Development of the Catenary Support System

APEX Summit 2016

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electrix

Beca

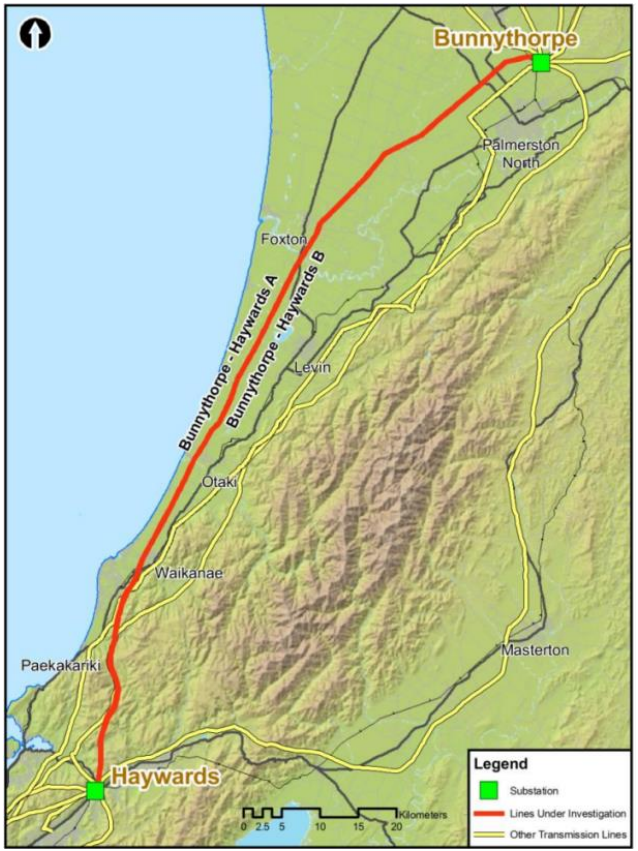
TRANSPOWER


CRUNCH

Agenda

- My Involvement with the CSS
- BPE-HAY Reconductoring
- Reconductoring process
- Traditional crossing protection
- The Catenary Support System

BPE-HAY A & B Reconductoring



- 2 lines built in the late 1950's
- Main role to move energy from the HVDC link North from Wellington
- Conductor at end of life
- Work to reconductor the lines over 5 years 2015 - 2020

BPE-HAY A & B Reconductoring

- Crosses suburban Waikanae
- 2 State Highway 1 crossings
- 2 North Island main trunk railway crossings

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Reconductoring

The simplified method of reconductoring is to:

- Place the existing conductor in running blocks at the structures
- Pull the existing conductor off the line with a large winch
- Use the existing conductor to draw the new conductor into place behind it

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Traditional Protection

Mechanical protection ranging from:

- Simple ‘H’ structures;

  to

- Extensive, netted scaffold gantries

Depending on the level of protection required

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CSS - Overview

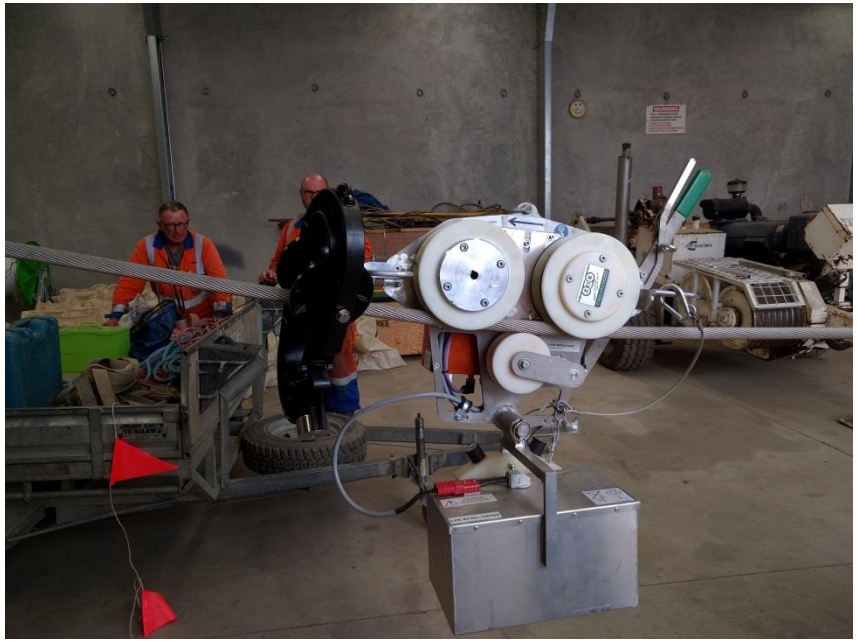
- High tensile rope deployed above the conductor
- Conductor supported with a series of lightweight blocks
- If the conductor drops, it is held up be the blocks and the rope

CSS - Blocks


CSS - Blocks
CSS - Rope

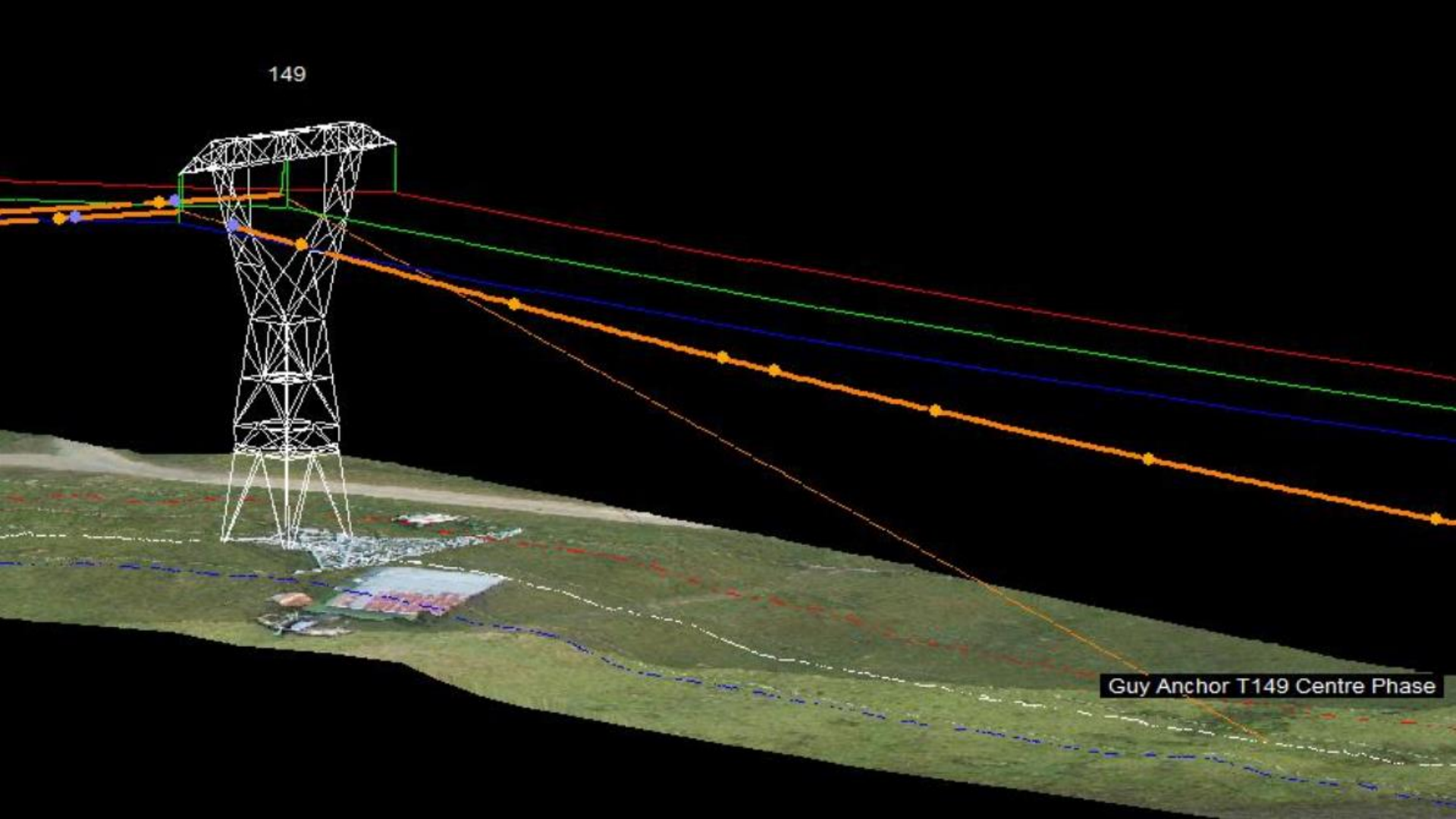
CSS - Deployment

- CSS deployed behind remote controlled tug
- Traction unit to provide tension during recovery
- Emergency recovery device for breakdowns



Summary

- CSS can protect an entire span
- CSS can be faster and cheaper than traditional hurdles
- CSS can be deployed over roads, railways, and live equipment without requiring outages or closures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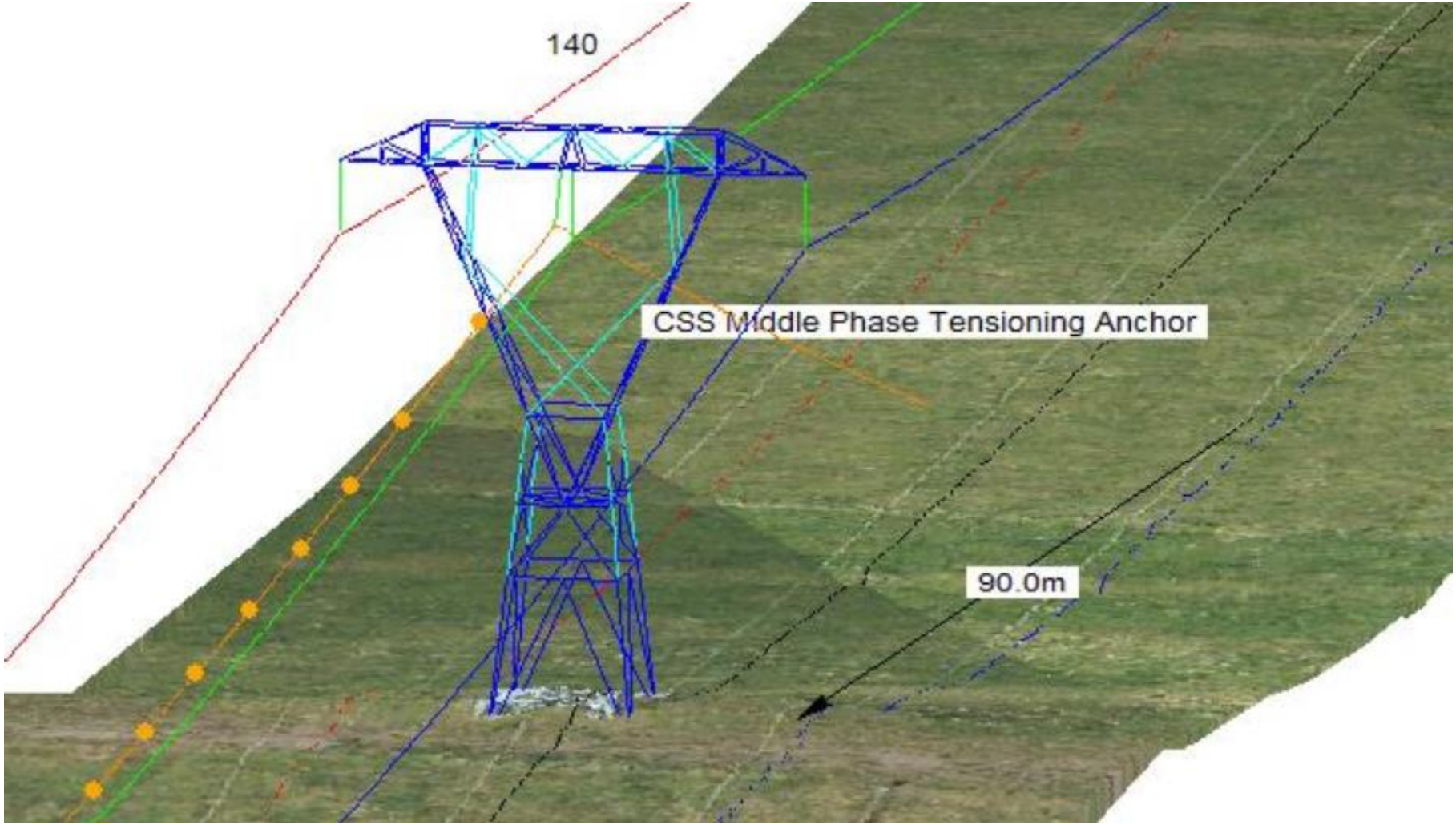
Guy Anchor T149 Centre Phase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CSS Middle Phase Tensioning Anchor
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