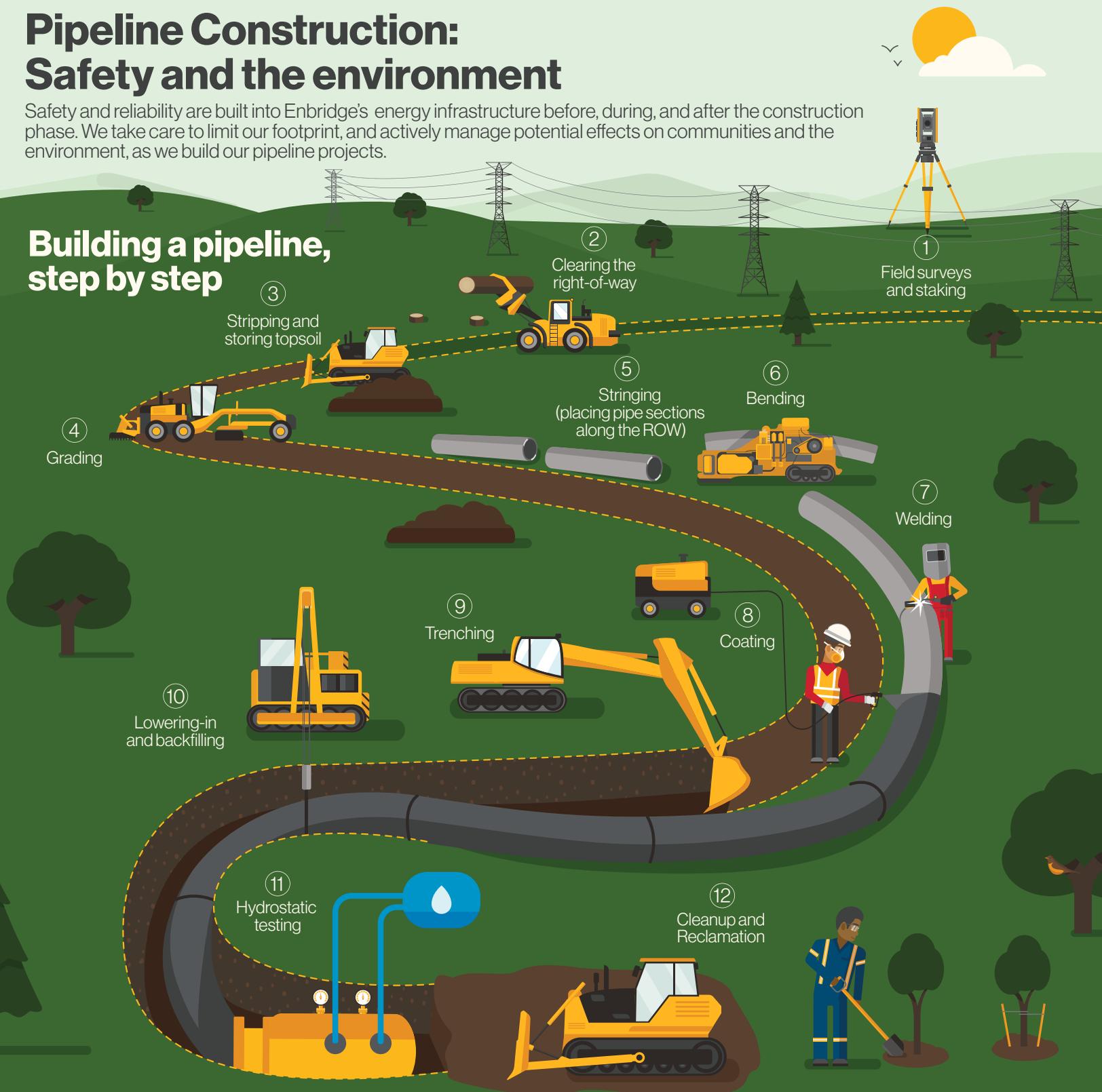


# Pipeline Construction: Safety and the environment

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

## Building a pipeline, step by step



- 1 Field surveys and staking:** Construction footprint surveys and field surveys are conducted along the proposed right-of-way (ROW). Depending on the project, we may use environmental field survey crews to evaluate and reroute around environmentally sensitive areas. Once the route is final, the location is marked with stakes.
- 2 Clearing the right-of-way:** To prepare for construction, crews mulch and/or clear and salvage trees, where warranted, along the ROW and temporary workspace.
- 3 Stripping and storing topsoil:** Careful consideration is taken when removing topsoil from the right-of-way. For biosecurity reasons, we take special care in agricultural areas to separate and store the topsoil and subsoil so they don't mix.
- 4 Grading:** Once topsoil has been stripped and stored to meet specifications, the subsoil along the ROW is graded to enable a safe pipeline installation.
- 5 Stringing:** Crews re-stake the center of the trench, and place (or "string out") sections of the pipe along the ROW.
- 6 Bending:** Crews bend the sections of pipe to match engineering specifications and follow the contours of the land.
- 7 Welding:** The pipe is welded into sections, and eventually one long segment, with each weld inspected via either X-ray or ultrasound technology.
- 8 Coating:** Pipes are coated with a robust corrosion inhibitor.
- 9 Trenching:** Crews use backhoes or wheel ditchers to dig a trench.
- 10 Lowering-in and backfilling:** Using multiple sidebooms (cranes), the pipe is lowered into the trench, and the trench is carefully backfilled and compacted with subsoil.
- 11 Hydrostatic testing:** Each section of pipe is filled with water and subjected to extreme operating pressures to ensure the strength of the pipe and the welds.
- 12 Cleanup and reclamation:** The ROW is restored to its original condition. Topsoil is replaced and reseeded; other restoration methods include tree planting and environmental monitoring.



## Limiting our footprint

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

This includes:

- Using pre-existing rights-of-way, such as utility corridors, where possible
- Using horizontal directional drilling (HDD) technology, which involves drilling an underground arched tunnel, whenever possible to install underground pipelines across large rivers or sensitive crossings
- Working closely, and continuously, with regulatory agencies, and complying at all times with all environmental requirements
- Using existing access routes to and from construction sites, minimizing temporary workspace, and limiting ground disturbance

## Staying safe on the roads

During construction, residents can expect to see an increase in Enbridge traffic — heavy-haul vehicles, buses and crew trucks — on highways, secondary highways and rural township roads. To manage traffic volume and ensure public and worker safety, we make sure to:

- Develop a traffic accommodation plan to minimize impacts to community residents
- Move heavy equipment across roads during off-peak hours
- Bus crews to and from the construction site where possible
- Actively communicate with the local community on any disruptions to normal traffic patterns
- Pay strict adherence to mandated noise limits
- Install and maintain proper signage at work sites, road and temporary access crossings
- Build protective structures to prevent damage to road surfaces and facilitate equipment and truck crossings



## Habitat restoration

Following construction, we minimize our long-term impact to the land along our pipelines. Our habitat restoration methods include:

- Reclamation, including soil replacement, seeding, and tree planting
- Environmental monitoring and mitigation
- Follow-up landowner outreach