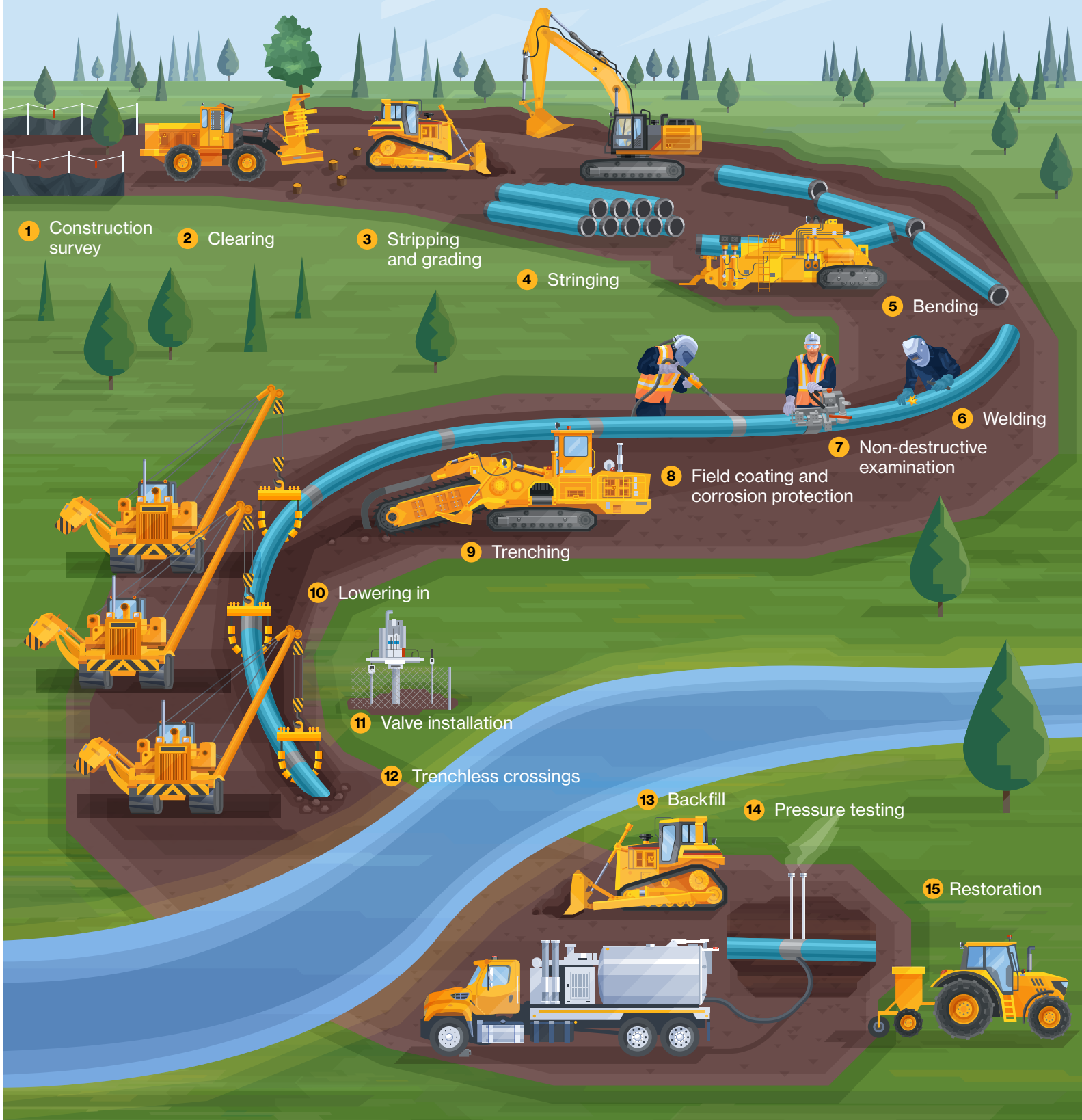


Pipeline construction: Safety and the environment

Safety and reliability are built into Enbridge's energy infrastructure. We take care to limit our footprint and actively manage potential effects on communities and the environment as we build our pipeline projects.



- 1 Construction survey:** Surveying involves placing visible markers along the pipeline route to clearly define the boundaries of the work area. These markers guide the construction team in accurately positioning the pipeline and related components according to the design drawings and specifications.
- 2 Clearing:** Next, crews use specialized equipment to mulch, salvage (where permitted) and clear trees along the pipeline route and within the temporary workspace. This removes debris from the area and creates a safe, accessible environment to begin construction.
- 3 Stripping and grading:** Once clearing is complete, the top layer of soil is carefully removed and set aside for preservation. Following this, grading equipment is used to shape and level the right-of-way, creating a stable working surface that is safe for construction activities, vehicle movement, and ongoing work in the area.
- 4 Stringing:** This involves laying sections of the pipe on the ground and along the pipeline route in the order they are to be joined and installed underground.
- 5 Bending:** Crews then carefully bend these sections of pipe to match engineering specifications. This allows the pipe to follow the natural contours of the land, helping the installation proceed smoothly while limiting damage or stress to the pipe.
- 6 Welding:** As the crew moves along the pipeline route, it welds the individual pipe sections, heating the ends and joining them to create a strong, continuous and secure pipeline.
- 7 Non-destructive examination:** After all the pipe sections are fused together, each weld is carefully inspected by using Non-Destructive Examination methods (e.g. ultrasonic technology). These examination techniques help us to identify any conditions that do not meet the design criteria and detect anomalies that cannot be visually observed without the use of specialized equipment. If any irregularities are found, they are corrected and re-examined to verify the integrity of the weld.
- 8 Field coating and corrosion protection:** The pipeline is then covered with a protective coating to prevent moisture, soil and other environmental factors from causing external corrosion or damage.
- 9 Trenching:** Next, crews dig a long, narrow ditch along the pipeline route. The trench is designed to safely accommodate the underground installation of the pipeline.
- 10 Lowering in:** Next, sections of the pipeline are lifted off temporary supports and gradually lowered into the trench. Side booms – specialized machines using soft, non-metallic slings and rollers – control and guide the pipe securely while protecting its coating.
- 11 Valve installation:** Valves are typically installed at the beginning and end of the pipeline to help control the flow of the product being transported. Additional valves also might be installed along the route so that specific segments of the pipeline can be isolated when maintenance activities are required.
- 12 Trenchless crossings:** If the pipeline crosses a sensitive area, such as river, lake or roadway, trenchless crossing methods are often used to limit impact. Common trenchless techniques include horizontal directional drilling (HDD), which involves drilling a curved path beneath the surface; and slick-bore drilling, which involves creating a straight underground tunnel for the pipe. These activities can be scheduled at various stages throughout the construction process.
- 13 Backfill:** After the pipeline is lowered in place, crews make sure the soil excavated at the beginning of the construction process is free from debris or large stones. They then use it to fill the trench until the pipeline is completely covered and safely underground.
- 14 Pressure testing:** Next, each section of the pipeline is filled with water and pressurized for eight continuous hours to a level higher than the pressure at which the pipeline will operate. This pressure test helps to verify the pipeline's strength and integrity before it is put into service.
- 15 Restoration:** After pipeline construction and installation is completed, the work area will be cleaned and restored to its pre-existing contours to the extent practicable. This could include replacing topsoil or replanting vegetation.

Limiting our footprint



As we plan and build our pipeline projects, we make every effort to limit our construction footprint. This includes:

- Using, as safely and logistically feasible, pathways where pipelines, fiber optic cables, or power lines exist (also called co-location)
- Utilizing trenchless technologies when applicable. For example, Horizontal Directional Drilling (HDD) could be used to install a pipeline. This technique limits aboveground disturbance in sensitive areas
- Following all environmental regulatory requirements and working closely and continuously with governing agencies
- Maximizing the use of existing access roads to and from construction sites

Staying safe on the roads



During construction, some might notice an increase in the presence of trucks, buses and crew vehicles on highways and other roadways. To manage traffic safely and reduce delays, Enbridge:

- Develops a traffic plan to reduce disruptions for local residents and businesses
- Moves heavy equipment across access roads during off-peak hours
- Uses buses to transport crews to and from construction sites where possible
- Communicates with the community and first responders on any anticipated disruptions to normal traffic patterns
- Follows all mandated noise limits
- Installs and maintains proper signage at work sites, road and temporary access crossings
- Builds protective structures to prevent damage to road surfaces and help trucks and equipment cross safely

Project restoration



We take steps to limit our long-term impact on the land through which our pipelines cross. Our restoration methods include:

- Addressing landowner and other stakeholder questions and considering their input throughout the process
- Replacing soil and planting seeds and/or trees
- Ongoing monitoring of the environment