mineral Meadow Marsh
G197	Early Successional Forest - Disturbed - Pavement/Concrete

0 250 500 m

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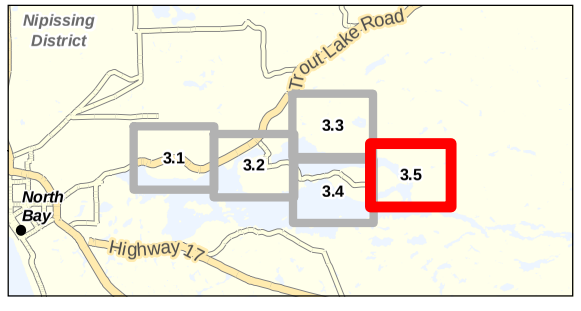

Project Location
District of Nipissing

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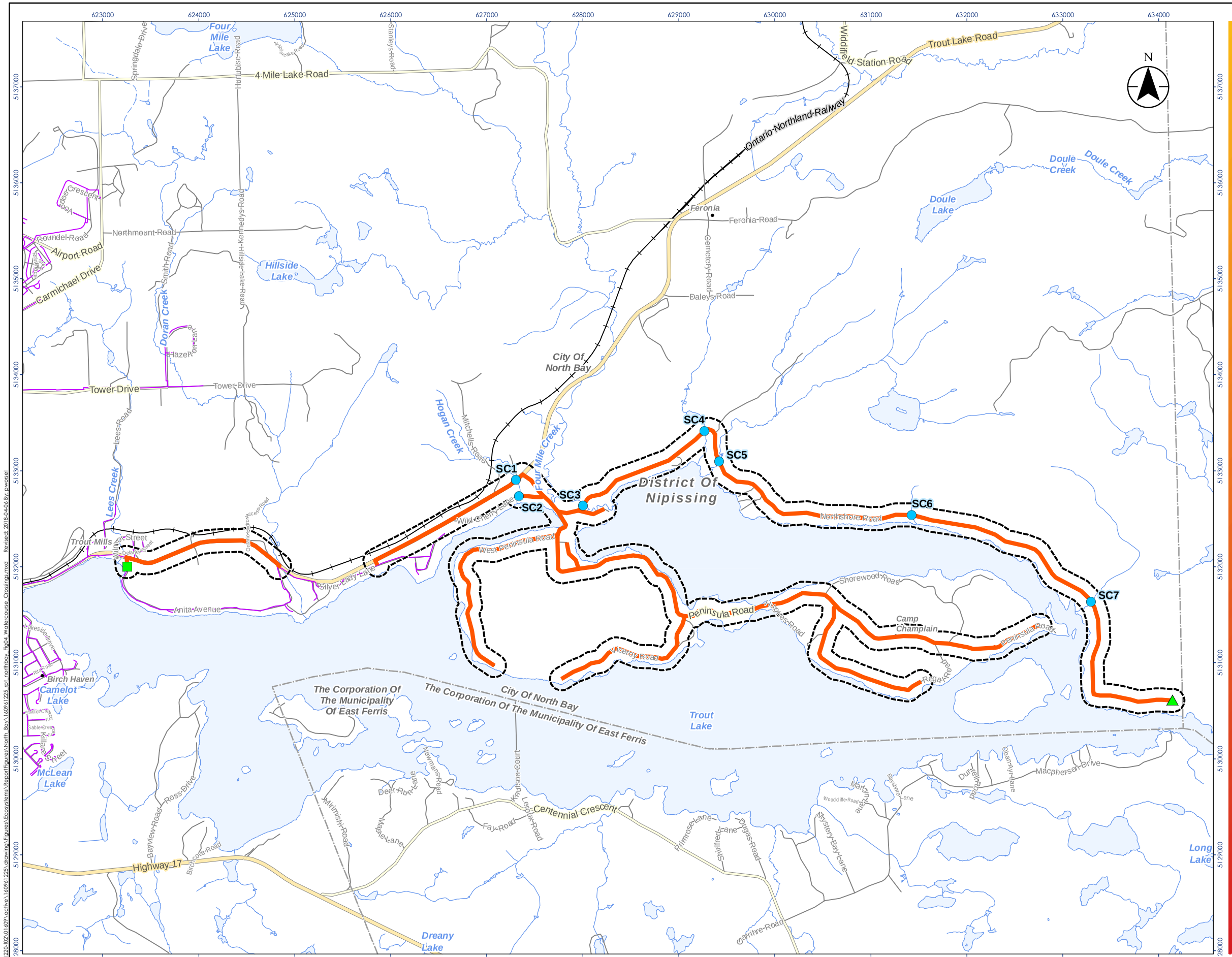
Client/Project
UNION GAS LIMITED
COMMUNITY EXPANSIONS - PHASE 3
NORTH BAY – NORTHSHORE AND PENINSULA ROADS

Figure No.
3.5

Title
FRI Vegetation Communities



Legend

- Study Area
- Start Point
- End Point
- Watercourse Crossing
- Proposed Pipeline Location
- Distribution Pipeline (UG)
- Highway
- Major Road
- Minor Road
- Railway
- Watercourse (Intermittent)
- Watercourse (Permanent)
- Waterbody
- Municipal Boundary, Upper Tier
- Municipal Boundary, Lower Tier

Notes

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Project Location
District of Nipissing

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Client/Project
UNION GAS LIMITED
COMMUNITY EXPANSIONS - PHASE 3
NORTH BAY – NORTHSHORE AND PENINSULA ROADS

Figure No.
4

Title
Watercourse Crossings

Legend

- Study Area
- Start Point
- Potential Turtle Nesting
- Wetland
- Proposed Pipeline Location
- Distribution Pipeline (UG)
- Railway
- Watercourse (Permanent)
- Waterbody

0 250 500 m

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Notes

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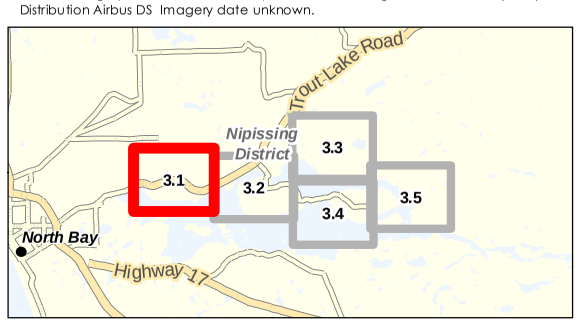

Project Location
District of Nipissing

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Prepared by PW on 2019-01-30
Technical Review by DH on 2017-06-01
Independent Review by MK on 2019-01-30

Client/Project
UNION GAS LIMITED
COMMUNITY EXPANSIONS - PHASE 3
NORTH BAY – NORTHSHORE AND PENINSULA ROADS

Figure No.
1.1

Title
Natural Heritage Mitigations

Reptile Habitat (turtles and snakes)

Specific

- Exclusion fencing (e.g. silt fence to be erected at the locations shown on the map- 30 metres from feature).
- Where possible, restrict all activities within 30 m of the areas identified on the map as Potential Turtle Nesting.
- If work needs to occur within the areas identified on the map as Potential Turtle Nesting between May 1-June 30, a pre-screening exercise must be completed by a trained, designated representative to prevent turtles from entering and/or nesting in the construction area.
- No heavy machinery to be permitted on the shoulder of the road past the exclusion fencing to prevent compaction and destruction of turtle nests and habitat.
- Where snakes or turtles may inadvertently enter the active construction area, construction activities will cease until the snake or turtle have left the active construction area on their own accord.

Wetlands

Specific

- Cross wetlands encroaching the road RoW using HDD, if possible.
- Wetlands adjacent to the RoW, where HDD is not being implemented, should have silt fencing installed.
- Construction material, excess material, construction debris and empty containers to be stored away from adjacent wetlands.
- Temporary work space width to be minimized when working within 30 m of wetlands, where practical.
- Staging areas to be located at least 10 m away from the edge of wetlands.

General

- All activities, including equipment maintenance and refueling to be controlled to prevent entry of petroleum products or other deleterious substances, including any debris, waste, rubble, or concrete material, into a wetland.
- In the unlikely event of a spill, spills containment and clean-up procedures to be implemented immediately. Union Gas to contact the Ministry of Environment, Conservation and Parks (MECP) Spills Action Centre. The MECP Spills Action Centre is the first point of contact for spills at the provincial and federal level.
- Construction dewatering to be discharged to sediment removal basins if discharge to a well-vegetated dry area is not feasible. Locate the sediment removal basin in an area that maximizes the distance to the nearest surface water feature and minimize the slope of the surrounding buffer area. The basin to consist of a temporary enclosure constructed with hay bales, silt fence or both.
- Erosion control:
  - Surface runoff to be directed as overland flow with sufficient drainage structures to dissipate hydraulic energy
  - Soil transport to be prevented by diversion of site runoff through shallow vegetated channels, placement of straw bales or sediment control fencing
  - Sediment barriers to be installed along the edge of the road allowance to contain spoil within the road allowance, where required
  - Natural drainage spacing to be provided around spoil piles
  - Temporary erosion/silt control structures (i.e. straw bales, sediment fencing) to be used down gradient of spoil stockpiles, as necessary
  - Temporary sediment barriers to be maintained until soils are stabilized
  - Vegetation clearing not to be conducted within 30 m of a wetland unless required for site construction activity (i.e. within the road allowance)
  - If vegetation regeneration is unlikely to occur immediately following construction (i.e. outside the growing season), all impacted slopes adjacent to wetlands to be stabilized using geogrids or weed-free mulch for a minimum of 30 m from the wetland
  - Erosion control measures in both active and non-active construction areas to be regularly inspected until the site has been adequately stabilized to prevent erosion

Vegetation

Specific

- The amount of tree clearing to be kept to a minimum.
- Tree and vegetation removal (including meadows, thickets, woodlands, and forests) to be completed outside of the combined bat roosting and migratory bird nesting season (April 15 to August 31) to avoid disturbance to nesting birds protected under the MBCA and birds and bats protected by the ESA 2007. Removals during this restricted time should be kept to a minimum, and only if the requirements of the MBCA are met by completing nest clearing surveys by qualified individuals no more than seven days prior to any clearing activities.

General

- Comply with municipal requirements or permits for tree cutting.
- Encroachment into adjacent wooded areas to be avoided and individual tree removal minimized.
- Construction traffic to be restricted to the existing road allowance where possible to avoid potential compression damage to the root zones of trees located adjacent to the road allowance.
- High-traffic or erosion-prone areas of the road allowance to be revegetated with suitable protective cover.
- Reclamation in residential/commercial land areas traversed by the road allowance to involve seeding (or sodding) the disturbed areas and replacement of ornamental trees and shrubs.
- Where the pipeline route encroaches on the drip line of specimen trees (i.e. large diameter Oak trees), HDD may be considered to protect the root system where feasible
- Understory vegetation beneath the drip line of specimen trees to be retained in an undisturbed state, where possible
- Any specimen trees or other vegetation to be retained to be surrounded by temporary protective fencing or other measures before any clearing or grading occurs

Seed mix in natural areas

- Site specific conditions such as climate, soil types and terrain are to be considered
- Only local native species to be included
- A fast-growing seed mixture requiring little or no maintenance to be selected
- Seed mixture to be consistent with the land use of the area
- If there is no suitable local native seed mix available but seeding is deemed desirable to promote rapid revegetation of an area, a non-invasive annual nurse crop such as annual ryegrass to be used instead
- Purchased seed to be certified free of weeds

Wildlife

General

- Incidents involving wildlife to be documented and reported to the MNRF.
- Food waste and other debris to be properly contained, collected and removed from the site daily to an approved disposal facility.
- No dogs are permitted on the work site.
- Information is to be provided to workers on SAR identification and associated habitat (including nesting characteristics, where applicable).
- If a SAR is observed, work is to be stopped immediately in the vicinity to prevent harm or harassment of the individual. Efforts should be undertaken to allow species to move from the work space under their own accord. Contact Alymer MNRF prior to any movement of the species. The species can be removed by a qualified biologist using approved MNRF handling protocols and relocated away from the construction area to prevent incidental harm once the MNRF has been notified and actions have been approved.

Watercourse Crossings

- Watercourse crossings to follow the Union Gas's DFO-endorsed Watercourse Crossing Agreement.

Stantec

Legend
- Study Area
- Exclusion Fencing
- Potential Turtle Nesting
- Wetland
- Proposed Pipeline Location
- Distribution Pipeline (UG)
- Railway
- Watercourse (Permanent)
- Waterbody

0 250 500 m

1:10,000 (At original document size of 11x17)

Notes
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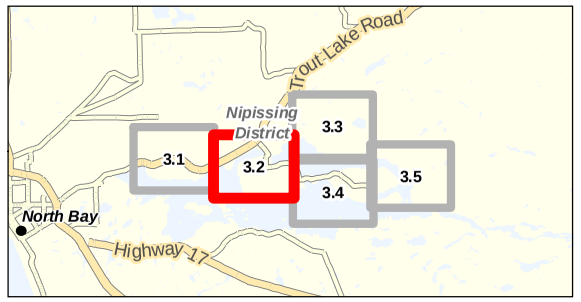

Project Location
District of Nipissing

160961225 REVA
Prepared by PW on 2019-01-30
Technical Review by DH on 2017-06-01
Independent Review by MK on 2019-01-30

Client/Project
UNION GAS LIMITED
COMMUNITY EXPANSIONS - PHASE 3
NORTH BAY – NORTHSHORE AND PENINSULA ROADS

Figure No.
1.2

Title
Natural Heritage Mitigations

Reptile Habitat (turtles and snakes)

Specific

- Exclusion fencing (e.g. silt fence to be erected at the locations shown on the map- 30 metres from feature).
- Where possible, restrict all activities within 30 m of the areas identified on the map as Potential Turtle Nesting.
- If work needs to occur within the areas identified on the map as Potential Turtle Nesting between May 1-June 30, a pre-screening exercise must be completed by a trained, designated representative to prevent turtles from entering and/or nesting in the construction area.
- No heavy machinery to be permitted on the shoulder of the road past the exclusion fencing to prevent compaction and destruction of turtle nests and habitat.
- Where snakes or turtles may inadvertently enter the active construction area, construction activities will cease until the snake or turtle have left the active construction area on their own accord.

Wetlands

Specific

- Cross wetlands encroaching the road RoW using HDD, if possible.
- Wetlands adjacent to the RoW, where HDD is not being implemented, should have silt fencing installed.
- Construction material, excess material, construction debris and empty containers to be stored away from adjacent wetlands.
- Temporary work space width to be minimized when working within 30 m of wetlands, where practical.
- Staging areas to be located at least 10 m away from the edge of wetlands.

General

- All activities, including equipment maintenance and refueling to be controlled to prevent entry of petroleum products or other deleterious substances, including any debris, waste, rubble, or concrete material, into a wetland.
- In the unlikely event of a spill, spills containment and clean-up procedures to be implemented immediately. Union Gas to contact the Ministry of Environment, Conservation and Parks (MECP) Spills Action Centre. The MECP Spills Action Centre is the first point of contact for spills at the provincial and federal level.
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- Erosion control:
  - Surface runoff to be directed as overland flow with sufficient drainage structures to dissipate hydraulic energy
  - Soil transport to be prevented by diversion of site runoff through shallow vegetated channels, placement of straw bales or sediment control fencing
  - Sediment barriers to be installed along the edge of the road allowance to contain spoil within the road allowance, where required
  - Natural drainage spacing to be provided around spoil piles
  - Temporary erosion/silt control structures (i.e. straw bales, sediment fencing) to be used down gradient of spoil stockpiles, as necessary
  - Temporary sediment barriers to be maintained until soils are stabilized
  - Vegetation clearing not to be conducted within 30 m of a wetland unless required for site construction activity (i.e. within the road allowance)
  - If vegetation regeneration is unlikely to occur immediately following construction (i.e. outside the growing season), all impacted slopes adjacent to wetlands to be stabilized using geogrids or weed-free mulch for a minimum of 30 m from the wetland
  - Erosion control measures in both active and non-active construction areas to be regularly inspected until the site has been adequately stabilized to prevent erosion

Vegetation

Specific

- The amount of tree clearing to be kept to a minimum.
- Tree and vegetation removal (including meadows, thickets, woodlands, and forests) to be completed outside of the combined bat roosting and migratory bird nesting season (April 15 to August 31) to avoid disturbance to nesting birds protected under the MBCA and birds and bats protected by the ESA 2007. Removals during this restricted time should be kept to a minimum, and only if the requirements of the MBCA are met by completing nest clearing surveys by qualified individuals no more than seven days prior to any clearing activities.

General

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- Construction traffic to be restricted to the existing road allowance where possible to avoid potential compression damage to the root zones of trees located adjacent to the road allowance.
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- Reclamation in residential/commercial land areas traversed by the road allowance to involve seeding (or sodding) the disturbed areas and replacement of ornamental trees and shrubs.
- Where the pipeline route encroaches on the drip line of specimen trees (i.e. large diameter Oak trees), HDD may be considered to protect the root system where feasible
- Understory vegetation beneath the drip line of specimen trees to be retained in an undisturbed state, where possible
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Seed mix in natural areas

- Site specific conditions such as climate, soil types and terrain are to be considered
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- Seed mixture to be consistent with the land use of the area
- If there is no suitable local native seed mix available but seeding is deemed desirable to promote rapid revegetation of an area, a non-invasive annual nurse crop such as annual ryegrass to be used instead
- Purchased seed to be certified free of weeds

Wildlife

General

- Incidents involving wildlife to be documented and reported to the MNRF.
- Food waste and other debris to be properly contained, collected and removed from the site daily to an approved disposal facility.
- No dogs are permitted on the work site.
- Information is to be provided to workers on SAR identification and associated habitat (including nesting characteristics, where applicable).
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Watercourse Crossings

- Watercourse crossings to follow the Union Gas's DFO-endorsed Watercourse Crossing Agreement.

Stantec

Legend
- Study Area
- Exclusion Fencing
- Potential Turtle Nesting
- Wetland
- Proposed Pipeline Location
- Watercourse (Permanent)
- Waterbody

0 250 500 m

1:10,000 (At original document size of 11x17)

Notes
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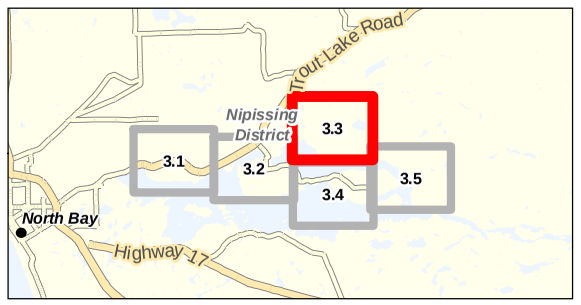

Project Location
District of Nipissing

160961225 REVA
Prepared by PW on 2019-01-30
Technical Review by DH on 2017-06-01
Independent Review by MK on 2019-01-30

Client/Project
UNION GAS LIMITED
COMMUNITY EXPANSIONS - PHASE 3
NORTH BAY – NORTHSHORE AND PENINSULA ROADS

Figure No.
1.3

Title
Natural Heritage Mitigations

Reptile Habitat (turtles and snakes)

Specific

- Exclusion fencing (e.g. silt fence to be erected at the locations shown on the map- 30 metres from feature).
- Where possible, restrict all activities within 30 m of the areas identified on the map as Potential Turtle Nesting.
- If work needs to occur within the areas identified on the map as Potential Turtle Nesting between May 1-June 30, a pre-screening exercise must be completed by a trained, designated representative to prevent turtles from entering and/or nesting in the construction area.
- No heavy machinery to be permitted on the shoulder of the road past the exclusion fencing to prevent compaction and destruction of turtle nests and habitat.
- Where snakes or turtles may inadvertently enter the active construction area, construction activities will cease until the snake or turtle have left the active construction area on their own accord.

Wetlands

Specific

- Cross wetlands encroaching the road RoW using HDD, if possible.
- Wetlands adjacent to the RoW, where HDD is not being implemented, should have silt fencing installed.
- Construction material, excess material, construction debris and empty containers to be stored away from adjacent wetlands.
- Temporary work space width to be minimized when working within 30 m of wetlands, where practical.
- Staging areas to be located at least 10 m away from the edge of wetlands.

General

- All activities, including equipment maintenance and refueling to be controlled to prevent entry of petroleum products or other deleterious substances, including any debris, waste, rubble, or concrete material, into a wetland.
- In the unlikely event of a spill, spills containment and clean-up procedures to be implemented immediately. Union Gas to contact the Ministry of Environment, Conservation and Parks (MECP) Spills Action Centre. The MECP Spills Action Centre is the first point of contact for spills at the provincial and federal level.
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- Erosion control:
  - Surface runoff to be directed as overland flow with sufficient drainage structures to dissipate hydraulic energy
  - Soil transport to be prevented by diversion of site runoff through shallow vegetated channels, placement of straw bales or sediment control fencing
  - Sediment barriers to be installed along the edge of the road allowance to contain spoil within the road allowance, where required
  - Natural drainage spacing to be provided around spoil piles
  - Temporary erosion/silt control structures (i.e. straw bales, sediment fencing) to be used down gradient of spoil stockpiles, as necessary
  - Temporary sediment barriers to be maintained until soils are stabilized
  - Vegetation clearing not to be conducted within 30 m of a wetland unless required for site construction activity (i.e. within the road allowance)
  - If vegetation regeneration is unlikely to occur immediately following construction (i.e. outside the growing season), all impacted slopes adjacent to wetlands to be stabilized using geogrids or weed-free mulch for a minimum of 30 m from the wetland
  - Erosion control measures in both active and non-active construction areas to be regularly inspected until the site has been adequately stabilized to prevent erosion

Vegetation

Specific

- The amount of tree clearing to be kept to a minimum.
- Tree and vegetation removal (including meadows, thickets, woodlands, and forests) to be completed outside of the combined bat roosting and migratory bird nesting season (April 15 to August 31) to avoid disturbance to nesting birds protected under the MBCA and birds and bats protected by the ESA 2007. Removals during this restricted time should be kept to a minimum, and only if the requirements of the MBCA are met by completing nest clearing surveys by qualified individuals no more than seven days prior to any clearing activities.

General

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- Reclamation in residential/commercial land areas traversed by the road allowance to involve seeding (or sodding) the disturbed areas and replacement of ornamental trees and shrubs.
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- Understory vegetation beneath the drip line of specimen trees to be retained in an undisturbed state, where possible
- Any specimen trees or other vegetation to be retained to be surrounded by temporary protective fencing or other measures before any clearing or grading occurs

Seed mix in natural areas

- Site specific conditions such as climate, soil types and terrain are to be considered
- Only local native species to be included
- A fast-growing seed mixture requiring little or no maintenance to be selected
- Seed mixture to be consistent with the land use of the area
- If there is no suitable local native seed mix available but seeding is deemed desirable to promote rapid revegetation of an area, a non-invasive annual nurse crop such as annual ryegrass to be used instead
- Purchased seed to be certified free of weeds

Wildlife

General

- Incidents involving wildlife to be documented and reported to the MNRF.
- Food waste and other debris to be properly contained, collected and removed from the site daily to an approved disposal facility.
- No dogs are permitted on the work site.
- Information is to be provided to workers on SAR identification and associated habitat (including nesting characteristics, where applicable).
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Watercourse Crossings

- Watercourse crossings to follow the Union Gas's DFO-endorsed Watercourse Crossing Agreement.

Legend
- Study Area
- Exclusion Fencing
- Potential Turtle Nesting
- Wetland
- Proposed Pipeline Location
- Watercourse (Permanent)
- Waterbody

0 250 500 m

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Notes
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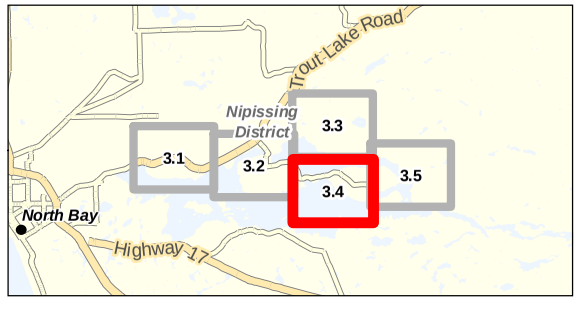

Project Location
District of Nipissing

160961225 REVA
Prepared by PW on 2019-01-30
Technical Review by DH on 2017-06-01
Independent Review by MK on 2019-01-30

Client/Project
UNION GAS LIMITED
COMMUNITY EXPANSIONS - PHASE 3
NORTH BAY – NORTHSHORE AND PENINSULA ROADS

Figure No.
1.4

Title
Natural Heritage Mitigations

Reptile Habitat (turtles and snakes)

Specific

- Exclusion fencing (e.g. silt fence to be erected at the locations shown on the map- 30 metres from feature).
- Where possible, restrict all activities within 30 m of the areas identified on the map as Potential Turtle Nesting.
- If work needs to occur within the areas identified on the map as Potential Turtle Nesting between May 1-June 30, a pre-screening exercise must be completed by a trained, designated representative to prevent turtles from entering and/or nesting in the construction area.
- No heavy machinery to be permitted on the shoulder of the road past the exclusion fencing to prevent compaction and destruction of turtle nests and habitat.
- Where snakes or turtles may inadvertently enter the active construction area, construction activities will cease until the snake or turtle have left the active construction area on their own accord.

Wetlands

Specific

- Cross wetlands encroaching the road RoW using HDD, if possible.
- Wetlands adjacent to the RoW, where HDD is not being implemented, should have silt fencing installed.
- Construction material, excess material, construction debris and empty containers to be stored away from adjacent wetlands.
- Temporary work space width to be minimized when working within 30 m of wetlands, where practical.
- Staging areas to be located at least 10 m away from the edge of wetlands.

General

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Vegetation

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Seed mix in natural areas

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Wildlife

General

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Watercourse Crossings

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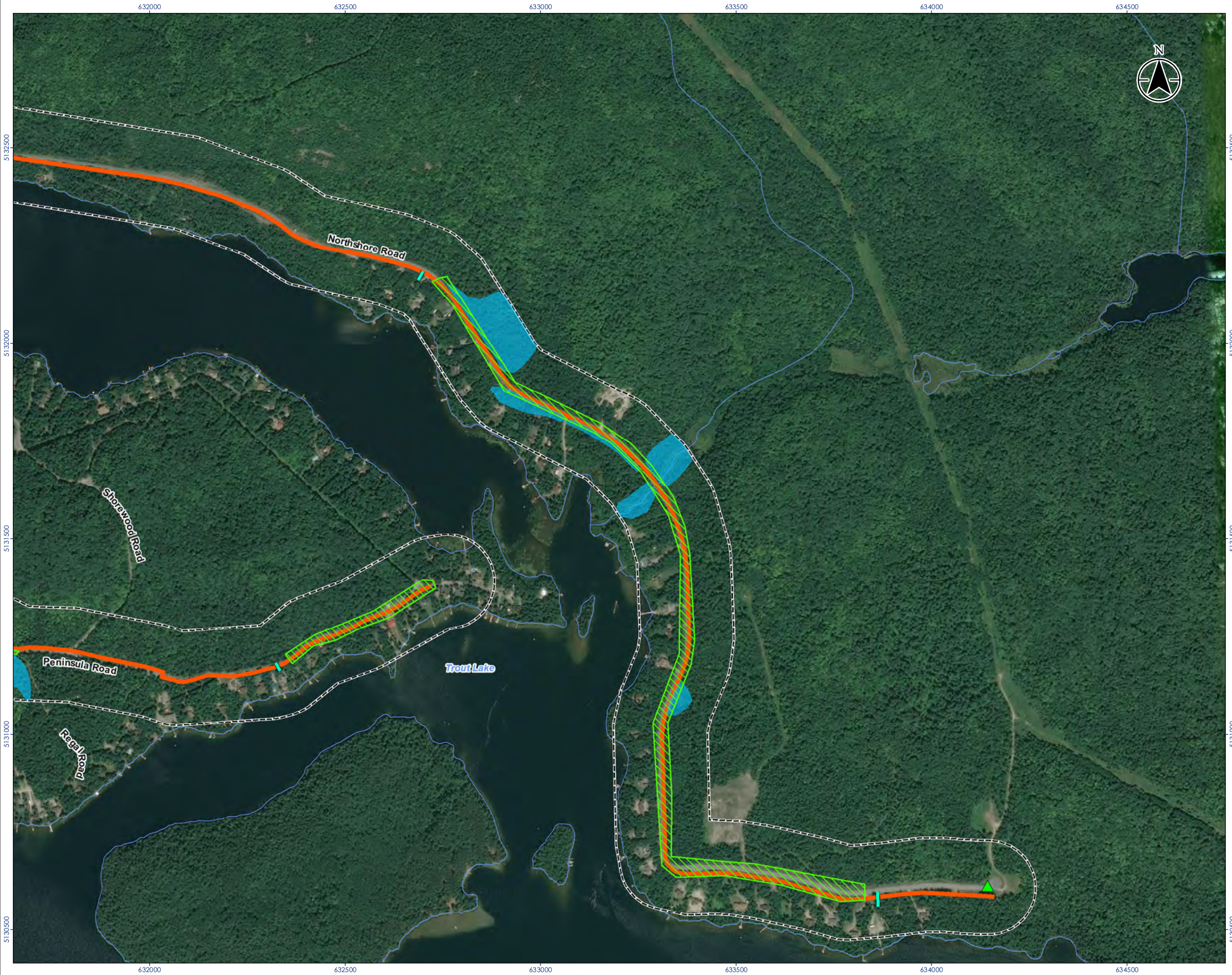

Stantec

Legend
- Study Area
- End Point
- Exclusion Fencing
- Potential Turtle Nesting
- Wetland
- Proposed Pipeline Location
- Watercourse (Permanent)
- Waterbody

0 250 500 m

1:10,000 (At original document size of 11x17)

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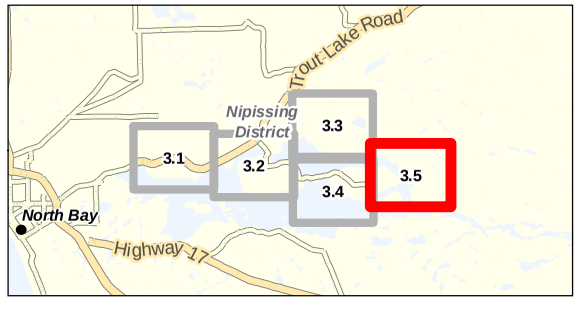

Project Location
District of Nipissing

160961225 REVA
Prepared by PW on 2019-01-30
Technical Review by DH on 2017-06-01
Independent Review by MK on 2019-01-30

Client/Project
UNION GAS LIMITED
COMMUNITY EXPANSIONS - PHASE 3
NORTH BAY – NORTHSHORE AND PENINSULA ROADS

Figure No.
1.5

Title
Natural Heritage Mitigations

\\Cd1220-f02\work_group\01609\active\160961225\drawing\figures\Ecosystem\ReportFigures\North Bay\Mitigation\160961225_mit_NorthBay_Fig01_Natural Heritage_Mitigation.mxd Revised: 2019-01-30 By: dhorvey

Reptile Habitat (turtles and snakes)

Specific

- Exclusion fencing (e.g. silt fence to be erected at the locations shown on the map- 30 metres from feature).
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- Construction material, excess material, construction debris and empty containers to be stored away from adjacent wetlands.
- Temporary work space width to be minimized when working within 30 m of wetlands, where practical.
- Staging areas to be located at least 10 m away from the edge of wetlands.

General

- All activities, including equipment maintenance and refueling to be controlled to prevent entry of petroleum products or other deleterious substances, including any debris, waste, rubble, or concrete material, into a wetland.
- In the unlikely event of a spill, spills containment and clean-up procedures to be implemented immediately. Union Gas to contact the Ministry of Environment, Conservation and Parks (MECP) Spills Action Centre. The MECP Spills Action Centre is the first point of contact for spills at the provincial and federal level.
- Construction dewatering to be discharged to sediment removal basins if discharge to a well-vegetated dry area is not feasible. Locate the sediment removal basin in an area that maximizes the distance to the nearest surface water feature and minimize the slope of the surrounding buffer area. The basin to consist of a temporary enclosure constructed with hay bales, silt fence or both.
- Erosion control:
  - Surface runoff to be directed as overland flow with sufficient drainage structures to dissipate hydraulic energy
  - Soil transport to be prevented by diversion of site runoff through shallow vegetated channels, placement of straw bales or sediment control fencing
  - Sediment barriers to be installed along the edge of the road allowance to contain spoil within the road allowance, where required
  - Natural drainage spacing to be provided around spoil piles
  - Temporary erosion/silt control structures (i.e. straw bales, sediment fencing) to be used down gradient of spoil stockpiles, as necessary
  - Temporary sediment barriers to be maintained until soils are stabilized
  - Vegetation clearing not to be conducted within 30 m of a wetland unless required for site construction activity (i.e. within the road allowance)
  - If vegetation regeneration is unlikely to occur immediately following construction (i.e. outside the growing season), all impacted slopes adjacent to wetlands to be stabilized using geogrids or weed-free mulch for a minimum of 30 m from the wetland
  - Erosion control measures in both active and non-active construction areas to be regularly inspected until the site has been adequately stabilized to prevent erosion

Vegetation

Specific

- The amount of tree clearing to be kept to a minimum.
- Tree and vegetation removal (including meadows, thickets, woodlands, and forests) to be completed outside of the combined bat roosting and migratory bird nesting season (April 15 to August 31) to avoid disturbance to nesting birds protected under the MBCA and birds and bats protected by the ESA 2007. Removals during this restricted time should be kept to a minimum, and only if the requirements of the MBCA are met by completing nest clearing surveys by qualified individuals no more than seven days prior to any clearing activities.

General

- Comply with municipal requirements or permits for tree cutting.
- Encroachment into adjacent wooded areas to be avoided and individual tree removal minimized.
- Construction traffic to be restricted to the existing road allowance where possible to avoid potential compression damage to the root zones of trees located adjacent to the road allowance.
- High-traffic or erosion-prone areas of the road allowance to be revegetated with suitable protective cover.
- Reclamation in residential/commercial land areas traversed by the road allowance to involve seeding (or sodding) the disturbed areas and replacement of ornamental trees and shrubs.
- Where the pipeline route encroaches on the drip line of specimen trees (i.e. large diameter Oak trees), HDD may be considered to protect the root system where feasible
- Understory vegetation beneath the drip line of specimen trees to be retained in an undisturbed state, where possible
- Any specimen trees or other vegetation to be retained to be surrounded by temporary protective fencing or other measures before any clearing or grading occurs

Seed mix in natural areas

- Site specific conditions such as climate, soil types and terrain are to be considered
- Only local native species to be included
- A fast-growing seed mixture requiring little or no maintenance to be selected
- Seed mixture to be consistent with the land use of the area
- If there is no suitable local native seed mix available but seeding is deemed desirable to promote rapid revegetation of an area, a non-invasive annual nurse crop such as annual ryegrass to be used instead
- Purchased seed to be certified free of weeds

Wildlife

General

- Incidents involving wildlife to be documented and reported to the MNRF.
- Food waste and other debris to be properly contained, collected and removed from the site daily to an approved disposal facility.
- No dogs are permitted on the work site.
- Information is to be provided to workers on SAR identification and associated habitat (including nesting characteristics, where applicable).
- If a SAR is observed, work is to be stopped immediately in the vicinity to prevent harm or harassment of the individual. Efforts should be undertaken to allow species to move from the work space under their own accord. Contact Alymer MNRF prior to any movement of the species. The species can be removed by a qualified biologist using approved MNRF handling protocols and relocated away from the construction area to prevent incidental harm once the MNRF has been notified and actions have been approved.

Watercourse Crossings

- Watercourse crossings to follow the Union Gas's DFO-endorsed Watercourse Crossing Agreement.

Ministry of the Environment, Conservation and Parks

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Téléc.: (705) 564-4180

Ontario

April 7, 2020

Evan Tomek,
Sr. Analyst Environment
Enbridge Inc.
745 Richmond Street
Chatham, Ontario
N7M 5J5

Dear Mr. Tomek:

Re: Hydrogeological Study and Spill Prevention and Response Procedures for the Union Gas Northshore & Peninsula Roads Natural Gas Pipeline Expansion Project, North bay, Ontario

Thank-you for providing the Ministry of the Environment, Conservation and Parks (MECP) the opportunity to comment on the following documents:

1. *Letter Report titled "Natural Gas Pipeline Community Expansion Project Hydrogeological Study - North Bay (File #160961225)".* Prepared by Stantec Consulting Limited, dated May 28, 2019.
2. *Safe Work Procedures and Spill Response (Safety*-04-16, Rev.3). Prepared by NPL Canada Limited, dated August 19, 2016.

MECP comments are restricted to the groundwater related components of the above-noted documents. Based on the information provided in the hydrogeological report the proposed pipeline will be constructed using 32mm to 102mm diameter plastic pipe and will be installed via trenchless method (i.e. horizontal directional drilling) to an expected depth of between 0.6m and 1m, with a maximum depth at road and culvert crossing up to 5m. Trenching may be used as contingency and will have a maximum depth of 2m.

Dewatering of groundwater may be required where trenching is implemented and depending on the extraction quantities a permit to take water may be required.

The hydrogeological study reviewed MECP water well database and identified 112 wells within 500m of the pipeline. Reported water levels within these wells during drilling and installation ranged from the ground surface to 10m below the ground surface, indicating

that shallow groundwater may exist in some locations along the pipeline route. The pipeline route is predominantly within low lying areas where shallow groundwater level is anticipated and as such groundwater is likely to be intercepted during the pipeline construction which may require dewatering. During the horizontal drilling mud will be used which has the potential to impact on groundwater quality. Any water intercepted during the construction should be disposed off appropriately.

During the construction there is potential for impact to water quality and quantity in the water wells located in the vicinity of the pipeline. Stantec reports that 44 residential wells and several residences are located within 100m of the proposed pipeline construction.

In general, MECP concurs with Union Gas's private well monitoring program to address potential interference concerns prior to any construction activities. However, it is recommended that a door-to-door survey of residences within the 100m is carried out to identify all water wells.

Details of well depths and water levels must be identified and documented to ensure that all the water wells at risk of impacts are included in the monitoring program. To this end it is strongly recommended that all shallow wells within the 100m of the proposed pipeline are included in the program.

MECP had identified fuel storage located near the intersection of Northshore and Peninsula Roads. Stantec reports the presence of fuel pump and above ground fuel storage tank at this location based on available street level imaging. It is strongly recommended that this information is confirmed with the TSSA. If any contamination (soil or groundwater) is encountered during the construction appropriate investigation and remediation should be implemented in consultation with the MECP.

The proposed spill response procedures appear reasonable for the project. However, it is further recommended that containers for storage of chemicals and fuels are stored in an impermeable area to protect groundwater and surface water quality.

If you have any questions regarding the above comments, please do not hesitate to contact me either at (705) 507-5136 or at Shelley.Wainio2@ontario.ca

Regards,

Shelley Wainio

Shelley Wainio
EA/Planning Coordinator
MECP Northern Region

From: [redacted]
To: [redacted] (MECP)
Subject: RE: UGL North Bay: Northshore & Peninsula Roads
Date: Thursday, April 9, 2020 1:38:00 PM

Thanks [redacted] – you too!

[redacted]

[redacted], BES
Sr. Analyst, Environment
Enbridge Inc.
50 Keil Drive North | Chatham, ON N7M 5M1
Tel: 519.436.4600 ext 5003441
Cell: 226.229.9598
email [redacted]@enbridge.com
Safety. Integrity. Respect.

From: [redacted] (MECP) [redacted]@ontario.ca>
Sent: Thursday, April 9, 2020 1:36 PM
To: [redacted]@enbridge.com>
Subject: [External] RE: UGL North Bay: Northshore & Peninsula Roads

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Thank you for your response. Have a great Easter weekend!

Regards,

[redacted]
705-507-5136

From: [redacted]@enbridge.com>
Sent: April 9, 2020 11:58 AM
To: [redacted] (MECP) <S[redacted]@ontario.ca>
Subject: RE: UGL North Bay: Northshore & Peninsula Roads

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Hi [redacted],

Thank you for your comments and I hope all is well with you too.
I appreciate your review and comments/recommendations on the Hydrogeological Study and Spill

Plan – it is useful information.
To provide an update on the Well Monitoring Program, Stantec will be delivering well monitoring notification letters to all residences within 100 m of the proposed pipeline by the end of April 2020. Appropriate investigation and remediation in consultation with the MECP will be implemented should soil or groundwater contamination be encountered during construction. Enbridge will also store chemicals and fuels appropriately in impermeable areas to protect groundwater and surface water quality.

Thanks again and please let me know if you have any questions.

[redacted]

[redacted], BES
Sr. Analyst, Environment
Enbridge Inc.
50 Keil Drive North | Chatham, ON N7M 5M1
Tel: 519.436.4600 ext 5003441
Cell: 226.229.9598
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From: [redacted] (MECP) <[redacted]@ontario.ca>
Sent: Thursday, April 9, 2020 10:07 AM
To: [redacted]@enbridge.com>
Subject: [External] FW: UGL North Bay: Northshore & Peninsula Roads

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Hi E[redacted],
I hope all is well with you. Attached are MECP comments related to the hydroG report and the spill response plan you had submitted. I understand that these comments are coming to you after some time, however, I thought I would provide them as they may prove useful.

Regards,

[redacted]
705-507-5136

From: [redacted]@uniongas.com>
Sent: May 28, 2019 2:23 PM
To [redacted] MECP) <[redacted]@ontario.ca>; [redacted] (MECP) <[redacted]@ontario.ca>
Subject: RE: UGL North Bay: Northshore & Peninsula Roads

Hi [redacted],

Enbridge Inc. Operating as Union Gas (Enbridge) retained Stantec to complete a Hydrogeological Study for the proposed natural gas pipeline which would provide natural gas service to the residents and businesses in the Northshore/Peninsula Roads area of North Bay. I have attached a copy of the Study for your review, as per your request.

The Study was developed to:

- Review local hydrogeologic conditions to determine the risk from proposed construction activity to private wells and determine the need for and extent of private well monitoring
- Identify areas of construction that will be below the groundwater level and indicate how impacts will be mitigated
- Detail a procedure for addressing private well complaints

I have also attached a copy of the Contractor's Spill Response Procedure, as requested.

If you have any questions, please let me know.

Thanks,

[redacted]
Sr. Analyst, Environment
Enbridge Inc.
745 Richmond Street | Chatham, ON N7M 5J5
Tel: 519.436.2460 ext 5236904
Cell: 226.229.9598
email: [redacted]@uniongas.com

From: [redacted] (MECP) [mailto[redacted]@ontario.ca]
Sent: October-15-18 8:55 AM
To: [redacted] (MECP)
Subject: [External] RE: UGL North Bay: Northshore & Peninsula Roads

Hi [redacted],

I note the following statements you have provided:

For similar distribution pipeline projects located within the road allowance, the hydrogeologist retained by Union Gas has identified private shallow wells located in close proximity to the proposed pipeline installation and offered to provide well monitoring as requested by the well owner. The strategy for the hydrogeological study will be determined by the hydrogeologist prior to construction and the MECP will be provided a copy of the proposed hydrogeological study strategy and the results of the study itself.

If Union Gas receives a complaint related to well impacts the hydrogeologist will immediately investigate the complaint, which may involve additional well water analyses to compare to the pre-construction results. If it is identified that the well has been adversely impacted by construction activities it is the responsibility of Union Gas to provide a temporary or permanent water supply until the situation is resolved.

Please submit the hydrogeological study strategy to the MECP as soon as possible for comments prior to undertaking the study. All water supply wells must be identified and any requirement for shallow groundwater dewatering identified. It is strongly recommended that pre-construction water analysis and water level monitoring is implemented before the start of construction.

Thanks,

[redacted], **M.Sc., P.Geo.** | Regional Hydrogeologist | Ministry of the Environment, Conservation and Parks | 199 Larch St., Suite 1201, Sudbury, ON P3E 5P9 | Ph: 705-564-3253 | Fax: 705-564-4180 |
Email: [redacted]@ontario.ca

From: [redacted]@uniongas.com]
Sent: October-02-18 10:00 AM
To: [redacted])
Subject: RE: UGL North Bay: Northshore & Peninsula Roads

Hi [redacted],

Thank you for your email and the map showing the fuel storage area along the proposed pipeline route.

For similar distribution pipeline projects located within the road allowance, the hydrogeologist retained by Union Gas has identified private shallow wells located in close proximity to the proposed pipeline installation and offered to provide well monitoring as requested by the well owner. The strategy for the hydrogeological study will be determined by the hydrogeologist prior to construction and the MECP will be provided a copy of the proposed hydrogeological study strategy and the results of the study itself.

If Union Gas receives a complaint related to well impacts the hydrogeologist will immediately investigate the complaint, which may involve additional well water analyses to compare to the pre-construction results. If it is identified that the well has been adversely impacted by construction activities it is the responsibility of Union Gas to provide a temporary or permanent water supply until the situation is resolved.

The Contractor will provide a copy of their spill plan to Union Gas prior to construction, and all spills will be reported to the MECP's Spills Action Centre. I will forward you a copy of the spill plan once I've received it.

In addition to the consultation information provided to you in Union Gas' original response letter dated July 25th, 2018 Union Gas offers the following in regards to consultation with the public, the City of North Bay, and Indigenous Communities:

Public Consultation

Union Gas retained the services of Forum Research, a third party research supplier, to conduct quantitative research to ascertain interest in obtaining natural gas service amongst the residential household and commercial business populations of Northshore, Peninsula and Trout Lake Roads. A total of 193 door-to-door interviews were completed from a list of 405 home and business owners between January 16 and January 28, 2018. The survey informed residents about the project, provided estimates of the cost to convert to natural gas, and information regarding a surcharge to contribute towards the cost of the project. The survey also requested information pertaining to dwelling characteristics, use of dwelling, current fuel type and interest in converting to natural gas-fuelled appliances.

City of North Bay

Union Gas continues robust consultations with the City of North Bay in the planning of the project. This engagement has included conference calls, face to face meetings and direct engagement with local politicians. The project planning is moving forward positively and the project construction will be carried out under the terms of the Municipal Franchise Agreement between the two parties which is approved by the Ontario Energy Board.

Indigenous Communities

Union Gas completed an Indigenous Consultation Report that was included in the project filing with the Ontario Energy Board on May 7th, 2018. The Indigenous Consultation Report includes:

- A summary of all meetings with Indigenous Communities to date;
- A summary of the concerns that were identified by the Indigenous communities and how the concerns were, or plan to be, addressed and/or accommodated; and
- A complete record of all consultation activities to date.

To see the Indigenous Consultation Report, please use the following link and refer to Tab 2, Section

B, Schedule 15:

https://www.uniongas.com/-/media/about-us/regulatory/rate-cases/eb-2018-0142-2019-community-expansion/UNION_APPL_2019CommunityExpansion_20180507.pdf?la=en&hash=2FA618D873D7ADB66AB753E4812BED7F7BA7EAA2

Thank you again for your time and please let me know if you have any questions.

[redacted], BES
Environmental Planner on behalf of
Union Gas Limited | An Enbridge Company
745 Richmond Street | Chatham, ON N7M 5J5
Tel: 519.436.2460 ext 5236904
Cell: 226.229.9598
email: [redacted]uniongas.com

From: [redacted]@ontario.ca]
Sent: August-13-18 3:43 PM
To [redacted]
Subject: [External] RE: UGL North Bay: Northshore & Peninsula Roads

Hi [redacted]
Thank you for providing us with your response to our comments and the associated studies. It would appear that Union Gas have procedures in place that address the majority of our concerns. The Ministry of Environment, Conservation and Parks (MECP) would like to be certain that impacts to the groundwater are properly assessed and planned for. In your response you mention that a hydrogeologist will be retained to review the project area and local hydrogeological conditions to identify and determine the requirements for well monitoring. We would like to make sure this study identifies the potential areas of construction that may advance beyond the groundwater table and how impacts will be mitigated. The MECP would like to have a copy of this study once complete. MECP would also like to have a copy of the spill plan, as well as the procedure for dealing with complaints related to well impacts. Lastly, we would appreciate copies of any consultation efforts made during the project.

As per your request I have attached a map from our GIS platform which shows a single record of fuel storage (red dot). For more detailed information regarding the fuel storage you will have to contact the TSSA.

Let me know if you have any questions.

Regards,

[redacted]
705-564-7171

From: [redacted]@uniongas.com]
Sent: July 25, 2018 6:49 PM
To: [redacted] (MECP)
Cc: [redacted] MECP); [redacted] (MECP)
Subject: UGL North Bay: Northshore & Peninsula Roads

Hi [redacted],

I have prepared and attached a letter in response to your comments regarding Union Gas's proposed North Bay: Northshore & Peninsula Roads Natural Gas Pipeline Project.
I have also attached the Natural Heritage Study completed by Stantec Consulting Inc., as well as Union Gas's sediment control plans which were referenced within the letter.

Thank you for your time and if you have any questions please do not hesitate to ask.

Regards,

[redacted]
Environmental Planner on behalf of
Union Gas Limited | An Enbridge Company
745 Richmond Street | Chatham, ON N7M 5J5
Tel: 519.436.2460 ext 5236904
Cell: 226.229.9598
email: [redacted]@uniongas.com

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Ministry of Tourism, Culture and Sport

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Ontario

Jul 18, 2019

Dave Norris (P307)
Woodland Heritage Services Northwest
134 College Thunder Bay ON P7A 5J5

RE: Review and Entry into the Ontario Public Register of Archaeological Reports: Archaeological Assessment Report Entitled, "Stage 1 Archaeological Assessment of a proposed Union Gas Pipeline in the City of North Bay, in Lot 14 CON C, Lot 11 CON C, Lot 10 CON C, Lot 10 CON B, Lot 9 CON C, Lot 9 CON B, Lot 8 CON B, Lot 8 CON C, Lot 7 CON B, Lot 6 CON B, Lot 5 CON B, Lot 5 CON C, Lot 4 CON B, Lot 4 CON C, Lot 3 CON B, Lot 3 CON C, Lot 2 CON C, Lot 1 CON C, in the District of Nipissing Ontario ", Dated Feb 8, 2019, Filed with MTCS Toronto Office on Jun 18, 2019, MTCS Project Information Form Number P307-0088-2018, MTCS File Number 0008727

Dear Mr. Norris:

This office has reviewed the above-mentioned report, which has been submitted to this ministry as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18.[1] This review has been carried out in order to determine whether the licensed professional consultant archaeologist has met the terms and conditions of their licence, that the licensee assessed the property and documented archaeological resources using a process that accords with the 2011 *Standards and Guidelines for Consultant Archaeologists* set by the ministry, and that the archaeological fieldwork and report recommendations are consistent with the conservation, protection and preservation of the cultural heritage of Ontario.

The report documents the Stage 1 assessment of the study area as depicted in Maps 2 and 4 of the above titled report and recommends the following:

No further archaeological assessment is required for the Union Gas pipeline route in Lot 14 CON C, Lot 11 CON C, Lot 10 CON C, Lot 10 CON B, Lot 9 CON C, Lot 9 CON B, Lot 8 CON B, Lot 8 CON C, Lot 7 CON B, Lot 6 CON B, Lot 5 CON B, Lot 5 CON C, Lot 4 CON B, Lot 4 CON C, Lot 3 CON B, Lot 3 CON C, Lot 2 CON C, Lot 1 CON C, in the City of North Bay, District of Nipissing Ontario.

Based on the information contained in the report, the ministry is satisfied that the fieldwork and reporting for the archaeological assessment are consistent with the ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* and the terms and conditions for archaeological licences. This report has been entered into the Ontario Public Register of Archaeological Reports. Please note that the ministry makes no representation or warranty as to the completeness, accuracy or quality of reports in the register.

Should you require any further information regarding this matter, please feel free to contact me.

Sincerely,

Shari Prowse
Archaeology Review Officer

cc. Archaeology Licensing Officer
Evan Tomak,Union Gas
Theodore Antonopolis,Ontario Energy Board

[1] *In no way will the ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.*

Ministry of Tourism, Culture and Sport

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Ontario

May 7, 2019 EMAIL ONLY

Evan Tomek, Environmental Planner
Union Gas Limited
P.O. Box 2001
50 Keil Drive North
Chatham, ON N7M 5M1
etomek@uniongas.com

MTCS File #	**:**	**0008727**
Proponent	**:**	**Union Gas**
Subject	**:**	**Cultural Heritage Overview Report**
Project	**:**	**North Shore Community Expansion Project**
Location	**:**	**City of North Bay, Ontario**

Dear Mr. Tomek:

Thank you for providing the Ministry of Tourism, Culture and Sport (MTCS) with the Cultural Heritage Overview Report (CHOR) prepared by AECON in February 2019 for the above-referenced project. MTCS's interest in this project relates to its mandate of conserving Ontario's cultural heritage, which includes:

- Archaeological resources, including land and marine;
- Built heritage resources, including bridges and monuments; and,
- Cultural heritage landscapes.

Project Summary
As part of its Community Expansion Program, the proponent is proposing to extend the natural gas service to the Northshore and Peninsula Roads area in the City of North Bay. The project will consist of approximately 27 km of small diameter (i.e. 1 ¼" – 4") polyethylene distribution pipelines to service the area. The proposed pipeline will commence at Union's existing pipeline on Trout Lake Road and will run east to Northshore Road and Peninsula Road.
The Environmental Protection Plan (EPP) notes that a heritage specialist would be retained to review the project's potential to impact cultural heritage landscapes and built heritage resources. The CHOR was undertaken to fulfil that commitment from the EPP.

Review of CHOR
MTCS has reviewed the CHOR and finds that due diligence has been undertaken.

The CHOR:

- Identified Trout Lake as a possible Cultural Heritage Landscape.
- Identified that the Ontario Northland Railway could be interpreted as having cultural heritage value.
- Confirmed there are no listed or designated properties within the study area.
- Listed the Direct Impacts and Indirect Impacts of the project and concluded there are no anticipated impacts and thus no mitigation measures were recommended.
- Stated that if the routing and project planning change that a Cultural Heritage Environmental Report (CHER) or a Heritage Impact Assessment (HIA) may need to be undertaken.

MTCS has no further comments on the CHOR.

Archaeological Resources
MTCS also acknowledges that a Stage 1 archaeological assessment (PIF # P307-0088-2018) was completed by Woodland Heritage Northwest and submitted to MTCS on February 8, 2019. The report is still under review by MTCS and MTCS may have further comments regarding the assessment.

Thank you for consulting MTCS on this project and please continue to do so throughout the planning process. If you have any questions or require clarification, do not hesitate to contact me.

Sincerely,

Kimberly Livingstone
Heritage Planner (A)
Heritage Planning Unit
kimberly.livingstone@ontario.ca

Copied to: Zora Crnojacki, Coordinator, Ontario Pipeline Coordination Committee, OEB
Zora.Crnojacki@ontarioenergyboard.ca