



WELCOME

Pipeline Emergency Preparedness & Response
Trans-Northern Pipeline's Outreach Approach



Objective of this Presentation

This presentation in its original format has been developed for the purpose of communicating the emergency preparedness and planned response efforts of TNPI to stakeholders and rights holders located along the pipeline right-of-way.

The presentation has been modified to focus on the subject matter and summarize TNPI's recent outreach efforts.



Speakers

Ryan Wheeler B.Tech.

Director / Consultant

Shearwater Environmental Emergency Solutions Inc.

Ryan is an environmental emergency management consultant based in Toronto, ON. Ryan has been retained by TNPI to assist in the maintenance and communication of TNPI's emergency management program since 2012.

Farhad Seif

Manager, Environment, Health & Safety

Trans-Northern Pipelines Inc.

Farhad has been with TNPI since 2012. In addition to being the Manager of environment, health & safety Farhad is responsible for developing, promoting and maintaining TNPI's emergency management program.



WHO IS TRANS-NORTHERN PIPELINES INC.

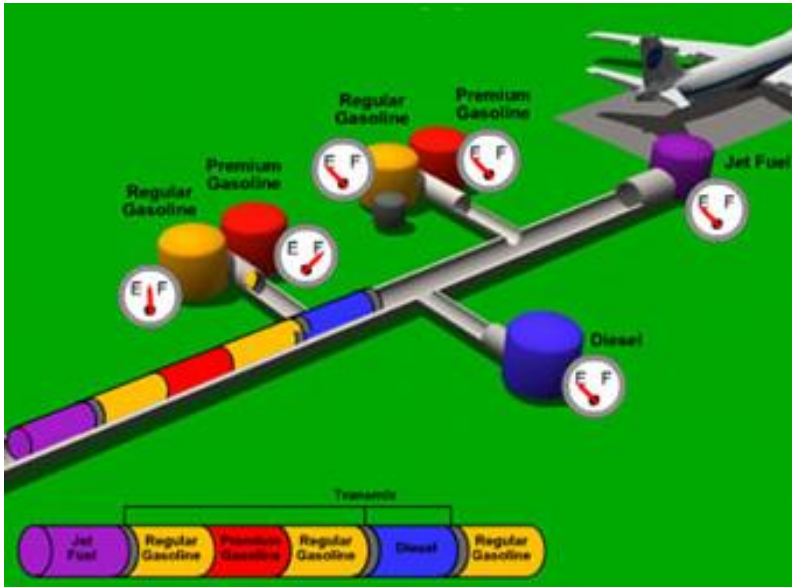
- Operating since 1953 Trans-Northern Pipelines Inc. (TNPI) is equally owned by Imperial Oil, Suncor and Shell.
- TNPI's Head Office is located in Richmond Hill, ON with satellite offices in Lancaster & Mississauga, ON and Calgary, AB.
- TNPI operates a federally regulated pipeline between Quebec and Ontario and the provincially regulated Alberta Products Pipeline between Edmonton Refineries and markets in southern Alberta.

WHERE DOES TNPI OPERATE



WHAT DOES TNPI DO

- Batch delivery of refined petroleum (*Gas, Diesel, Jet, Fuel oil*) to urban distribution terminals in Eastern and Southern Ontario.
- Lateral lines serve Greater Ottawa, Toronto Pearson International Airport and Montréal-Pierre Elliott Trudeau International Airport.



Toronto Airport Jet Fuel Lateral Terminus

HOW DOES TNPI OPERATE

- The TNPI pipeline is buried within a right-of-way that is clearly marked at road, rail and water crossings and in populated areas.
- Shared at times with other utilities and infrastructure the right-of-ways vary in width and are generally located approximately 0.75 M below grade.



**OIL
PIPE
LINE**

**TRANS-NORTHERN
PIPELINES INC.**

IN CASE OF EMERGENCY
CALL

ONTARIO 1-800-361-0608
QUEBEC 1-800-463-7628

BEFORE DIGGING
CALL (COLLECT)

MONTREAL (514) 645-3701
LANCASTER (613) 347-2463
TORONTO (416) 678-2261

HOW DOES TNPI OPERATE

- The aboveground assets consist of pump stations, valve chamber access and storage facilities and of course its pipeline control facilities.



HOW DOES TNPI MAINTAIN PIPELINE INTEGRITY

- Cathodic Protection and Monitoring (Corrosion)
- Leak Detection
- Pressure Monitoring
- Surveillance (Air and Ground)
- Line Controller Training
- Infrastructure Maintenance
- Internal Inspection
- Pipeline Remediation



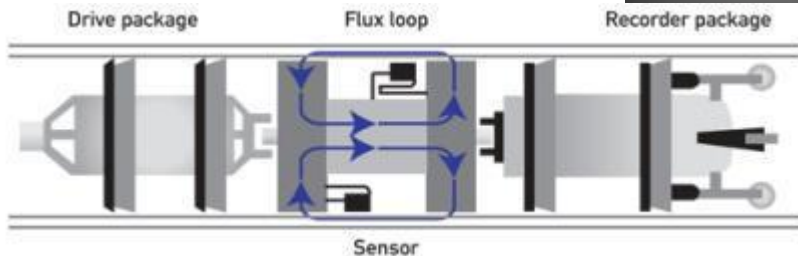
Internal Pipeline Inspection

Pipeline Inspection Gauges (PIG)

- Magnetic Flux Leakage (MFL) Tools
 - Detects corrosion and mechanical damage
- Ultrasonic Tools
 - Detects stress cracking
- Acoustic Tools
- Geometry Tools



Courtesy:NA Oil&Gas Pipelines Magazine



Courtesy: The Nondestructive Testing Resource Center



PURPOSE OF TNPI'S OUTREACH EFFORTS

National Energy Board Act

Onshore Pipeline Regulations

- *facilities and pipelines are required to develop, implement and communicate an Emergency Procedures Manual.*

National Energy Board Act

Pipeline Crossing Regulations

- *Defines party responsibilities when planning & conducting underground work.*
- Promote Ontario One Call and community / pipeline safety

Canadian Environmental Protection Act

Environmental Emergencies Regulation

- *Promotes facility safety and community protection*

EMERGENCY RESPONSE OUTREACH LIAISON & CONTINUING EDUCATION

- The Onshore Pipeline Regulations requires TNPI communicate and coordinate with agencies that may be potentially involved in a pipeline emergency.
 - (Fire, Police, EMS, Utilities etc.)

- ✓ *Identify, re-establish and update agencies and organizations*
- ✓ *Communicate at the local and region level the location of TNPI infrastructure*
- ✓ *Communicate the hazards associated with refined petroleum*
- ✓ *Coordinate safety & response procedures*
- ✓ *Communicate site specific response plans to local & regional first responders*



A SUMMARY OF TNPI'S RECENT OUTREACH EFFORTS

Since 2012

- TNPI has hosted or participated in over 60 emergency preparedness activities in Ontario and Quebec.
- TNPI has met with approximately 1000 representatives from over 100 local, regional, and provincial agencies.
- TNPI has hosted or participated in at least 12 table top or full scale exercises.
- In 2014 TNPI partnered with Defence Research & Development Canada in the completion of a full scale bomb threat exercise.
- TNPI has reviewed 10 Regional Source Water Protection Plans in Ontario and continues work with Quebec to review Source Water Protection.
- And more....



ADDITIONAL OUTREACH IMPROVING PUBLIC AWARENESS

To improve public awareness of the hazards associated with unapproved underground work TNPI engages in a number of activities to educate the general public and businesses regarding their operations and pipeline safety.

The following are some of those activities

- General information mail outs to identified households;
- Door to door engagement of identified households;
- Participation in farm shows; and
- Education of construction industry students & Unions.

PIPELINE CROSSINGS

National Energy Board pipeline crossing regulations promote safety measures for both pipeline companies and entities planning to complete work in a right-of-way.

Pipeline Crossing Part 1 (Construction Party)

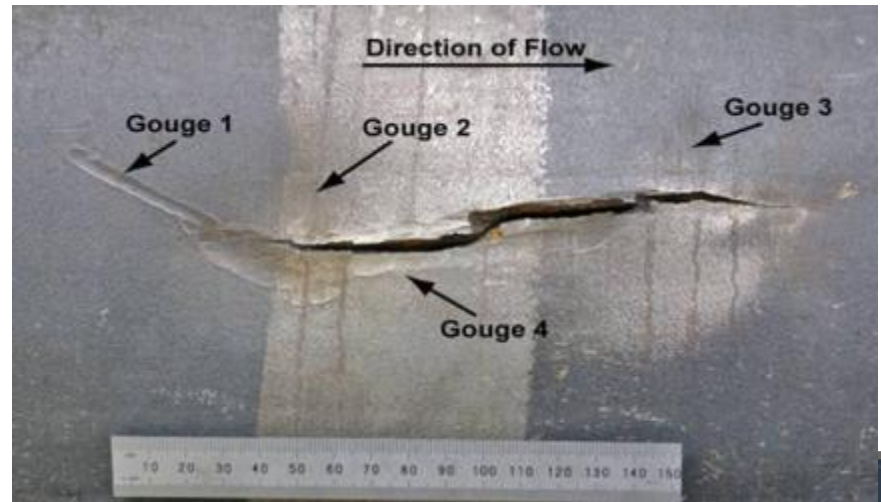
- ✓ *Advise and obtain permission*
- ✓ *Complete work in accordance with permission*
- ✓ *Observe stakes and locate markings*
- ✓ *Adhere to all field directions issued by pipeline representative*
- ✓ *Provide notification if contact with pipeline or coating is made*

Pipeline Crossings Part 2 (Pipeline Party)

- ✓ *Establish a public awareness program*
- ✓ *Provide precautions to be followed during a crossing*
- ✓ *Stake / mark the location of the pipeline and infrastructure*
- ✓ *Conduct inspections, ensure safety and integrity of the pipeline*
- ✓ *Maintain a record of all work through the life of the pipeline*

CAUSES OF INCIDENTS AND THREATS TO PIPELINE INTEGRITY

- Third Party Construction / Unpermitted Crossings
- Corrosion
- Manufacturing Defect
- Welding Defect
- Equipment Failure
- Operational Error
- Natural Disaster
- Sabotage



Building an Emergency Response Plan

IDENTIFYING THE POTENTIAL RECEPTORS

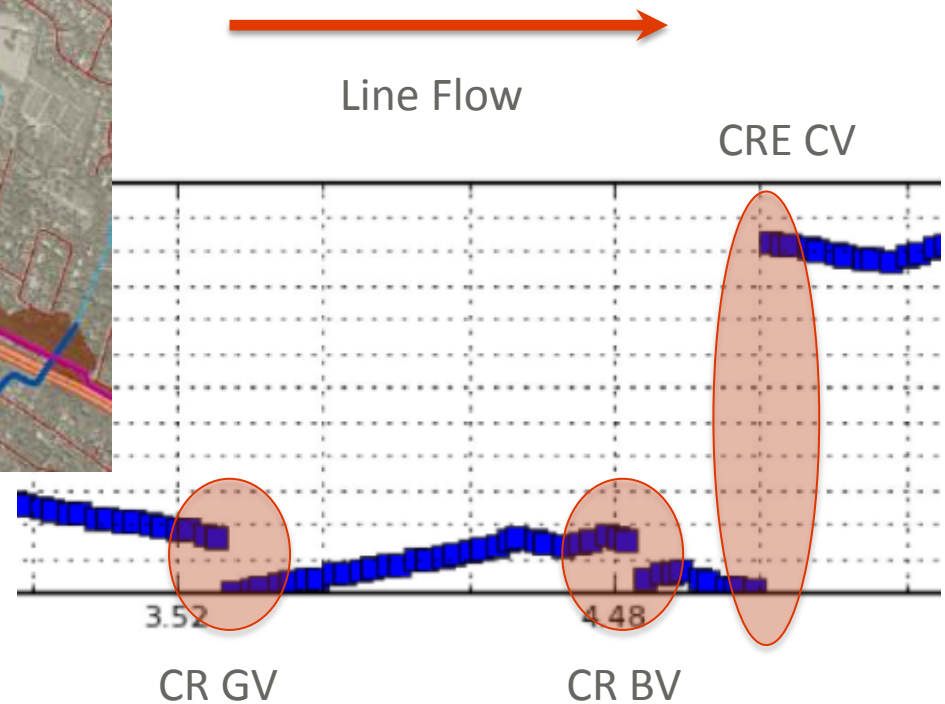
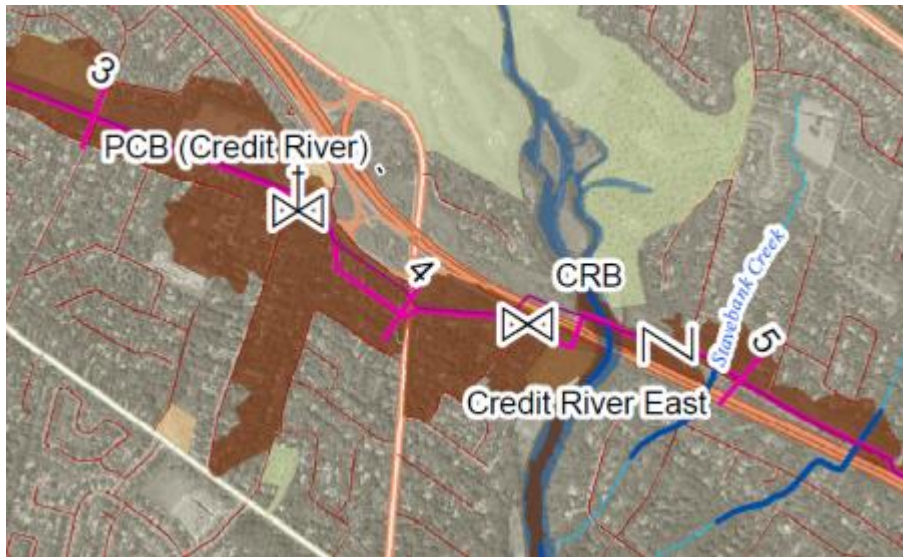
Receptors are identified and targeted for outreach;

- Non-mobile / persons at risk
 - *Health care facilities, Schools, Retirement Facilities;*
- Major transportation corridors
 - *Rail, highway etc.;*
- Critical municipal infrastructure
 - *Sanitary, storm and combined sewer systems;*
 - *Transit systems*
 - *Well head and intake protection zones*
- High density population, and;
- Sensitive habitats / natural environment
 - *Threatened habitats*
 - *Municipal source water*

ASSESSING THE POTENTIAL EXTENT OF A SPILL

Overland Flow / Worst Case Scenario Modeling

TNPI Metro Line – Eastbound flow to GTAA/Finch Terminals

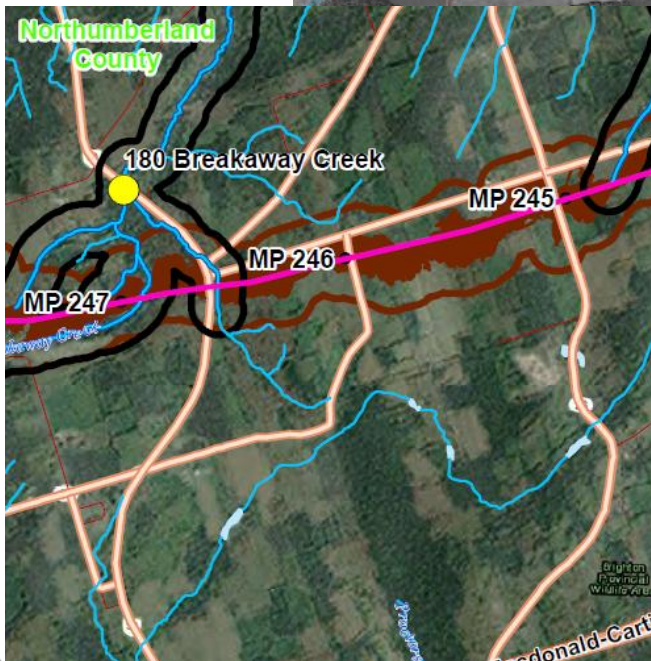
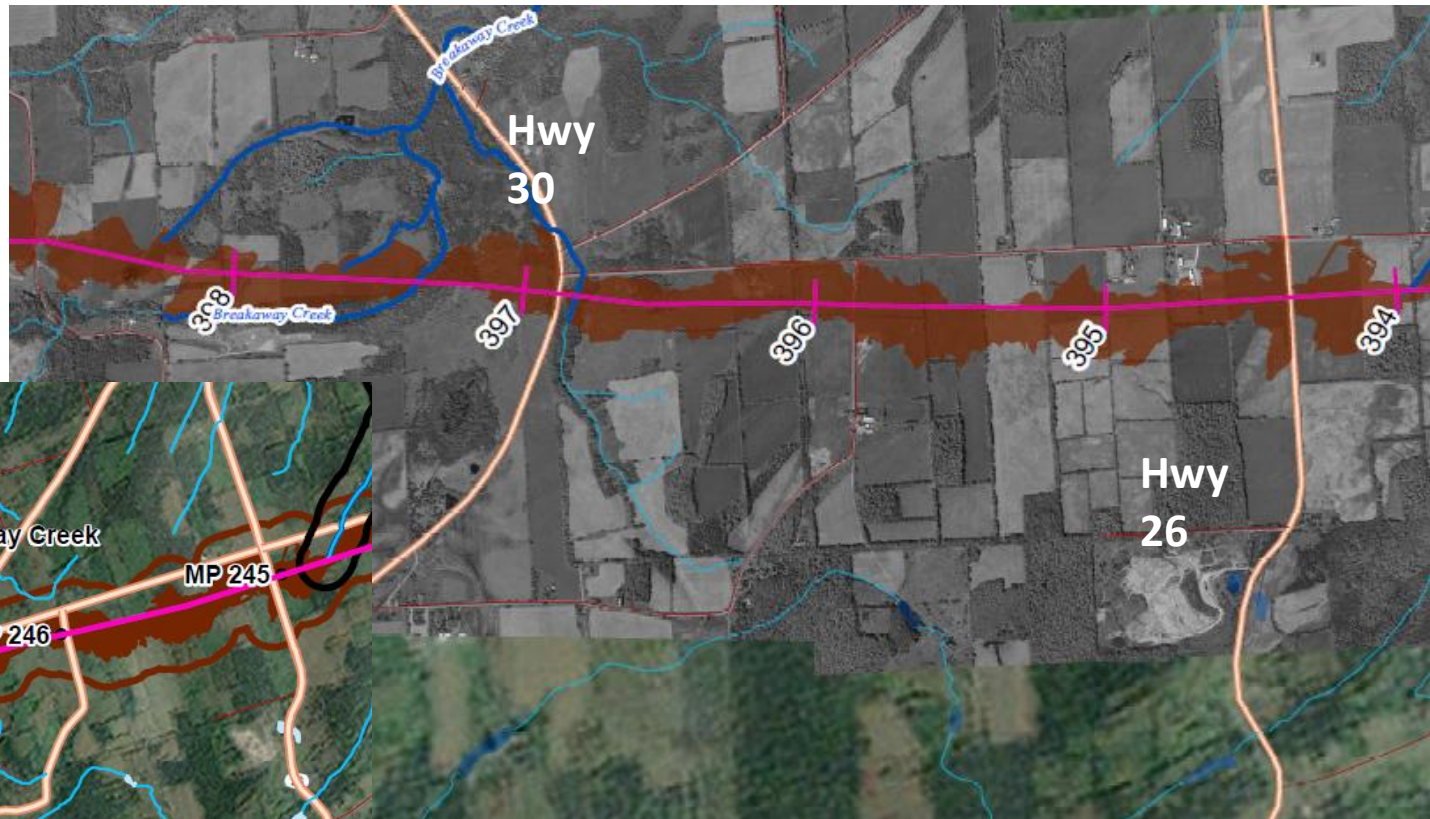


ASSESSING THE IMPACT OF A SPILL

- Results of “overland flow” models guide TNPI in its effort to identify stakeholders and authorities having jurisdiction in the event of an incident as well as potential receptors.

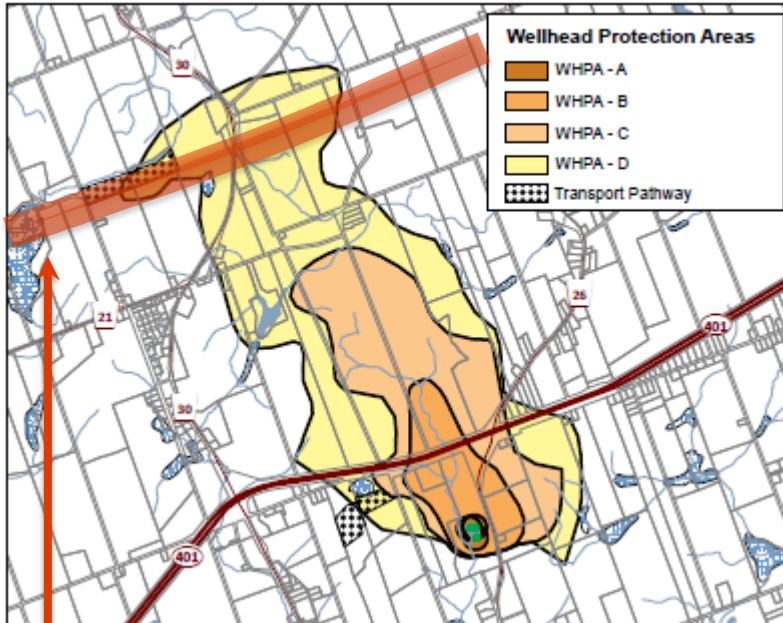


Assessing the Threat to Source Water

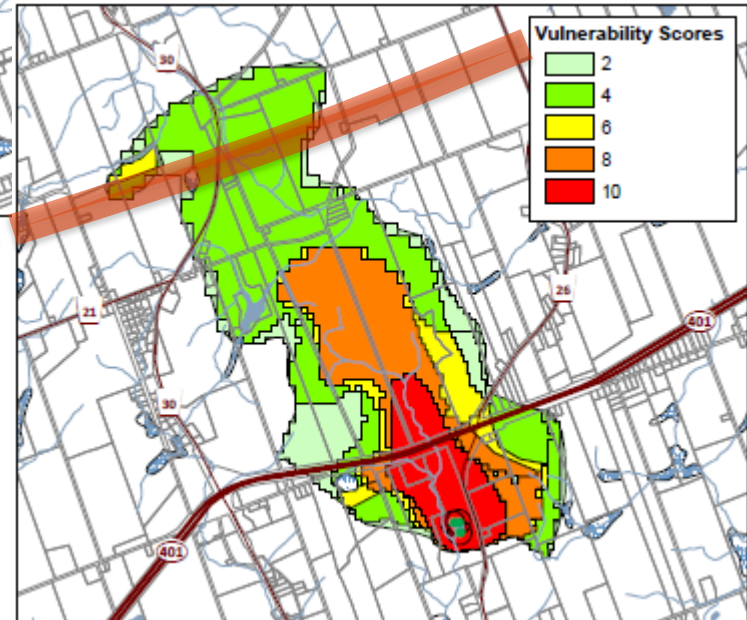


Brighton, ON Well Head Protection Zone

Assessing the Threat to Source Water

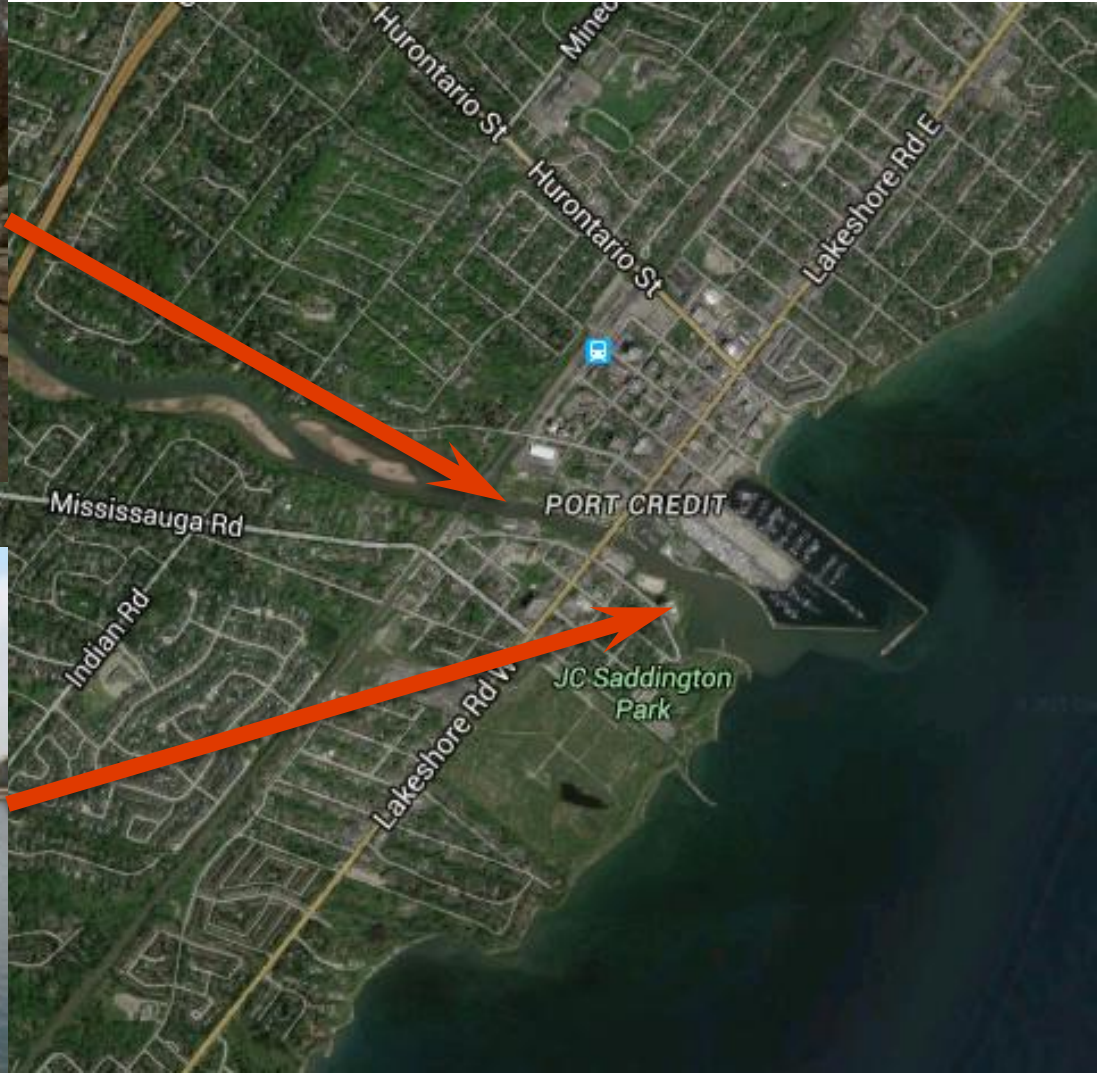


Brighton, ON
Well Head Protection Zone



TNPI Pipeline
Right-of-Way


PREPARING FOR A RESPONSE FIELD SURVEYS



PREPARING FOR RESPONSE CONTROL POINT PLANS

Designed to be used by TNPI, contactors and first responders; they are blue prints to a response procedure downstream of a release from the pipeline.

CP 54 - Credit River



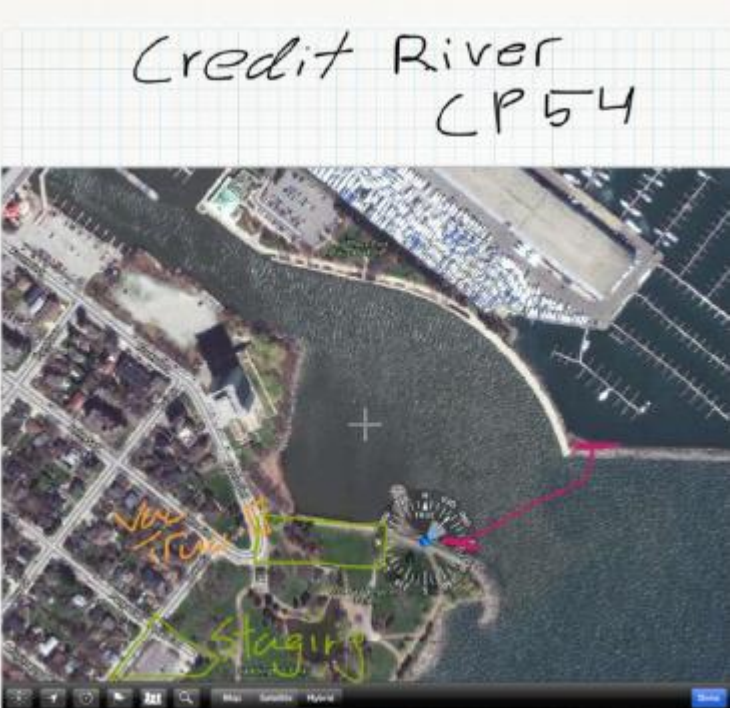
Safety

Safe Entry Guidelines
Site entry must be completed by a minimum of two individuals utilizing the TNPI independent safe work system. If situational awareness is unknown, entry must be made with applicable monitoring equipment.

1. Complete first on site checklist if not already completed.
2. Observe all Pre-entry safety requirements section 6.
3. Observe all Conditions for non-entry section 6.

Key Precautionary Measures

- Collect on site safety requirements, site zoning (hot, cold, warm) and accountability requirements through briefing with the site manager.
- Don all needed PPE identified in the hazard assessment.
- Life Jacket must be Donned when working within 6' of the water.
- Enter from an up-wind, up-hill, up-stream position.
- Identify and Extinguish any Ignition sources.
- Continuously evaluate changing conditions and evacuate as soon as a dangerous condition is identified.



Control Point Information	
Management Region: Peel	Latitude/Longitude: 43° 32' 50.8" N / 79° 34' 55.1" W
Nearest Municipality: Mississauga, ON	
Description of Water course	Bank and Stream Character
Velocity: 1 m/s Avg. Width: 45 m Avg. Depth: 3 m Max. Width: 180 m Elevation: 80 m	Substrate: Muck, Rock, Silt Bank Stability: Moderate Cover/Canopy: Low Instream Cover: Low Upstream: CP53 Downstream: Lake Ontario
Risk Assessment	
Agricultural Use:	
Birds: 44 species of birds call this watershed home.	
Fish: Credit River is nationally recognized for its impressive migratory runs of trout and salmon. 64 fish species (including muskellunge, pike, and brook trout).	
Impact to Fisheries: Moderate	



TNPI's RESPONSE TO AN INCIDENT

At the onset or notification of an emergency involving the TNPI pipeline or infrastructure.

- Engineering controls are initiated, i.e. Pipeline shutdown, valve activation, etc.
- The TNPI Emergency Response Plan is activated;
- Notifications are made, i.e. NEB, TSB, MOECC etc.;
- Technical assistance is provided to Emergency Services, and;
- On scene response is initiated;



TNPI's RESPONSE STRUCTURE

- TNPI subscribes to the Incident Command System.
- TNPI will implement a sole or unified command structure depending on the nature and magnitude of the incident.
- During significant incidents the National Energy Board, Provincial Ministry of the Environment and the local municipality are represented alongside TNPI in the Unified Command.



MISSING ELEMENTS AND THE PATH FORWARD

In an effort to continually improve our ER plan the following are elements TNPI has identified for improvement or update and continue to address with stakeholders, rights holders and community partners

- Municipal Mutual Aid Agreements
Private or Public Partners
- Source Water Protection Zones
- Municipal Response Resources
- Municipal Command Structure



In the Event of an Emergency

Upon notification or observation of a potential emergency situation involving the TNPI pipeline or infrastructure, initiate the TNPI emergency response plan by calling

1-800-361-0608

24/7/365

**Stay on the line and you will be assisted by
Trans-Northern Pipeline staff**



THANK YOU

To submit comments regarding TNPI's Emergency Procedures Plan please contact

Ryan Wheeler B.Tech

Emergency Response Consultant - TNPI

Shearwater Environmental Emergency Solutions Inc.

rwheeler@tnpi.ca or Ryanwheeler.environment@gmail.com

416-525-4600

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Farhad Seif, Ph.D., M.Sc.

Manager, Environment, Health & Safety

fseif@tnpi.ca or 289-475-5357