Executive Summary

Route Permit Application for the Minnesota Public Utilities Commission

Enbridge Energy, Limited Partnership • Line 3 Replacement Project

April 2015

MPUC Docket No. PL-9/PPL-15-137

ENBRIDGE®

“Our role comes with tremendous responsibility. That’s why safety and operational reliability is our number 1 priority.”

Al Monaco, President and CEO

ENBRIDGE

Line 3 Replacement Project Executive Summary

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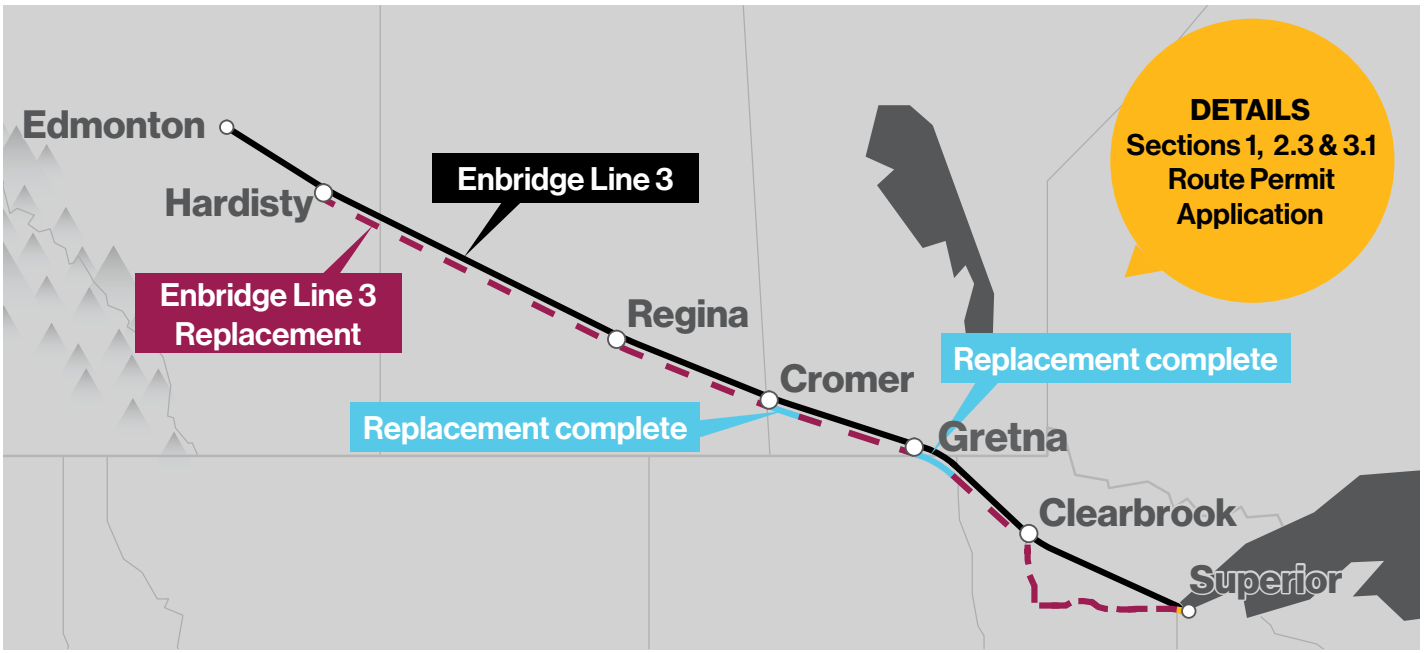
About Enbridge

- We transport energy; operating the world's longest, most sophisticated liquid petroleum transportation system.
- We have provided safe and reliable energy transportation in North America for more than 65 years.
- We deliver more than 2 million barrels of crude oil daily.
- We continue to invest billions of dollars to enhance Enbridge's ability to transport supplies of crude oil to North American refineries, helping support North American energy independence.
- Our corporate headquarters are in Calgary and Houston with offices in Superior, Wisconsin; Duluth and Edina, Minnesota; Griffith, Indiana; Minot, North Dakota; and Cushing, Oklahoma, along with regional offices along the system route.
- We employ 11,000 people, of which 6,500 are employed in the U.S.

Line 3 Replacement Program Background



Enbridge Energy, Limited Partnership's ("Enbridge") maintenance driven Line 3 replacement will reduce future maintenance activities and resulting disruptions to landowners and the environment, as well as restore the historical operating capabilities of Line 3. A new 36-inch diameter pipeline will replace the existing 34-inch diameter pipeline along most of the Line 3 route.

Purpose and Need

Safe and reliable operations have always been the foundation of Enbridge's business, and maintaining pipeline integrity is essential to continued safe and reliable operations.

As part of our maintenance program, Enbridge has gathered extensive integrity data on Line 3. The data has been analyzed, resulting in the need for a substantial number of integrity digs and repairs. Since 2008, Enbridge has safely operated and maintained Line 3 by implementing voluntary pressure restrictions reducing the average annual capacity of deliveries from 760,000 barrels per day (bpd) to 390,000 bpd.

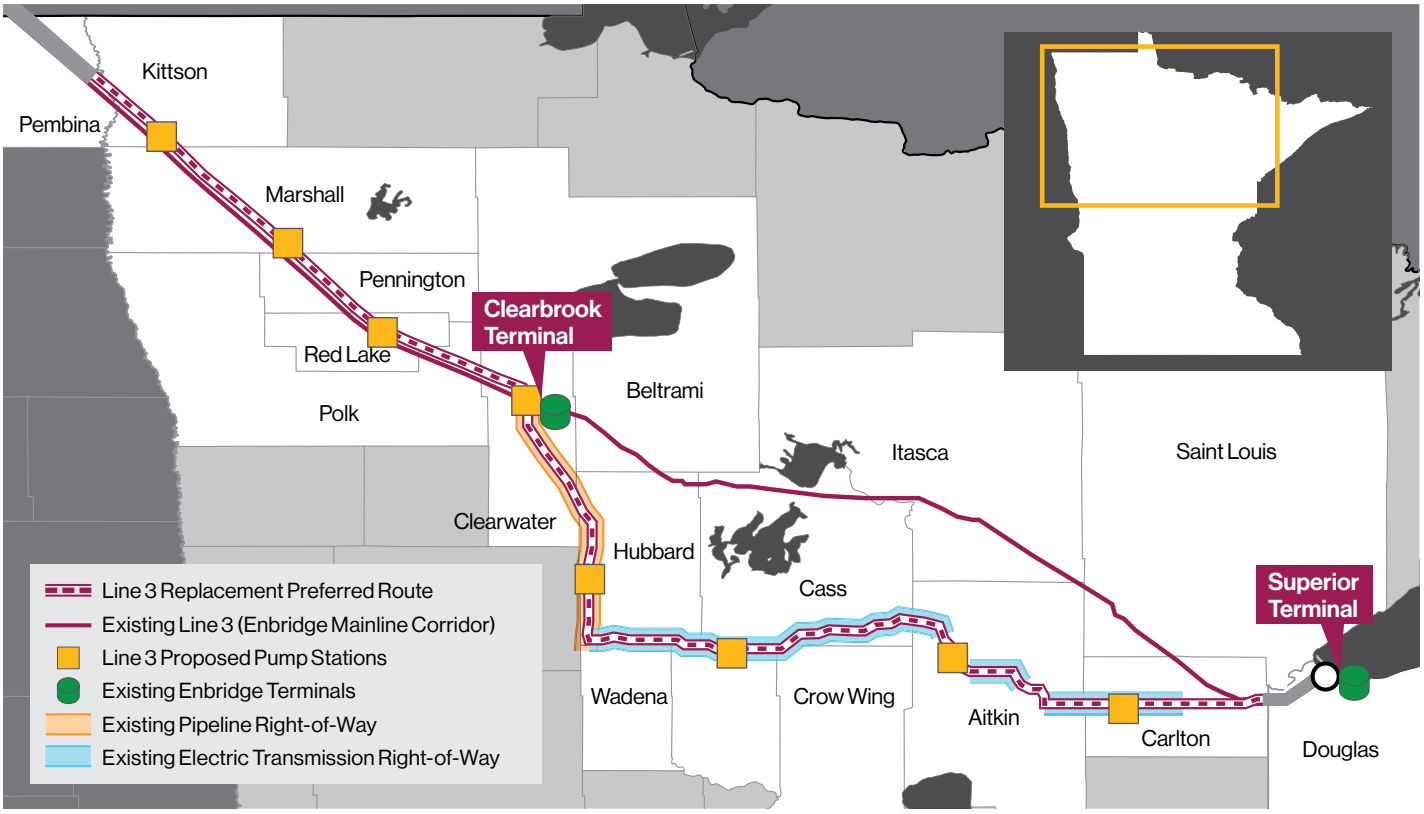
As a result of the integrity maintenance program, Enbridge concluded that replacement is the optimal alternative to the required ongoing and increasing maintenance activities.

Line 3 Replacement: Background

- Line 3 is a 1,097-mile crude oil pipeline extending from Edmonton, Alberta to Superior, Wisconsin, and is an integral part of Enbridge's Mainline System. Line 3 was installed in the 1960's.
- Line 3 Replacement Program consists of 1,031 miles of 36-inch diameter pipeline that begins in Hardisty, Alberta and ends in Superior, Wisconsin.
- The U.S. portion includes about 13 miles in North Dakota, 337 miles in Minnesota, and 14 Miles in Wisconsin.
- The Program is an approximate $7.5 billion private investment ($2.6 billion for the U.S. portion), making it one of North America's largest infrastructure programs, which supports North American energy independence.

> This is an integrity and maintenance driven Program.

Line 3 Replacement Project



The U.S. portion of the Program Enbridge is proposing in this Application is the Line 3 Replacement Project.

Project Description in Minnesota

- 36-inch diameter pipe in Minnesota.
- 337 miles in Minnesota to replace existing 282 miles of 34-inch diameter pipeline
- Construction of eight pump stations
- Restore historical operating capabilities and move 760,000 barrels per day (bpd)
- Includes 27 strategically placed valves
- $2.1 billion for the Minnesota portion of the design, permit and construction of Line 3
- In Minnesota, the replacement pipeline will follow existing utility corridors for more than 98 percent of the route west of Clearbrook and 75 percent east of Clearbrook
- The Application will be reviewed by the Minnesota Public Utilities Commission (MPUC). Upon receipt of all applicable approvals, construction will begin

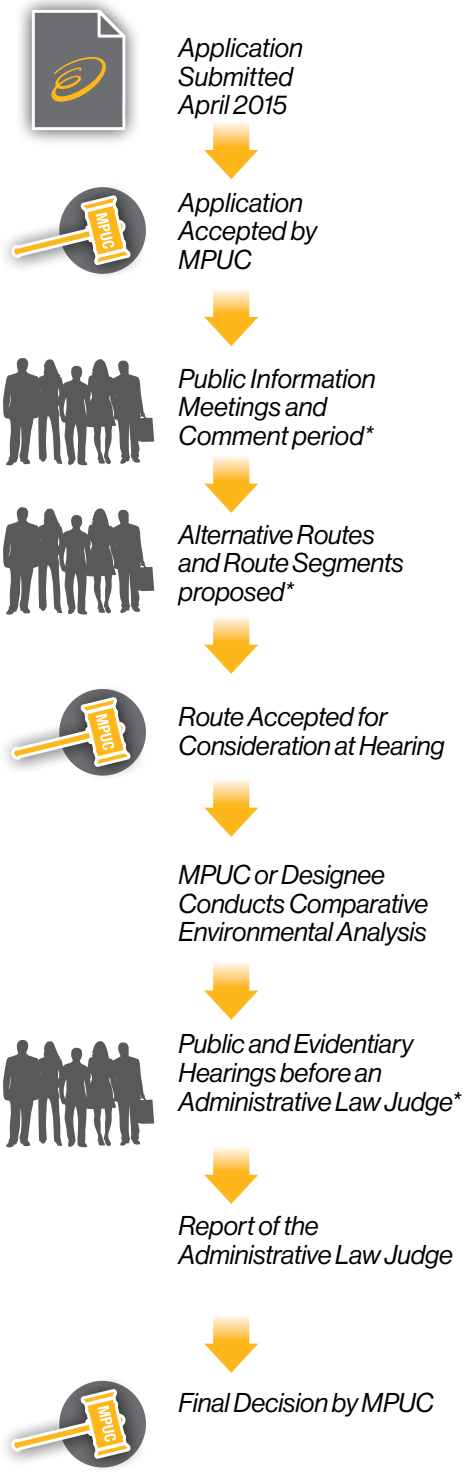
Anticipated Project Timeline in Minnesota (pending regulatory approval)

2016	Construction begins
Late 2017	The replacement pipeline is placed into service in late fall or winter
2018	The existing pipeline is taken out of service and restoration of land disturbed during construction continues

DETAILS
Section 4: Project Description
Route Permit Application

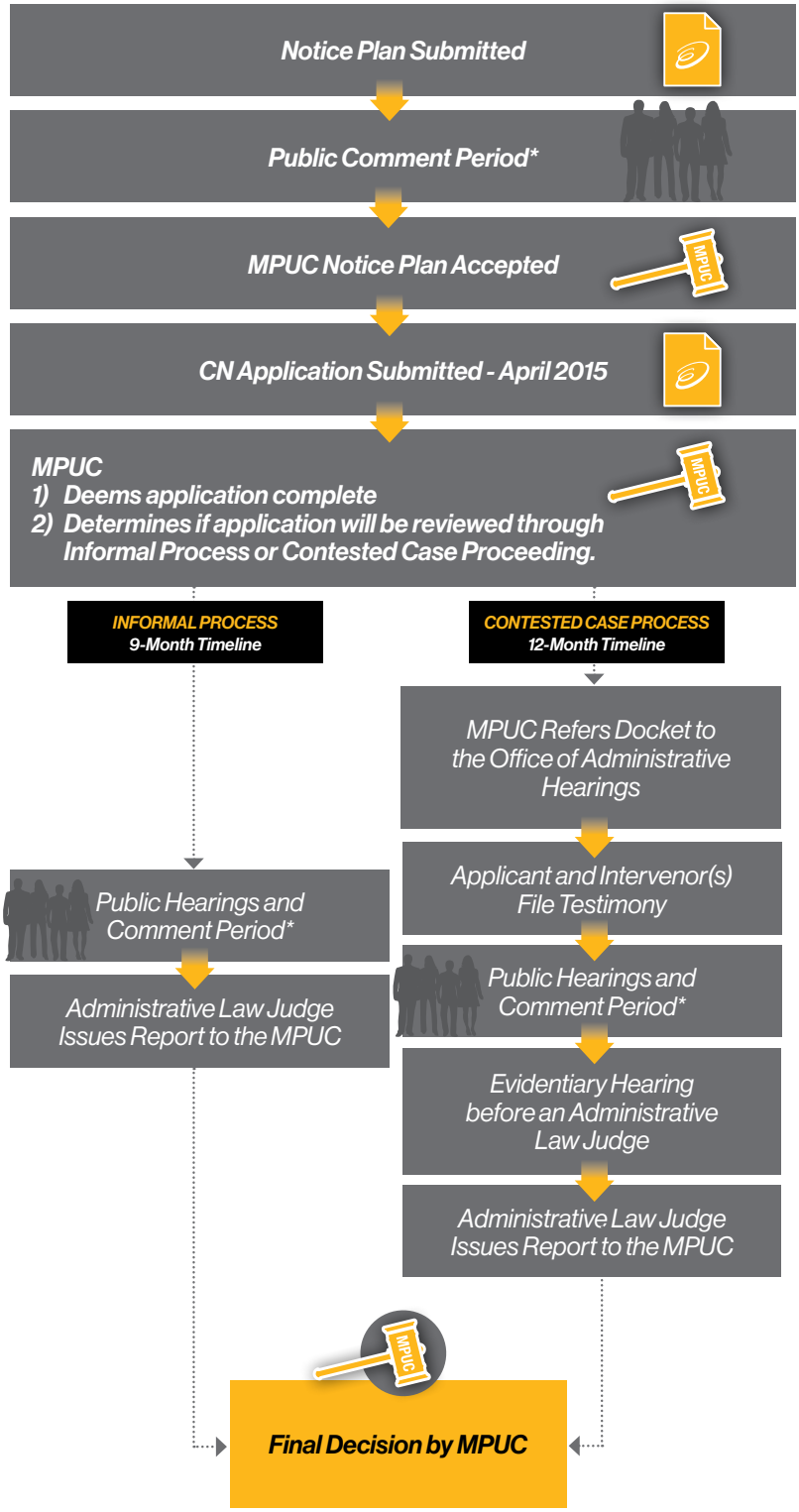
Line 3 Minnesota Regulatory Process

ROUTE PERMIT PROCESS



*Public participation opportunities

CERTIFICATE OF NEED (CN) PROCESS



*Public participation opportunities

Project Benefits

Jobs: Thousands of family-sustaining construction jobs; new business for contractors for design, survey, environmental assessment, and project planning processes.

Economic Activity: Significant boost to the U.S. economy during design and construction; local and regional economic boost during construction from the purchase of local products/materials and use of local hotels, restaurants and services.

Long-term Property Tax Revenues: Enbridge paid more than $34 million in Minnesota property taxes in 2011; this will increase incrementally by $19.5 million beginning the first full year of service.

Support for Minnesota Refineries: Reduced apportionment, continued reliable crude oil delivery, and energy cost savings on a per barrel basis for Minnesota refineries.

Line 3 Replacement will provide almost immediate economic benefits to Minnesota communities. From restaurants to hotels, retail shops to gas stations, campgrounds to car dealerships, thousands of dollars will be spent near the pipeline route.

"Business is even greater than our vacationer business when construction activity is going on."

"We experienced at least a 35 percent jump in business during pipeline construction in 2009."

"We absolutely welcome pipeline workers."

"I definitely welcome pipeline workers and pipeline construction. All the businesses in town do."

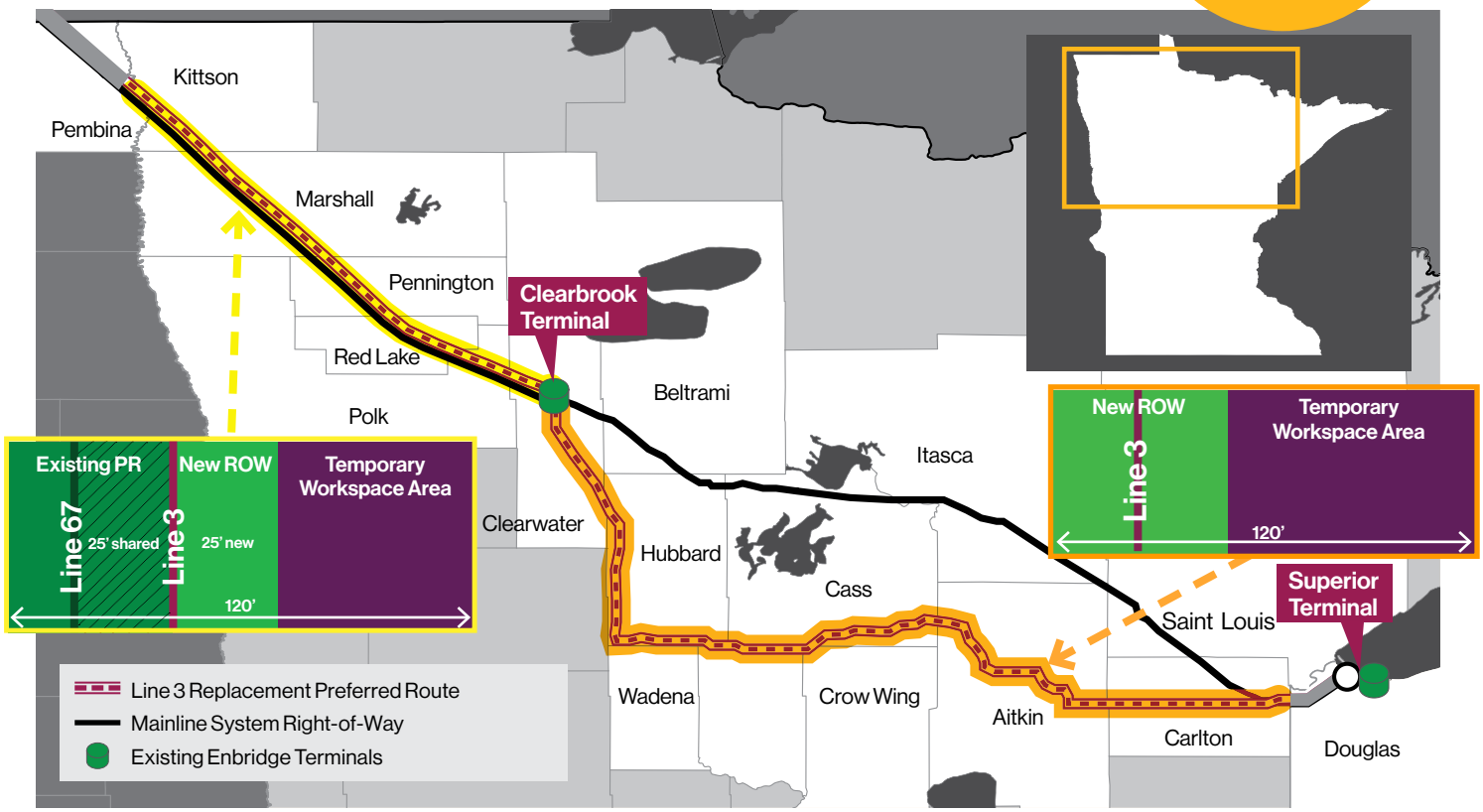
Land Requirements

Permanent Right-of-Way and Temporary Workspace

Replacement of Line 3 will require Enbridge to acquire new right-of-way (ROW) in the form of permanent easements and temporary workspace in adjacent lands. The Project's preferred route minimizes the permanent right-of-way and temporary workspace required because construction is proposed in and along existing Enbridge-affiliated pipeline rights-of-way and other Minnesota utility rights-of-way. The amount of area necessary for new permanent right-of-way will vary in width depending on the terms of existing easements and the current alignment of existing pipelines or utilities within existing easements. Overall, the amount of new permanent right-of-way to be acquired is anticipated to be limited to 1,722.5 acres. In total, Project construction will temporarily affect 5,098.7 acres of land.

DETAILS
Section 4.6
Route Permit Application

Typical Permanent Right-of-Way and Temporary Workspace Requirements



Anticipated Land Requirements

PREFERRED ROUTE	PERMANENT ROW (PR) (ft.)	TEMPORARY WORKSPACE (ft.)	TOTAL REQUIREMENTS (ft.)	SHARED ROW	NEW ROW
West of Clearbrook	50	70 (upland) 45 (wetland)	120 (upland) 95 (wetland)	25	25
East of Clearbrook	50	75 (upland) 45 (wetland)	120 (upland) 95 (wetland)	0	50

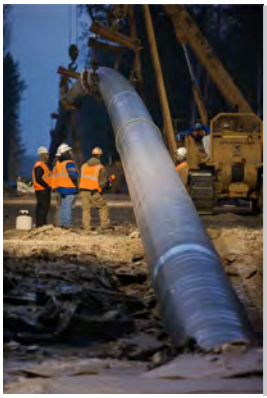
Additional Temporary Workspace

Site-specific additional temporary workspace (ATWS) locations (construction work areas beyond the permanent corridor and temporary workspace) will be required at select locations such as steep slopes, road, waterbody, railroad, some wetland crossings, and where it is necessary to cross under existing pipelines or foreign utilities. ATWS will typically be located in uplands adjacent to the construction ROW and set at least 50-feet back from sensitive resource boundaries where site-specific field conditions allow. However, to complete work safely, Enbridge may need to locate ATWS within a wetland or within the 50-foot setback from a wetland or waterbody based on site-specific conditions. ATWS adjacent to waterbodies and/or wetlands is addressed further in Sections 4 and 7 of the Application.

Environmental features may require special construction methods. For example, it may be necessary to build a flat working area that provides continuous ingress/egress during construction. Further, these areas provide access for environmental monitoring and emergency equipment in the case of an accident during construction.

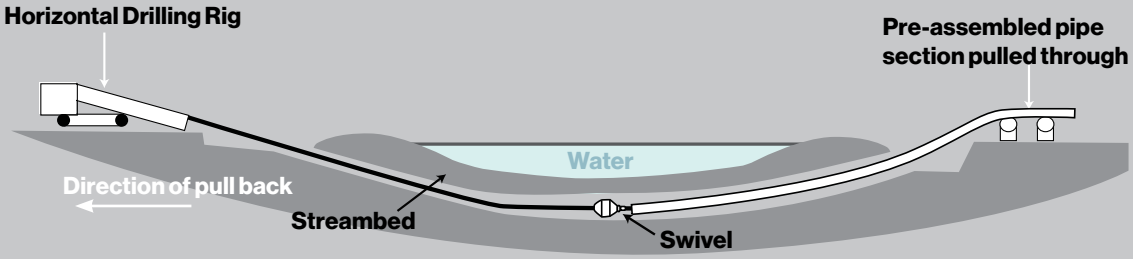
In extended wetland areas, additional temporary workspace will also be required at features crossed using horizontal direction drill (HDD) or boring techniques (e.g., roads and waterbodies).

DETAILS
Section 4.6 & 7
Route Permit Application



Typical Horizontal Direction Drill Method

This is an example of one of a number of watercourse crossing methods.



Above Ground Facilities

The only above ground facilities for the Project are valves (for which Enbridge acquires a separate and distinct easement) and pumping facilities (for which Enbridge acquires land in fee). The total estimated land requirement for the above ground facilities is approximately 70 acres of land. Enbridge is currently working with landowners to acquire land for each of the potential sites. The locations of these facilities are subject to change until the final engineering design and hydraulic studies are completed.

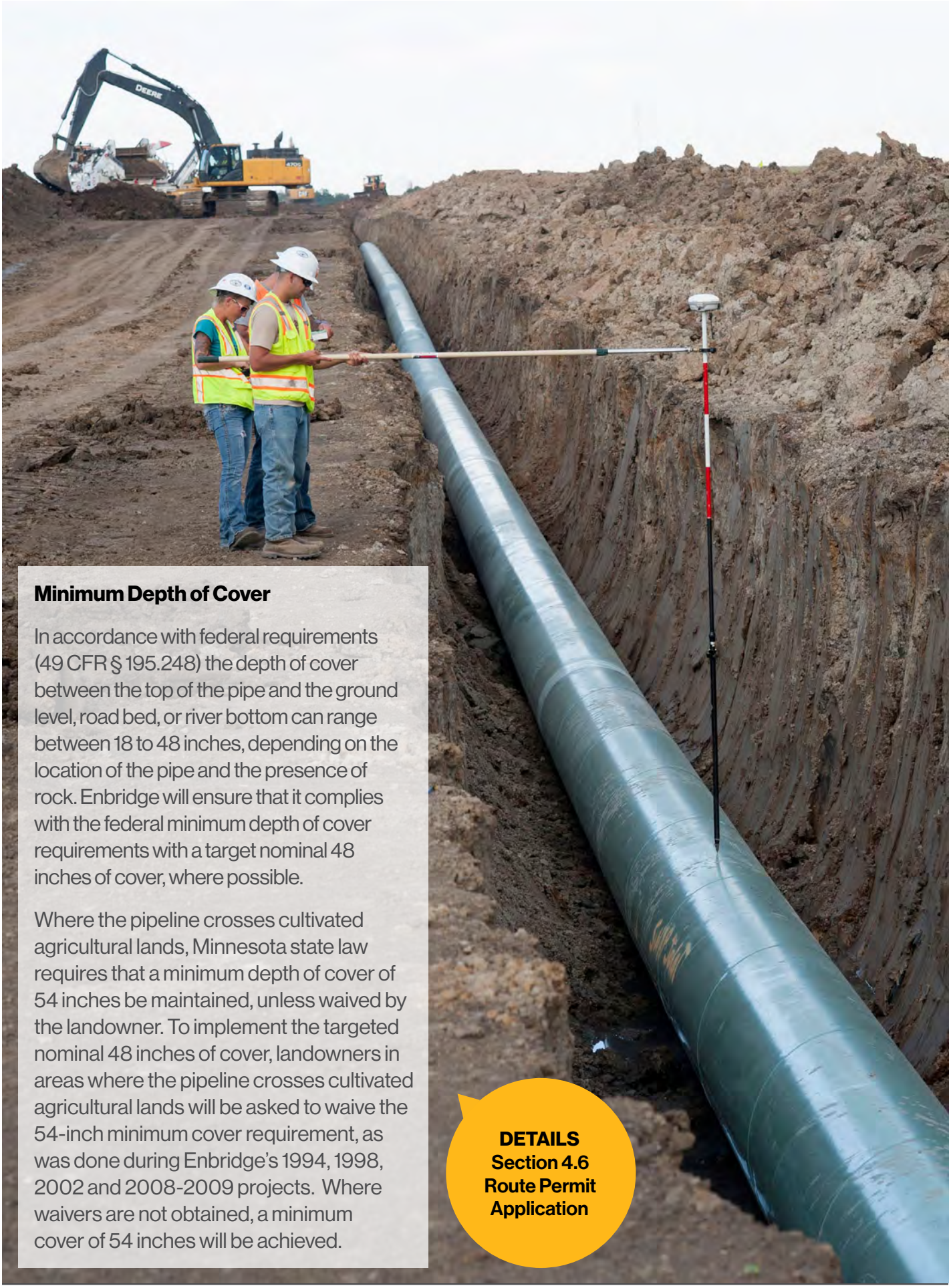
Valve site

Aerial view of pump facility

DETAILS
Section 4.3 & 4.4
Route Permit Application

Existing Enbridge Mainline

Enbridge's existing mainline system crosses the Mississippi River, pictured here along Highway 2. Horizontal directional drilling (HDD) was successfully used to install Line 67 in 2010. Enbridge has safely operated our pipeline system through environmentally sensitive areas such as this for 65 years.



Minimum Depth of Cover

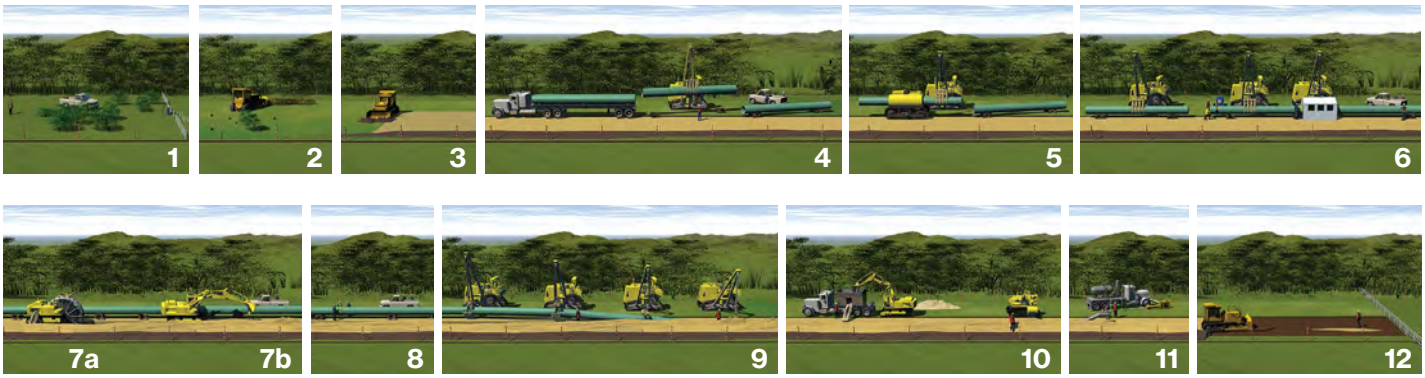
In accordance with federal requirements (49 CFR § 195.248) the depth of cover between the top of the pipe and the ground level, road bed, or river bottom can range between 18 to 48 inches, depending on the location of the pipe and the presence of rock. Enbridge will ensure that it complies with the federal minimum depth of cover requirements with a target nominal 48 inches of cover, where possible.

Where the pipeline crosses cultivated agricultural lands, Minnesota state law requires that a minimum depth of cover of 54 inches be maintained, unless waived by the landowner. To implement the targeted nominal 48 inches of cover, landowners in areas where the pipeline crosses cultivated agricultural lands will be asked to waive the 54-inch minimum cover requirement, as was done during Enbridge's 1994, 1998, 2002 and 2008-2009 projects. Where waivers are not obtained, a minimum cover of 54 inches will be achieved.

DETAILS
Section 4.6
Route Permit Application

Right-of-Way Preparation and Construction

Typical Stages of Pipeline Construction



STEP 1
Staking

STEP 2
Clearing and Grading

STEP 3
Soil Separation

STEP 4
Stringing Pipe

STEPS 5 & 6
Bending and Welding/ Coating and X-Ray Inspection of Welds

STEPS 7a & 7b
Trenching

STEP 8
Final Inspection of Welds

STEP 9
Lowering Pipe

STEP 10
Backfilling the Trench

STEP 11
Hydrostatic Testing of Pipeline

STEP 12
Restoration

DETAILS
Section 5
Route Permit
Application

Step 4
Stringing Pipe

Step 8
Inspection of Welds

Step 9
Lowering Pipe

Step 12
Restored Right-of-Way

These two photos show the same location during construction in August 2013, and following construction in July 2014 as grass grows back over the Enbridge right-of-way in Kansas.

Committed to Successful Restoration of Our Pipeline Systems Rights-of-way

Enbridge is responsible to landowners for all damages or impacts resulting from construction of expansion facilities, pipeline replacement projects or ongoing pipeline operations. To that end, we have plans and procedures to protect land before, during, and after construction. Enbridge uses approved and proven construction and land restoration techniques. Affected sites are checked throughout the remediation process to ensure restoration of the area has been completed satisfactorily.

Prior to construction activities, Enbridge representatives must obtain a number of regulatory approvals and environmental permits. These permits often prescribe practices and restoration expectations. Enbridge also meets with landowners to reach agreement on property-specific items that will be addressed during and after construction. Items on this "line list" may include landscaping, stacking timber, or special care to be taken when working around livestock.

Following Construction

Following construction of a new pipeline, the process of returning property to its agreed-upon condition generally engages multiple restoration crews spread out along the pipeline right-of-way, with each crew working in a continual linear fashion, allowing the work to be completed as efficiently as possible.

Enbridge works with prior approved plans and easement agreements. Weather and road weight restrictions influence our schedules. To ensure a successful restoration, we continue to monitor the restoration in compliance with various environmental permit requirements and Enbridge's routine pipeline patrol and maintenance procedures. If further efforts are needed to complete restoration commitments, we will take the appropriate follow-up action.

Restoration Process

- Crews begin by removing equipment and construction debris, and de-compacting soil in farm fields while restoring rough grade.
- Next, crews replace separated topsoil, seed, mulch, repair fences, and remove construction mats, bridges, and access points.
- Environmental and utility crews will also be mobilized to respond to subsidence and/or drainage issues that create access problems for farmers or landowners, public safety issues, or environmental compliance issues.
- Most restoration occurs within the first year following completion of construction, however the process can take longer depending on weather and other environmental impacts that may interrupt the restoration process. The initial phase involves a more visible presence of workers but crew sizes vary based on the required work.

Coordinating Restoration with Landowners

Following construction, Enbridge representatives contact landowners to review "line list" items, and discuss what items need to be addressed to complete restoration on their property. The "line list" provisions can be attached to easement agreements and amount to an agreement between Enbridge and the affected landowners, giving them an added measure of assurance that the company will perform as indicated. Enbridge is fully committed to the protection of the environments along our pipeline route as well as being a good neighbor to landowners and in the communities in which we operate, and where our employees live.

DETAILS
Section 5.2.9
Route Permit Application

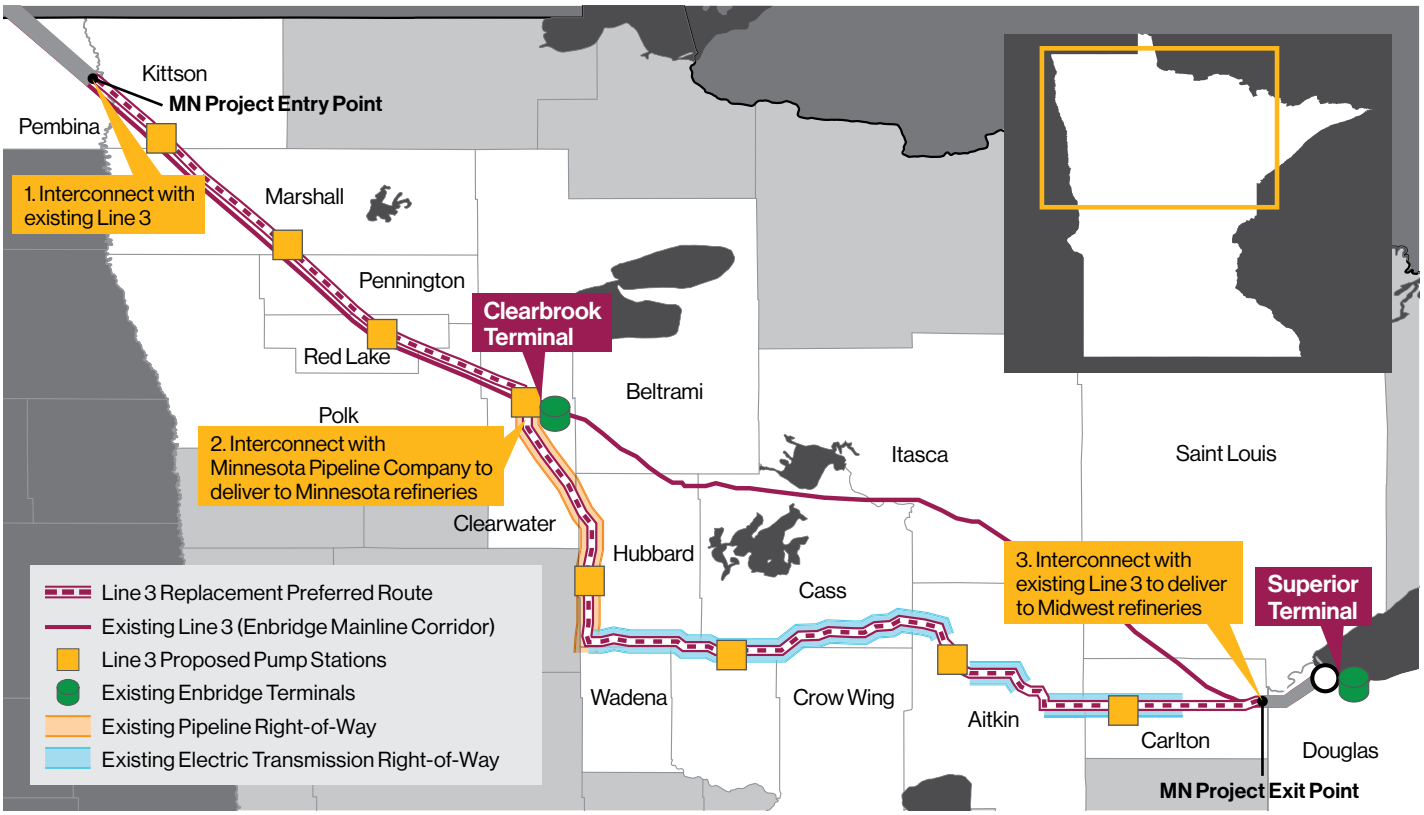
Congestion Along Existing Mainline

Route selection is a rigorous process. The Line 3 Pipeline Replacement Project preferred route avoids congested locations like this site in Bemidji near the high school. Enbridge has developed a project team of professionals with decades of experience in safely constructing and operating thousands of pipeline miles across North America.

When developing the Line 3 Replacement Route, Enbridge analyzed three options: replacing Line 3 in its existing trench, replacing it along the existing Mainline corridor, and developing a new route. Due to risks during construction within a congested right-of-way and working within close proximity to high-density population centers, Enbridge chose our preferred route.

DETAILS
Section 6
Route Permit Application

Preferred Route Selection



Any route that does not meet the three initial requirements (as identified above) would not meet the purpose of the Project, and such routes were not considered by Enbridge in its development of the Project's preferred route.

Route Selection Process

Enbridge developed the Project's preferred route based on its extensive pipeline routing experience, knowledge of applicable federal and state regulations, as well as agency, landowner and other input.

Enbridge first considered where the Project must enter, deliver within, and exit Minnesota in order to meet the needs of shippers served by Line 3. Enbridge next identified and analyzed routing constraints and opportunities, and identified and analyzed route alternatives.

Once a general route location was identified, Enbridge conducted detailed environmental and engineering survey work to further refine the route to avoid or minimize human and environmental impacts, as well as identify appropriate mitigation measures to limit potential impacts during Project construction and operation. The resulting preferred route meets the Project's purpose, maximizes opportunities for co-locating within a utility corridor, and minimizes potential impacts.

Potential Environmental Impacts of Preferred Route

The Project route, facility design, and construction procedures have been designed to minimize impacts on the environment. Environmental impacts related to construction of the pipeline will primarily be related to temporary disturbance to land, wetlands, and waterbodies. Environmental impacts related to operations of the pipeline will primarily be related to maintenance repairs and mowing activities.

In 2014, Enbridge started working with federal, state, and local regulatory agencies to design Project plans and permit conditions to minimize impacts to the environment. Enbridge has already committed to a variety of resource-specific mitigation measures, which are detailed in Section 7. Enbridge will retain environmental inspectors (EIs) during Project construction who will be responsible for understanding all regulatory requirements and permit conditions, and ensuring that contractors abide by these conditions. The Project will also be supervised by third-party environmental monitors who will report any concerns directly to appropriate agencies.

2,901
number of tracts/sites where surveys were conducted

1,133
tracts where wetland & waterbody delineations were conducted

1,036
tracts/sites where Phase I & II Cultural surveys were conducted

94
percent of surveys are completed

306
field staff conducting surveys in 2014

303
northern long-eared bat sites studied

DETAILS
Section 7
Route Permit Application

In-line Cleaning Tools

The deactivation process includes the use of polyurethane in-line tools with a combination of cups and disks (pictured here). These tools are used to clean the pipeline of oil.

Deactivation

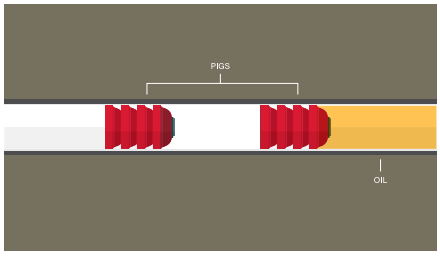
Enbridge will continue to operate the existing pipeline safely while the new pipeline is installed because refineries in the Midwest served by the pipeline rely on continuous deliveries of crude oil to provide the gasoline, heating oil, and other products that we use every day.

Once the replacement pipeline becomes operational, the existing Line 3 will be permanently deactivated.

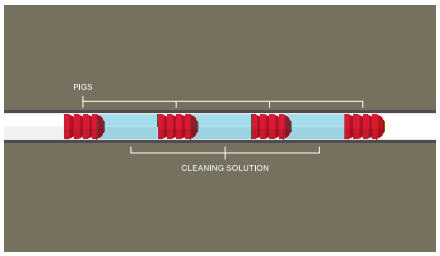
- The oil is removed;
- The pipe is cleaned;
- The pipeline is safely disconnected and isolated from facilities;
- Corrosion controls will be maintained to ensure structural integrity; and,
- The deactivated pipeline will remain in place.

Enbridge is responsible for our pipelines, whether or not those pipelines are active. We will continue to monitor the deactivated pipeline and maintain the right-of-way.

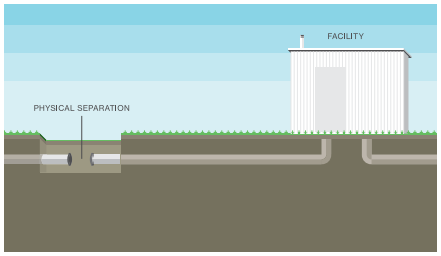
Deactivation Process



1. **Remove the Oil from the Pipeline:** The vast majority of crude oil is removed from the pipeline using specially designed cleaning instruments.



2. **Clean the Pipeline:** A combination of cleaning instruments and cleaning solution is used to wipe and clean the pipeline.



3. **Disconnect the Pipeline:** The pipeline is physically disconnected and sealed off from active operational facilities like pump stations to prevent oil from re-entering the system.

4. **Monitor the Pipeline:** Cathodic protection will continue to be applied to the deactivated pipeline.

5. **Monitor the Right of Way:** Monitor the Right of Way with regular pipeline patrols, pipeline signs indicating exact location, depth of cover surveys and "Call Before You Dig" Programs.

DETAILS
Section 8
Route Permit Application

Public Participation

It has always been evident to Enbridge that construction of a pipeline starts with open and frank discussions within the community. To that end, Enbridge has and will always be committed to meaningful and robust communication and dialogue throughout the development, construction and operation of the Project. As with all of its projects, Enbridge's goal is to provide Project information to, receive input from, and address questions and concerns raised by those affected by the pipeline.

To achieve this goal, Enbridge developed a Line 3 public outreach plan designed to provide a variety of ways for all interested parties to obtain information about and provide input regarding the Project. Enbridge has identified and reached out to landowners likely to be affected by the Project, elected and public officials at all levels of government (federal to township), emergency responders, business and environmental groups, community groups, other interested parties, and the public. This initial approach to public outreach provides opportunities for stakeholders to provide input and learn about the Project in its early stages.

Enbridge's outreach activities include, but are not limited to, listening sessions and open houses in communities along the Project's preferred route, Project introductory letters to elected officials and potential landowners along the preferred route, news releases and media advisories, publicly-available fact sheets and survey results, one-on-one meetings with individuals and local groups, and offering various means by which the public can connect with Project representatives. Enbridge will continue these activities throughout the life of the Project.

Stay Informed

The MPUC's process provides multiple opportunities for public participation, including public meetings and public comment periods. Minnesotans can stay informed and follow the progress of regulatory approvals by visiting the Minnesota Public Utilities Commission's website at **www.mn.gov/puc**.

- Simply click on "eFiling and eDockets" and go to "Search Documents" where you can look for the docket number that applies to the particular project (PL-9/PPL-15-137).

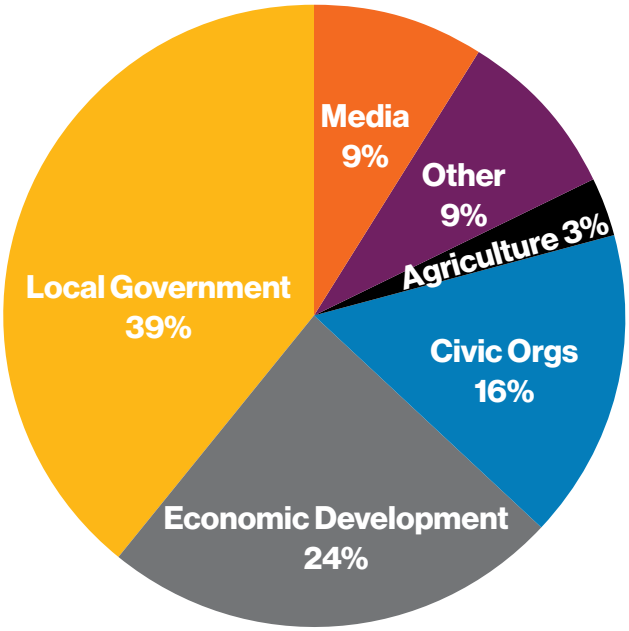
Commitment to Public Outreach

In addition to the open houses held in December 2014, Enbridge's public outreach efforts have included one-on-one meetings with individuals, agricultural-based organizations, business organizations, civic organizations (including environmental and conservation organizations), state and local governments, and media organizations. Since March 2014, more than 308 meetings have been held with these stakeholders along the Project's Preferred Route to present Project information and answer questions and concerns about the Project. Enbridge will continue to meet with stakeholders throughout Project development to listen to input and share information regarding the Project.

Project Contacts:

- Website: **www.enbridge.com/Line3**
- Email: **Line3ReplacementProject@enbridge.com**
- Toll-free number: **1-855-788-7812**
- Mailing address: **Enbridge Energy**
  Line 3 Replacement Project
  1409 Hammond Avenue
  Superior, WI 54880

Public Outreach by Type



Public Participation and Agency Coordination by the Numbers

350+
7 open houses — 350+ people attended

1,033
1,033 stakeholder notification letters sent

2,516
2,516 landowner notification letters sent

13,938
13,938 Line 3 website visits since April 1, 2014

308
308 stakeholder engagements

100+
100 + comments received via email and hotline

DETAILS
Section 9
Route Permit
Application

Safety Report

Commitment to Safety

The safety of the public, our communities and our employees is Enbridge's top priority. To ensure the safe construction and operation of our pipelines, we are committed to safety in our processes, our people and our technologies.

As part of our commitment to the safe and responsible operation of our pipelines, we employ comprehensive preventative measures.

- High-quality pipeline material, anti-corrosion coatings and cathodic protection (a low-level direct current to inhibit corrosion)
- Pressure testing of new and existing pipelines
- Inspection and preventative maintenance programs
- Monitoring of pipelines and related facilities
- Frequent aerial and periodic ground surveys of the right-of-way
- Automatic shut-off valves and remote control valves
- State-of-the-art control center for immediate response in the event of a change in pressure or volume
- Emergency response preparedness training and drills for employees and third-party emergency responders

Construction safety

- 100 percent of our construction welds are inspected using radiography or ultrasonic testing
- Extensive inspections conducted throughout the Project's process
- Internally inspected and pressure tested before being placed into service
- Cathodic protection system is applied to the pipe and facilities to inhibit corrosion

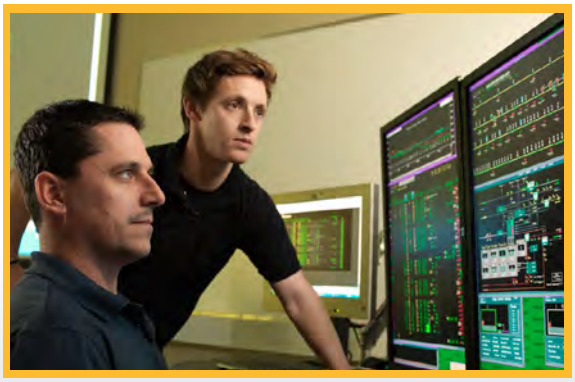
Maintenance safety

- Monitored 24-hours a day by our computerized Pipeline Control System and trained controllers
- Comprehensive preventive maintenance on our pipelines and facilities
- Extensive worker training program
- Public awareness outreach
- Periodic internal inspections of our pipelines
- Aerial patrols of our pipeline system rights of way and facilities are conducted twice a month

Built-In Safety

Pipeline systems and facilities are designed with high-quality materials and engineered to meet a variety of operating conditions and pressures.

24-hour real time computerized Pipeline Control System and trained controllers monitor the pipeline system continuously. In the event of an abnormal change in system pressures, alarms are sounded triggering a pipeline shut down including pump shut downs and valve closures until trained field personnel are mobilized to investigate.



Routine aerial and right-of-way patrols are performed every two weeks.

Internal pipeline inspection is part of pipeline maintenance and is performed regularly to check for cracks, dents and corrosion. In-line inspection devices sometimes referred to as "Smart Pigs" use sophisticated technology to assess the condition of the pipe electronically, allowing precise analysis through data collection. The data is then reviewed and helps determine if there is a need to excavate a section of the pipeline for further inspection.

The Right of Way is clear of trees and remains visible from the air.

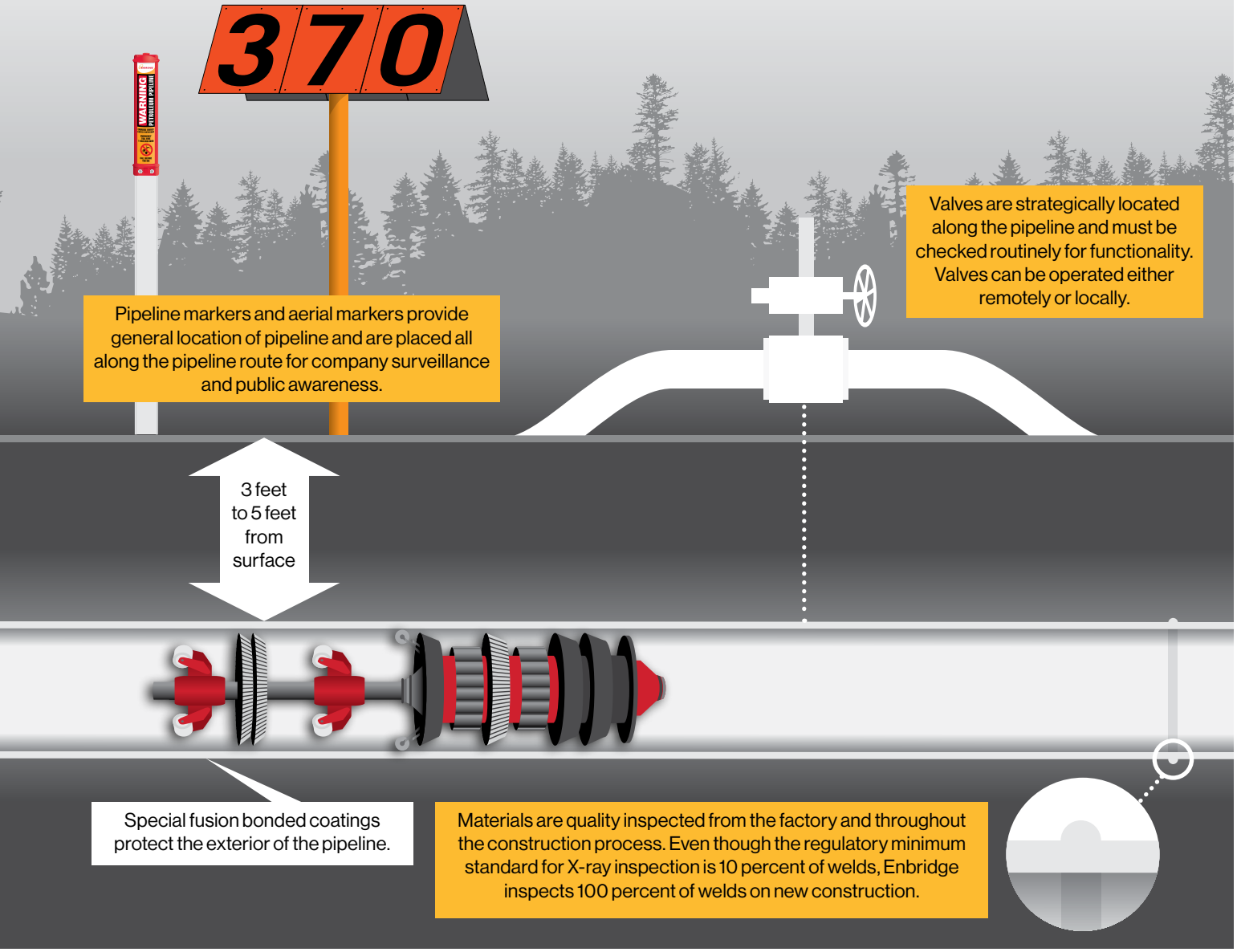
Cathodic protection is used to prevent corrosion.

Hydrostatic testing is performed prior to placing a new pipeline into service and sometimes as an additional integrity test on operating pipelines to further measure safe operating pressures using water pressurized above normal operating levels.

Prevention, Detection and Response

An integrity dig is a visual inspection where the area around the pipeline is excavated so it can be examined...inch by inch.

Typically, the area of the excavation is stripped of topsoil, which is stored separately from the subsoil. After the pipeline is excavated, the pipe coating is removed so the pipeline can be inspected. If needed, any repairs will be made and the pipeline (and coating) will be restored to proper condition.



Emergency Preparedness

- **Response Training** – Our exercises are performed with a variety of scenarios, locations, and at all times of the year. We share lessons learned within our company, with industry, and with local responders. Proven techniques and equipment are used during training exercises and strategically positioned across our pipeline system for immediate access in an emergency.
- **Pipeline Maintenance (PLM)** – Four strategically located facilities across Minnesota from the North Dakota border to the Wisconsin border are staffed by four to six trained personnel and staged with emergency response equipment. If the proposed pipeline is approved, additional crews and facilities will be added for the new route, near Hill City and Pine River Minnesota.
- **Safe Communities** – This program is dedicated to providing grants to first responder organizations located along our pipeline route.
- **Understanding Our Products** – Enbridge crews and local responders are familiar with our pipeline system and the petroleum products we transport. We have Material Safety Data Sheets (MSDS) that describe the various grades of crude oil and petroleum we carry that provide an additional resource so workers in close proximity to the products are aware and protected.
- **Community Relationships** – Our monitoring, testing, maintenance, response training, and community awareness together support overall pipeline safety. Enbridge maintenance and field employees go through annual training and we regularly invite participation from local first responders along our pipeline route and near our facilities.
- **Public Awareness** – Annual mailings, in-person and group meetings are in place to reach out to people who live and work along our pipeline system.

Minnesota participation

more than
147
registered for online emergency responder training

more than
59
registered for online 911 dispatcher training program

Enbridge purchased a specially designed helicopter based out of Bemidji that will continue our aerial patrol program

19
exercises
Enbridge response teams conducted 19 emergency response exercises in the Superior Region during 2014.

$36,500
In 2014, we contributed $36,500 to Minnesota emergency response agencies through our Safe Community Program and have donated 15 fleet vehicles to first responders over the past five years

Emergency Preparedness

Enbridge takes the responsibility of pipeline safety seriously, and we have emergency response plans in place to enable Enbridge to respond promptly and effectively. These plans are reviewed and approved by the Office of Pipeline Safety, the federal pipeline safety regulator. Our employees also conduct extensive training and regularly meet with and train with local emergency responders. Multi-agency training, as this photo shows, brings together our employees with other responding agencies to implement our plans, use our equipment, and engage our teams to promote swift response should it be needed.

Line 3 Maintenance and Integrity Program

What is integrity?

We continually perform routine maintenance across our pipeline system, including using internal inspection tools that travel inside our pipelines to collect data and evaluate the condition of the pipeline. In some cases, the inspection tool locates a feature that requires a visual inspection to determine if a repair or other action is required. This is called an Integrity Dig.

Features that may require a repair include third-party excavation damage, external corrosion, or denting.

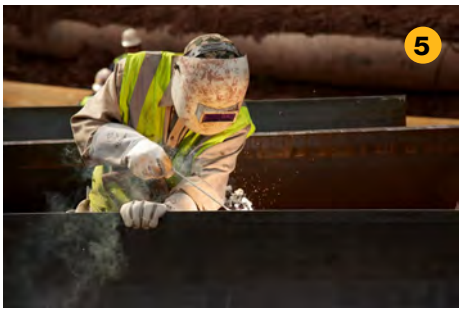
Integrity Dig Steps

Identify dig site and strip topsoil where applicable

Excavate to expose the pipe

Clean the exposed pipe

Inspect the pipe



Repair the pipe segment, as necessary

Re-coat the pipe

Backfill excavation and cleanup

Restoration

Restored right-of-way

Pipeline Safety

Pipeline safety is at the core of Enbridge's operations. Enbridge's primary goal is to safely deliver crude oil with zero incidents, while maintaining the safety of its work force, the public, and the environment. By continuously improving existing practices and processes, Enbridge seeks to provide world-class performance, resulting in public and personal safety, care for the environment, reliability, and efficiency. Enbridge's policies and standards are in accordance with PHMSA regulations and industry standards. Through its efforts, Enbridge works to prevent incidents and unintentional releases that can have a serious impact on people, the environment, and our assets.

Continued Operations Program

Public Awareness and Damage Prevention

Pipelines are the safest, most efficient, and most reliable way to transport liquid and natural gas energy resources. Enbridge operates thousands of miles of pipelines throughout North America. Our top priority is operating those pipelines safely. We work diligently to protect our underground pipeline infrastructure, because it means our neighbors and employees are protected as well.

Pipelines in the United States are regulated by the respective state, or by the Pipelines and Hazardous Materials Safety Administration (PHMSA). Through Enbridge's public awareness program, we regularly provide pipeline safety information to the people who live and work along our pipeline routes, as well as public officials, emergency responders, school officials, farmers, and excavators. It's important for all members of the communities along our pipeline rights-of-way to:

Know about Pipeline Markers

- Pipeline markers provide emergency contact information and information about the products transported.
- Pipeline markers identify the existence of pipelines which are visible from the air.

Dig Safely

- Call 811, the national "Call Before You Dig" number and wait for verification.
- Follow guidelines for digging safely to prevent damage to underground utilities.

Know the Warning Signs of a Potential Emergency

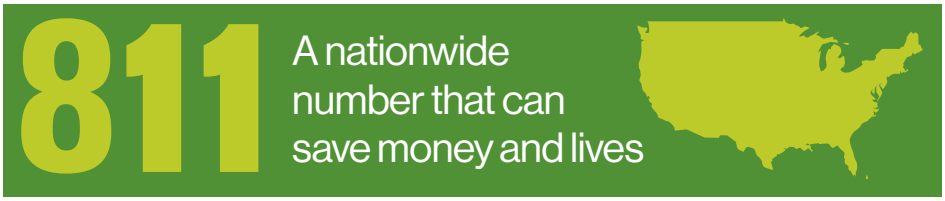
- A pool of liquid on the ground
- Discolored vegetation or snow
- Oily sheen on water
- An unusual petroleum or "rotten egg" odor

How to Ensure a Safe Response

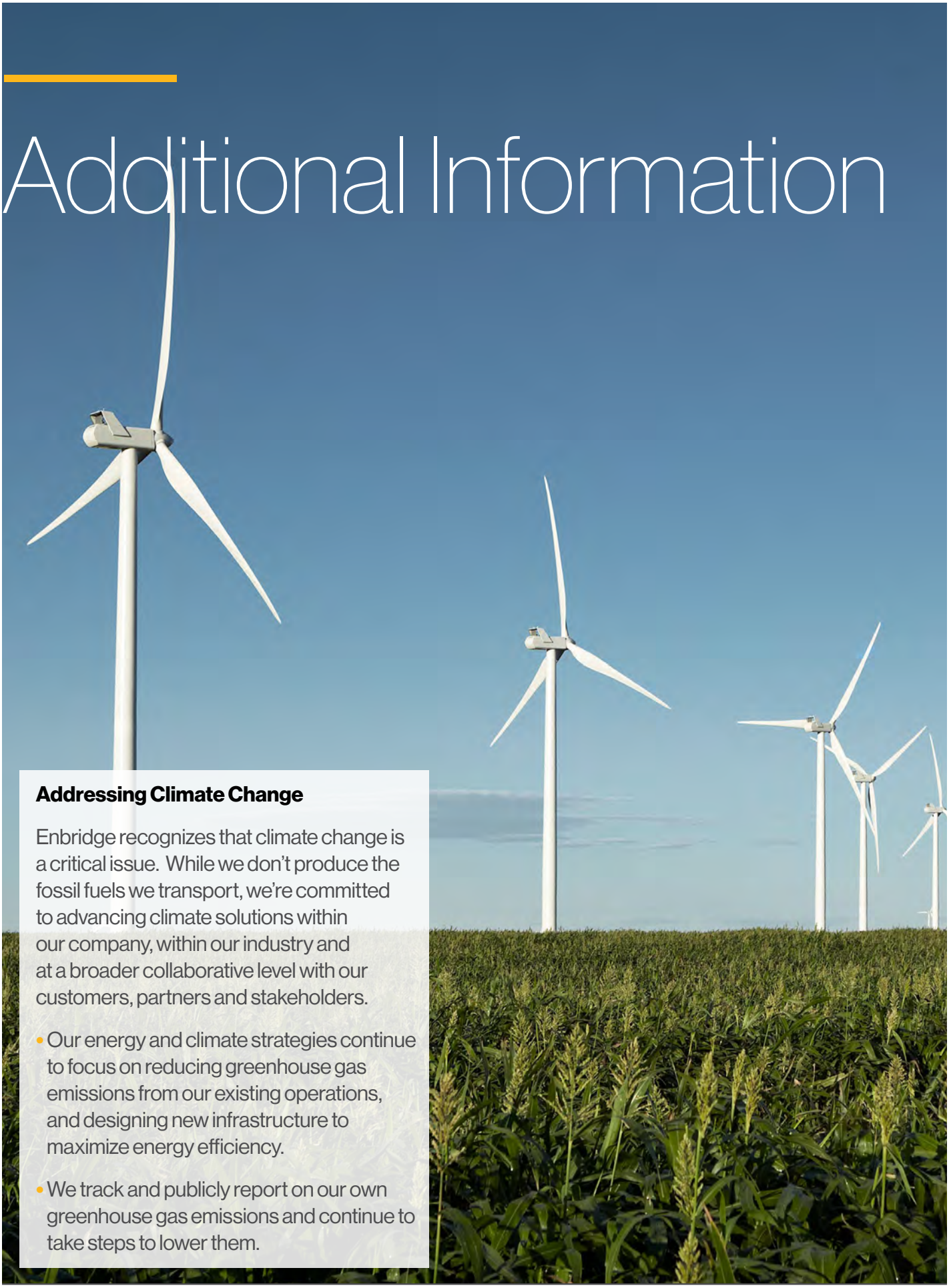
- Call 911
- Then call Enbridge at 1-800-858-5253
- Follow instructions provided by Enbridge and local emergency responders

Information on the general location of transmission pipelines and contact information for pipeline operators is also available through the National Pipeline Mapping System. Maps, markers, and other resources should never be used to find the exact location of a pipeline. Always call 811 before you dig.

The public can contact Enbridge to learn more about Public Awareness and pipeline safety through email at USpublicawareness@enbridge.com or by calling our hotline at (877) 799-2650.



Additional Information



Addressing Climate Change

Enbridge recognizes that climate change is a critical issue. While we don't produce the fossil fuels we transport, we're committed to advancing climate solutions within our company, within our industry and at a broader collaborative level with our customers, partners and stakeholders.

- Our energy and climate strategies continue to focus on reducing greenhouse gas emissions from our existing operations, and designing new infrastructure to maximize energy efficiency.
- We track and publicly report on our own greenhouse gas emissions and continue to take steps to lower them.

Investing in Renewable Energy

In order to meet changing North American demand for energy, Enbridge is playing a leadership role in bringing renewable energy to scale and to market.

Since our initial investment in a wind farm in 2002, our renewable and alternative energy assets can now generate more than 2,200 megawatts. That is enough to meet the energy needs of more than 700,000 homes. Enbridge renewable and alternative energy assets include:

Wind

- 14 wind farms across North America
- 80 percent interest in two wind farms in Texas and Indiana and combined they provide enough clean power for more than 120,000 homes
- Two additional wind farms in Colorado and Texas

Solar

- Silver State North project in Clark County, Nevada
- Three Ontario-based solar projects

Geothermal

- Neal Hot Springs, Oregon's first commercial geothermal power facility, taps into heat beneath the Earth's surface to generate electricity

Enbridge Assets

Enbridge's growing energy assets... Wind, Solar, Geothermal, Waste Heat Recovery, Hydrogenics, and Temporal Power.

More than 2,200 megawatts – Gross generating capacity of the renewable and alternative energy projects in which Enbridge has interests.

More than 700,000 homes – Number of homes that can be supplied by Enbridge renewable and alternative energy projects.