



A Guide To Pipeline Route Studies

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Project teams execute route studies to identify and eliminate any potential risks and mitigate project delays, as well as optimise the pipe route, which will decrease project costs and schedule

Below are some of the basic steps in successfully executing a pipeline route study

1

Desktop Analysis

Clearly define start & end point. Use Google Maps or a GIS Database to establish multiple route options in relation to:

- Elevations
- Population density
- Mineral reserves
- Roads
- Power and railway lines

2

Field Review

Ensure that the Field Review Team navigates each route option & verifies the Desktop Analysis findings, as well as:

- Community reviews
- Safety hazard identification
- Constructability
- Ease of access to route
- Wayleave risk identification
- Pipeline integrity consideration

3

Hydraulic Simulations

Using software such as AFT Fathom or AFT Arrow, determine the optimal line size, schedule, pump/compressor requirements and locations of pump stations and valve stations

(NB: Remember to establish the elevation profile for each route as this will affect the results!)

4

Cost Estimate

Determine a cost estimate for each route option, including all engineering and construction works and personnel.

This can be done using software such as CCS Candy, CCS BuildSmart or a Historical Database and can be established at a $\pm 30\%$ accuracy in this stage of the project

5

Cost-Benefit Analysis

To assess the cost of maintaining pipeline design technical integrity versus the benefits of doing so. The analysis considers:

- Technical integrity & Safety
- Pipeline length & diameter
- Constructability
- Environmental impact



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