CUSTOMER GUIDE FOR ROUTING YOUR NEW POWERLINE

When you need a new electric service line to energize your home or business, we're here to help you get connected.

To get energized, you'll need to know your site location, voltage, service entrance size or operating load requirements and the route for your powerline. After gathering this information, you can fill out an application on ATCO's Electricity's Self Serve Portal or call us at 1-800-668-2248

This guide is intended to help determine the route for your powerline so we can energize your home or business. Determining the route for the powerline is one of the largest determining factors of project cost and timelines. There are many factors that come into consideration when planning the route like the characteristics of your site and where it is in relation to our existing electrical facilities.

First, there are two types of powerlines to consider – overhead and underground. Both have benefits and drawbacks.

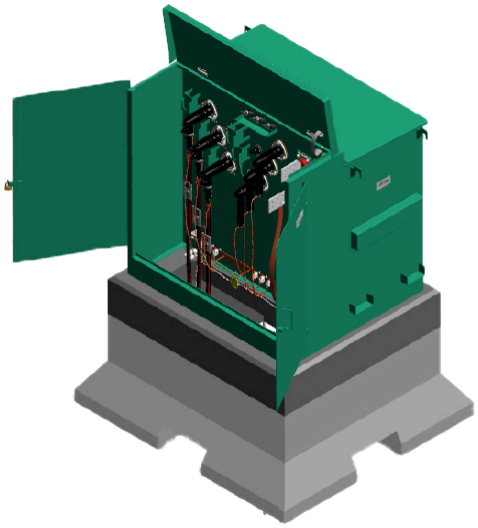
UNDERGROUND POWERLINE CONSTRUCTION

Pros:

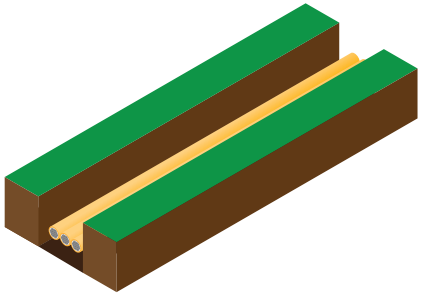
- Typically clearances for underground are less than overhead
- Smaller overall footprint
- Does not require a wide Right-of-Way
- Not subject to external factors, like extreme weather or animals
- For site congestion, underground is better

Cons:

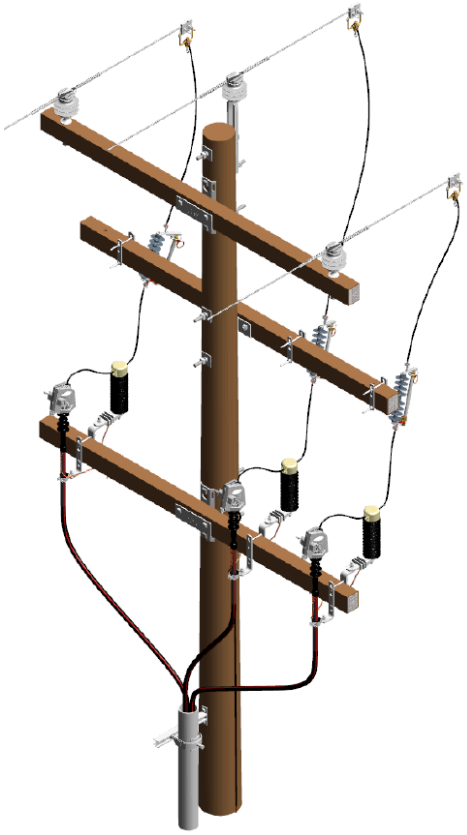
- More costly than overhead powerline construction
- Larger ground disturbance and equipment footprint



Padmount Transformer (size may vary with load requirement)



Underground Cable (sometimes in conduit)



Riser Pole - transitioning between overhead and underground

OVERHEAD POWERLINE CONSTRUCTION

Pros:

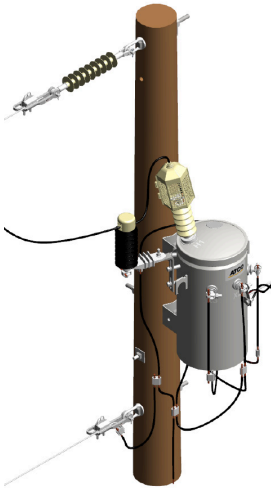
- Typically can be less costly than an underground powerline
- Less ground disturbance
- Transformers can be mounted on a pole which creates a smaller equipment footprint
- Can cross over most obstacles
- Easy to implement in straight lines

Cons:

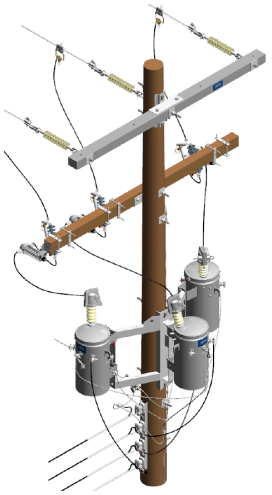
- May need to trim or remove trees that are in the way (Note: ATCO can help remove trees if they are in the way of the powerline route)
- Requires a minimum clearance to cross over obstacles
- Requires a wider Right Of Way than underground
- Requires a 7.5m clearance on either side of the poles
- In addition to the line and poles we often need to anchor the line which increases our footprint. Anchors are typically 5m from base of pole.
- More exposure to weather and wildlife which can create unexpected outages

Please note: Overhead powerlines cannot cross over:

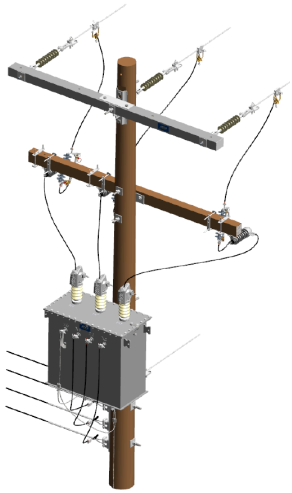
- School Zones
- Recreational areas
- Hay stacking areas
- Granaries
- Homes
- Decks
- Fuel storage areas and dispensaries
- Barns, Garages, Machine Shed, Quonsets



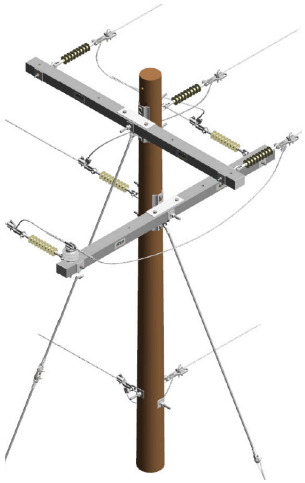
Single Phase Transformer Pole



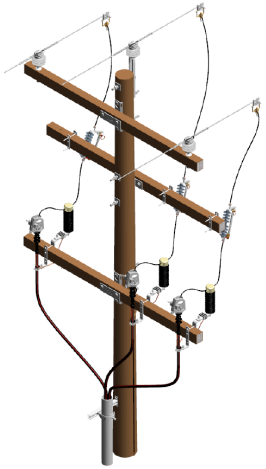
3-Phase Cluster Transformer Pole



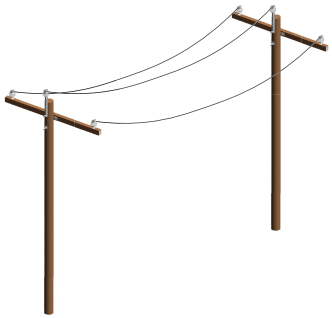
3-Phase Oilfield Transformer Pole



Pole with Anchor



Riser Pole



Overhead Conductor

Customers can safely remove trees on their own property, but trees to be removed on other landowners property or in road allowance required approval and is to be completed by ATCO. Visit the link below for more info.
https://www.atco.com/content/dam/web/for-home/electricity/electricity-tree-brochure.pdf

PREFERRED HORIZONTAL CLEARANCES

Once you decide on an overhead or underground powerline, you'll have to consider horizontal clearances. If preferred horizontal clearances cannot be met, ATCO will work with you to design a safe route. Always maintain a safe distance to power lines.

Overhead Powerlines

A minimum of 3m

- Fences
- Water Lines
- Sewer Lines
- Communication Lines
- Buildings
- Waterflood & Disposal System

A minimum of 5m

- School Grounds
- Recreational Areas
- Storage Yards
- Boat Launching Areas
- Edge of Roadways

A minimum of 15m

- Hay Stacking Area
- Granaries (not permited between rows of granaries)
- Rural Working Areas
  - Barns
  - Quonsets
  - Sheds
  - Machine Shop

Other

- **6.0m** - Homes
- **7.5m** - Trees
- **10.0m** - Fuel Tanks

Underground Powerlines

A minimum of 1.5m

- Fence
- Buildings
- Fuel Storage Tank
- Property Line

A minimum of 3m

- Water Lines
- Sewer Lines
- Vegetation

Other

- **0.3m** - Communication Lines

Padmount Transformer

Measured from the center of transformer.

**Clearance may be reduced depending on the GPR (Ground Potential Rise) value at the location.*

- **4.0m** - Working Space on Doorside
- **6.1m** - Chainlink Fence, Metal Building
- **4.1m** - Building, Fence, Wall

Final clearance approval is required before proceeding

Questions? Call Us 1-800-668-2248

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MEASURING YOUR DISTANCE

Step 1
Identify the existing power line, this is where your service will be fed from

Step 2
Identify your final transformer location

Step 3
From where your service will be fed from, select your route using tips within the examples. Use one of the following two methods:

Method 1: Walking the route from the transformer to where your powerline is going to be. If the line is going to be overhead, please keep it in straight lines with 90 degree turns.

Note: Maximum span length between poles is 100m

The average long stride is approximately 1m

Transformer Location Tip: Consult with your electrician (for residential, agricultural and commercial settings)

Method 2: Using Google Maps

Step 1: Go to Google Maps, find your site and right click the map at the starting point of your route

Step 2: Left click on "measure distance". Left click along the route and the final distance will be displayed along the bottom of the screen

Questions? Call Us 1-800-668-2248

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EXAMPLE 1 - AGRICULTURE/FARM

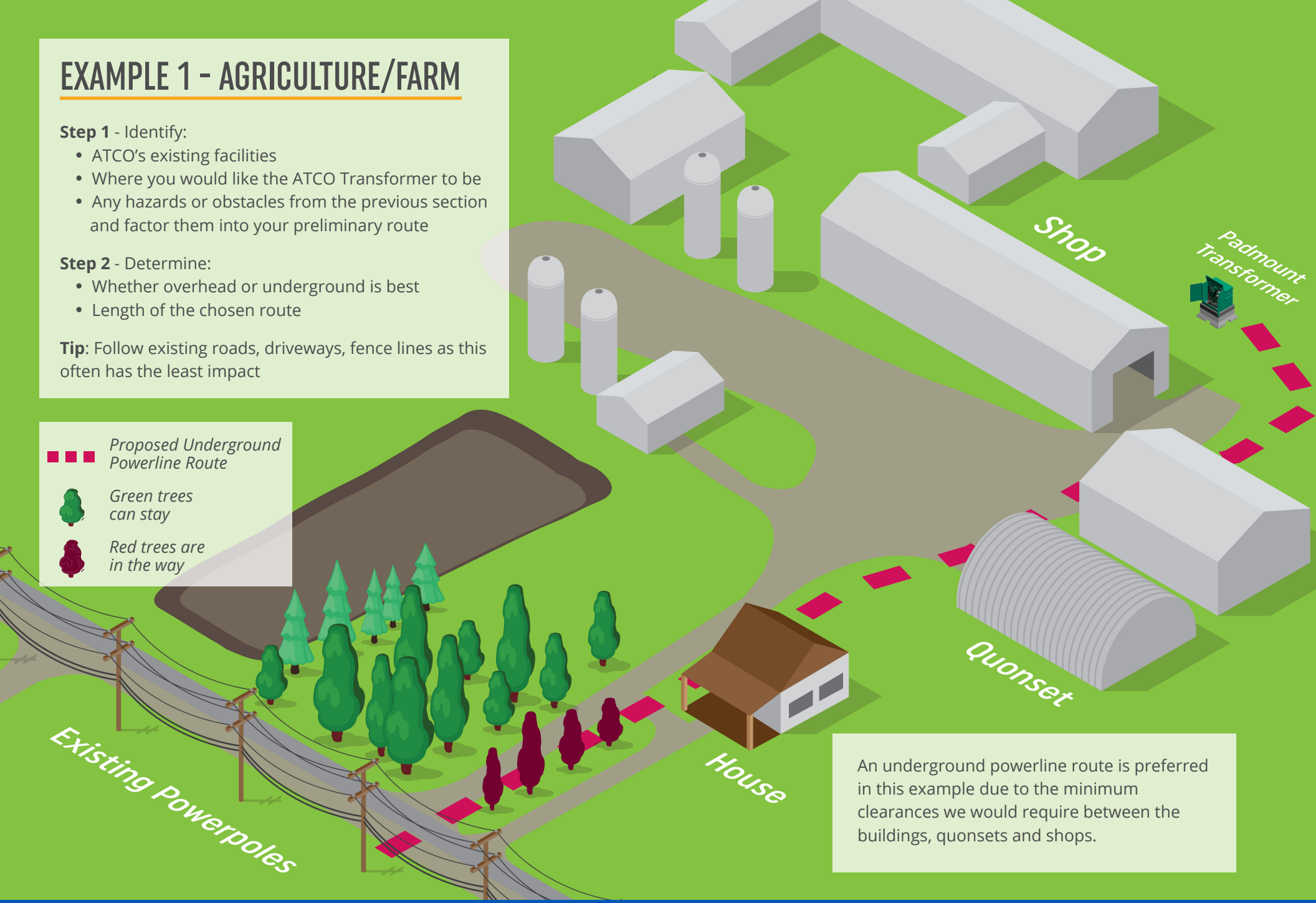
Step 1 - Identify:

- ATCO's existing facilities
- Where you would like the ATCO Transformer to be
- Any hazards or obstacles from the previous section and factor them into your preliminary route

Step 2 - Determine:

- Whether overhead or underground is best
- Length of the chosen route

Tip: Follow existing roads, driveways, fence lines as this often has the least impact



An underground powerline route is preferred in this example due to the minimum clearances we would require between the buildings, quonsets and shops.

EXAMPLE 2 - RURAL/RESIDENTIAL

Step 1 - Identify:

- ATCO's existing facilities
- Where you would like the ATCO Transformer to be
- Any hazards or obstacles from the previous section and factor them into your preliminary route

Step 2 - Determine:

- Whether overhead or underground is best
- Length of the chosen route

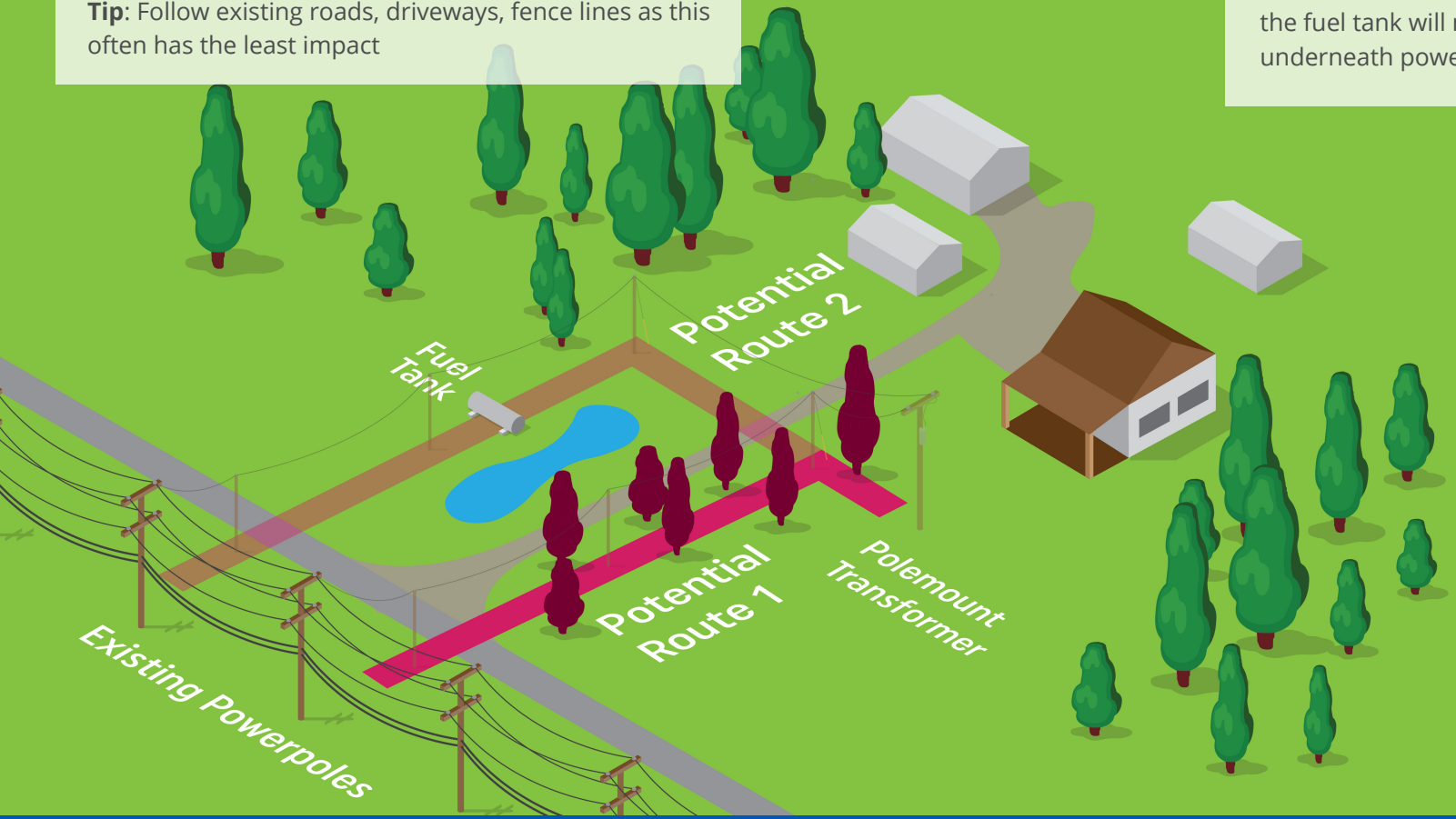
Tip: Follow existing roads, driveways, fence lines as this often has the least impact

Proposed Overhead Powerline Route

Green trees can stay

Red trees are in the way

An overhead powerline route is preferred in this example since the path is straight and clearances are not an issue. Route 1 is optimal because the fuel tank will not be in the way. Fuel tanks underneath powerlines is not allowed.



EXAMPLE 3 - COMMERCIAL

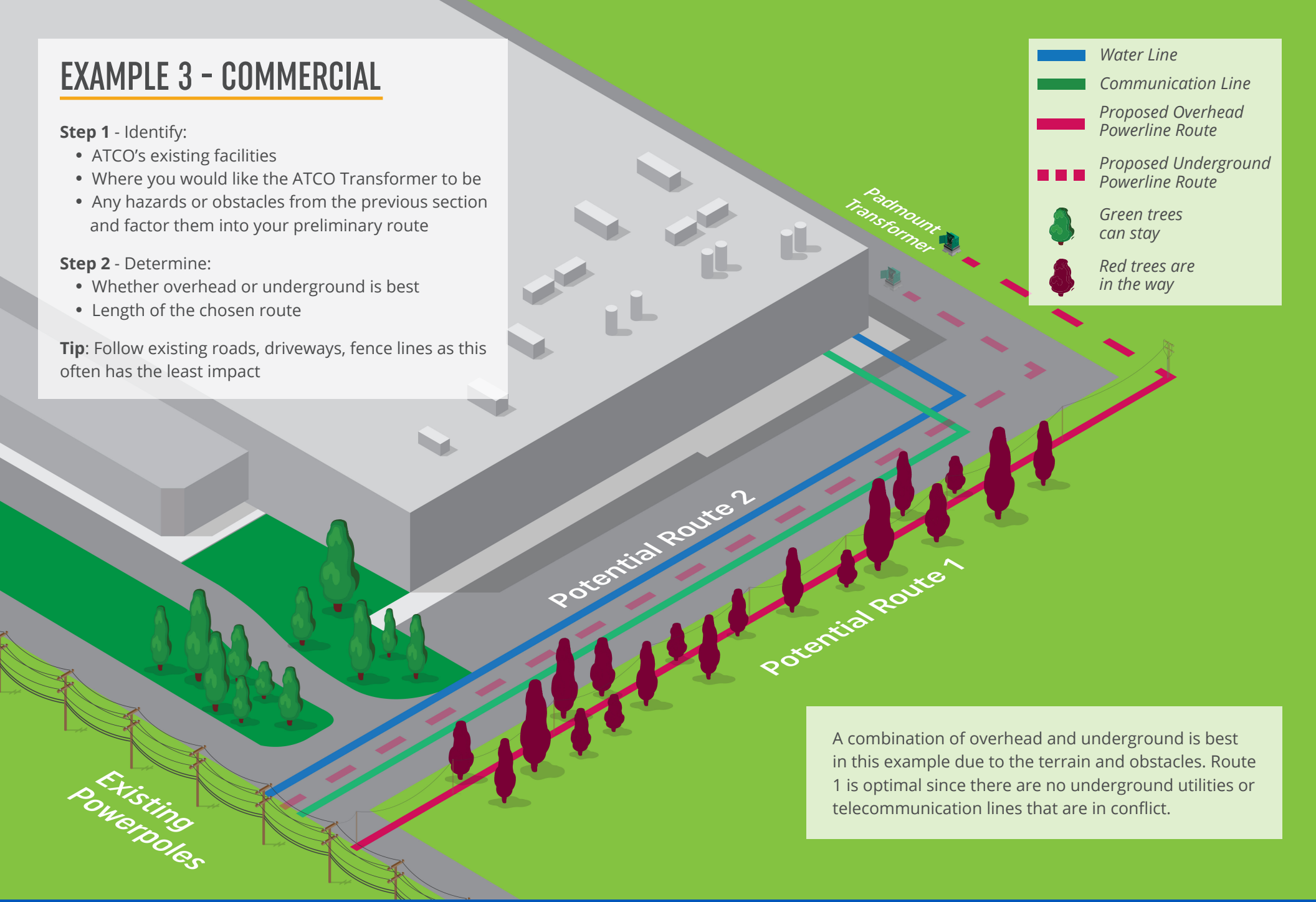
Step 1 - Identify:

- ATCO's existing facilities
- Where you would like the ATCO Transformer to be
- Any hazards or obstacles from the previous section and factor them into your preliminary route

Step 2 - Determine:

- Whether overhead or underground is best
- Length of the chosen route

Tip: Follow existing roads, driveways, fence lines as this often has the least impact



A combination of overhead and underground is best in this example due to the terrain and obstacles. Route 1 is optimal since there are no underground utilities or telecommunication lines that are in conflict.

EXAMPLE 4 - INDUSTRIAL

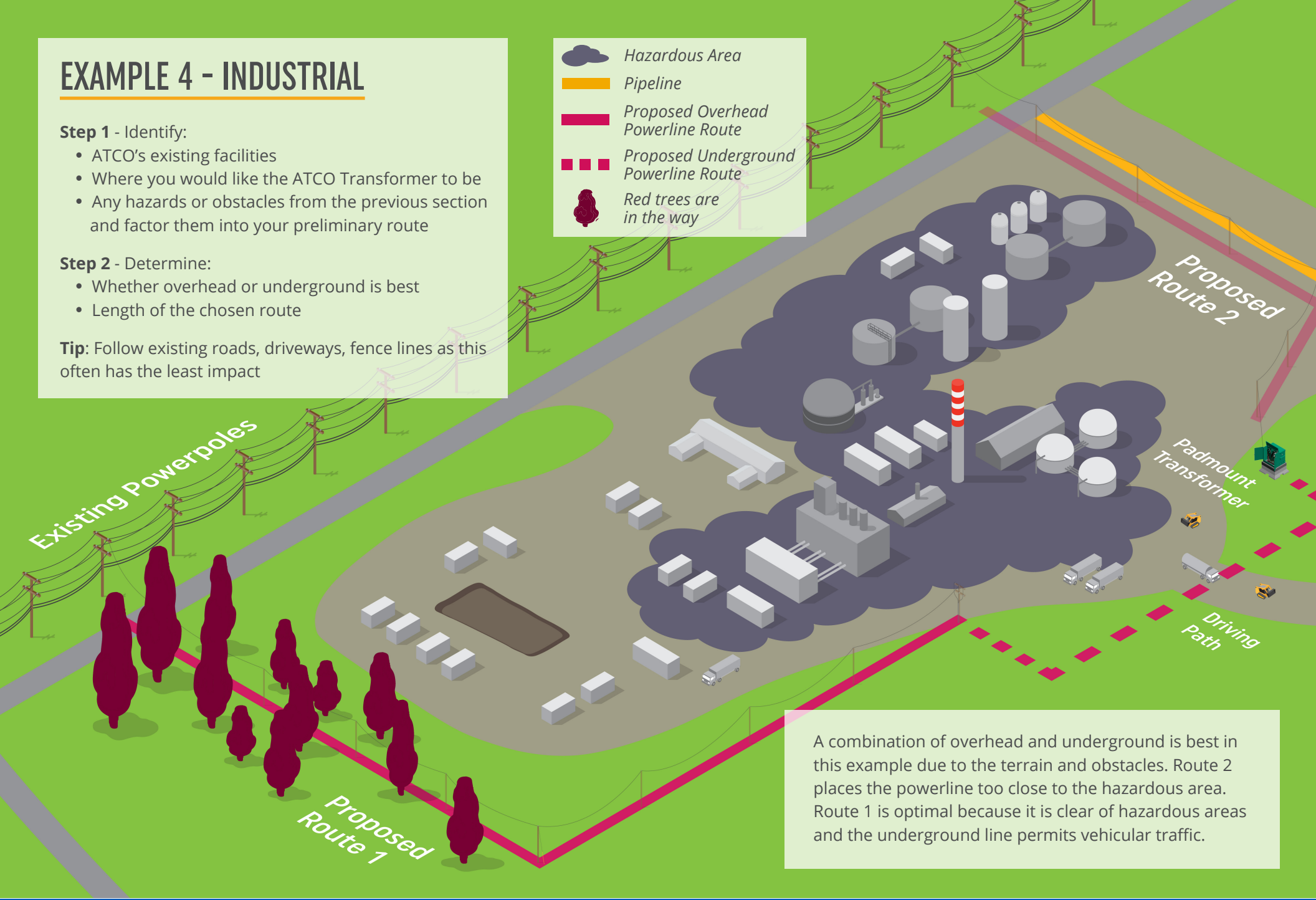
Step 1 - Identify:

- ATCO's existing facilities
- Where you would like the ATCO Transformer to be
- Any hazards or obstacles from the previous section and factor them into your preliminary route

Step 2 - Determine:

- Whether overhead or underground is best
- Length of the chosen route

Tip: Follow existing roads, driveways, fence lines as this often has the least impact



A combination of overhead and underground is best in this example due to the terrain and obstacles. Route 2 places the powerline too close to the hazardous area. Route 1 is optimal because it is clear of hazardous areas and the underground line permits vehicular traffic.