Asset Reinvestment Review Working Group

7 April 2022

Acknowledgement

Powerlink acknowledges the Traditional Owners and their custodianship of the lands and waters of Queensland and in particular, the lands on which we operate. We pay our respect to their Ancestors, Elders and knowledge holders and recognise their deep history and ongoing connection to Country.

Agenda

- Welcome and Review Agenda
- Line Reinvestment Overview
- Ross Chalumbin Deep Dive
- Site Visit Concept Discussion
- Review of Updated Scope
- Wrap-up

Line Reinvestment Overview

1. Collect condition data

- Data collected through ground patrols, aerial patrols, climbing inspections, and drone inspections

2. Produce meaningful aggregated scores of individual structures and lines

- Condition data is processed to develop Health Indices (HI) for each structure
- Then determine an overall Health Index for the entire built section

3. Determine rates of deterioration so that condition forecasts will be accurate

- Once current condition of structures has been determined and the rate of deterioration calculated, can forecast the likely condition in the future

4. Monitor & identify emerging risks considering the coincidence of deteriorating condition and risk exposures

- The geographic correlation of deteriorated structures and components with risk exposure locations is carried out

Line Reinvestment Overview

5. Communicate future needs and either initiate a project or collect additional information to improve certainty of scope

- Informs Powerlink's view of probable work within a 10 year outlook
- Project initiation process describes the need, identifies and evaluates risk, provides options and associated scopes of work

6. Develop project scope ensuring that only required work is included

- A project is initiated to address the need when more efficient and practical than a maintenance solution
- A number of options will be developed for comparison, with alternate scopes of work
- The inclusion of improved safety features in project scopes is an important matter

7. Evaluate options to determine the lowest long-run practical cost option

- Important to ensure that the option undertaken provides the most efficient outcome to customers in the long run
- Evaluation needs to consider practicality of implementation and all associated costs when determining the most economical option

Birds Eye View of Ross Chalumbin

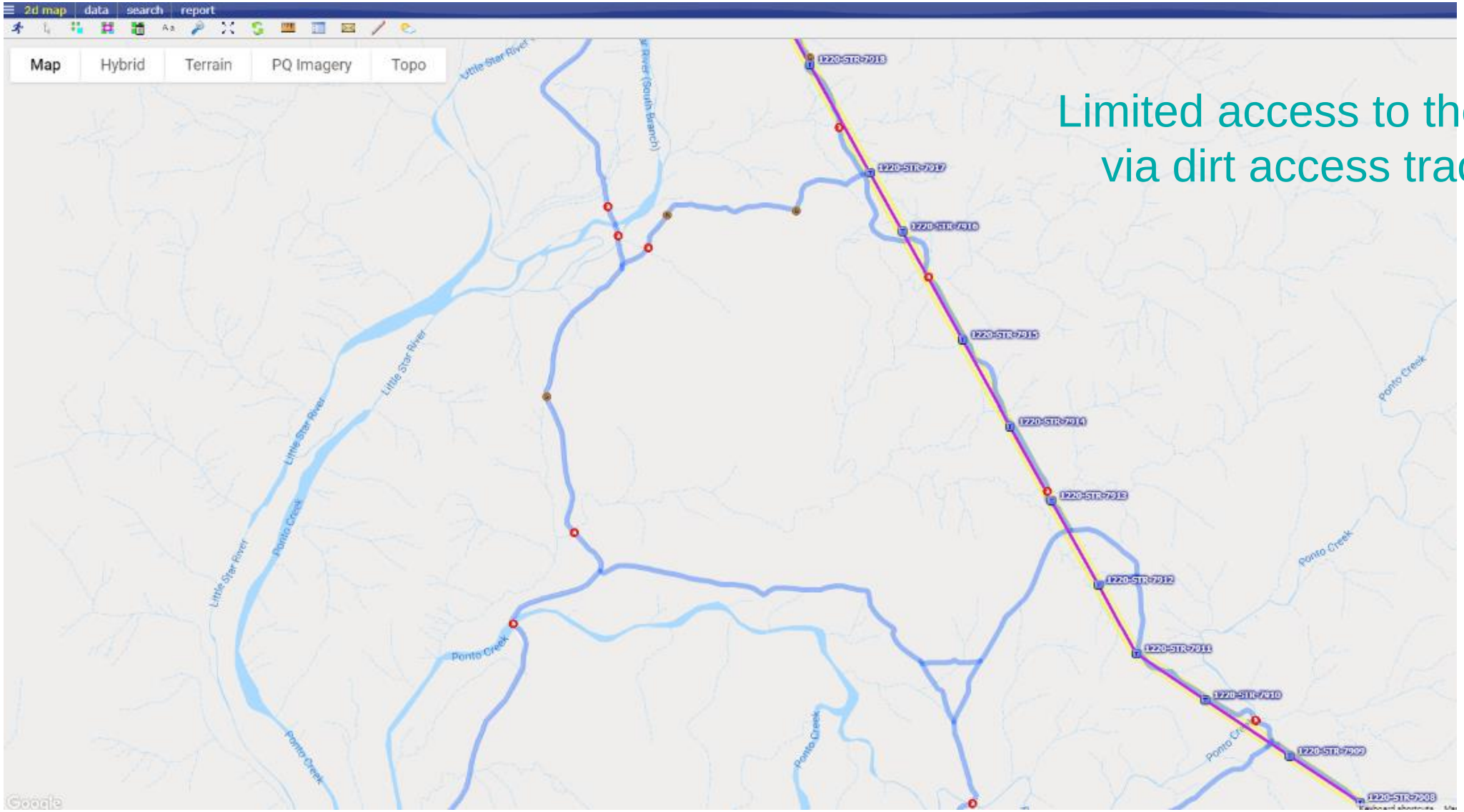
Condition of towers along the line

COLOUR CODE	INTERVENTION TYPE	No of TOWERS
	No Intervention Required	269
	Light Refit	109
	Heavy Refit	106
	Refit with Paint	42

Major Road Access

Limited access
via
Major Roads
Network

Powerlink Access Tracks



Limited access to the line via dirt access tracks

Powerlink Access Tracks

Access often hampered by severe erosion

Structural Condition Examples

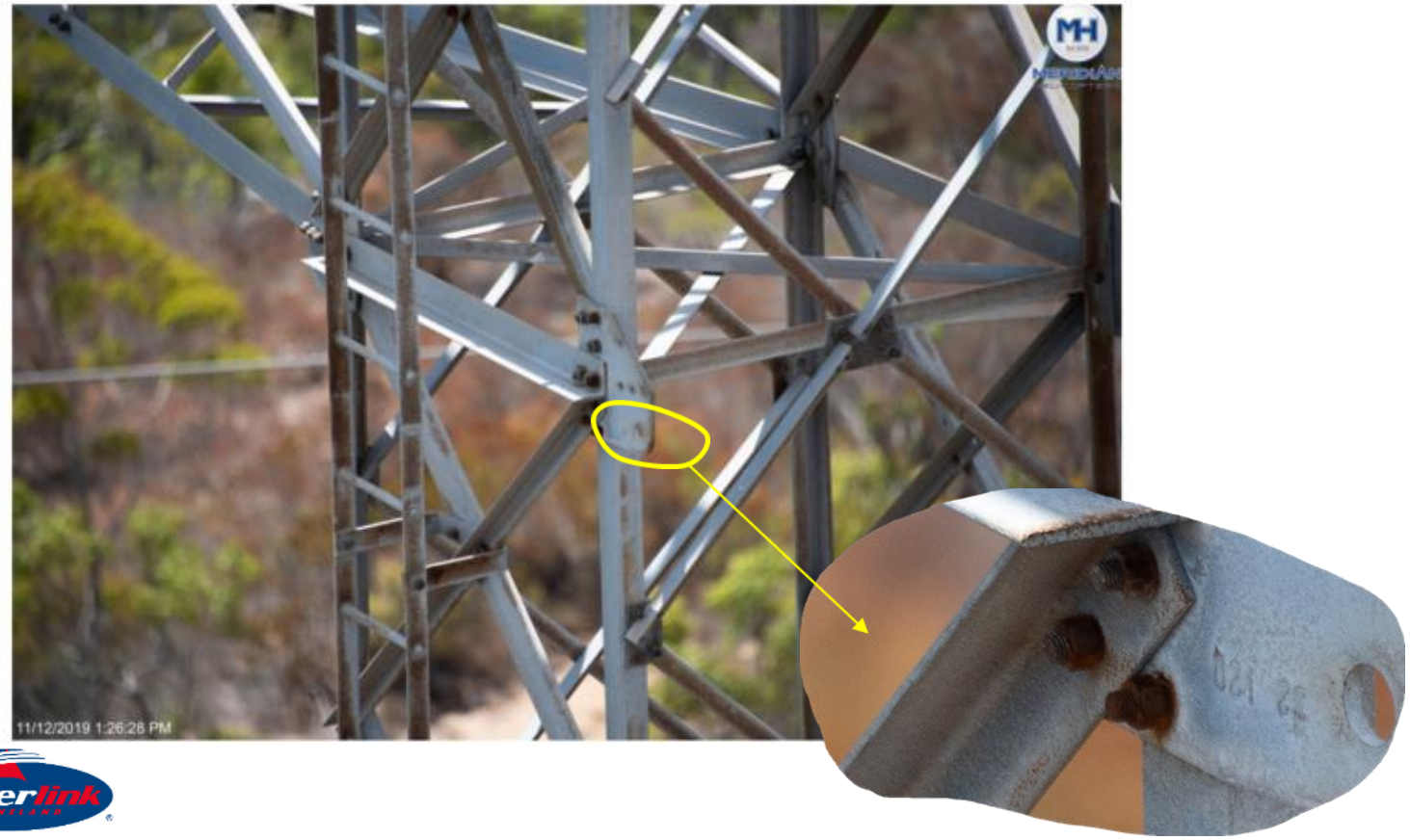
Tower in good condition not requiring any work to achieve projected HI 8.0 or less in 2035.

STR- 7813 – HI2.0 in 2020 and 4.4 in 2035

Structural Condition Examples

Structures with high levels of corrosion (requiring painting) HI 7.4 to 8.9 in 2020 and projected HI 14.6 to 19.6 in 2035

STR-7986 – HI8.6 in 2020



Structural Condition Examples

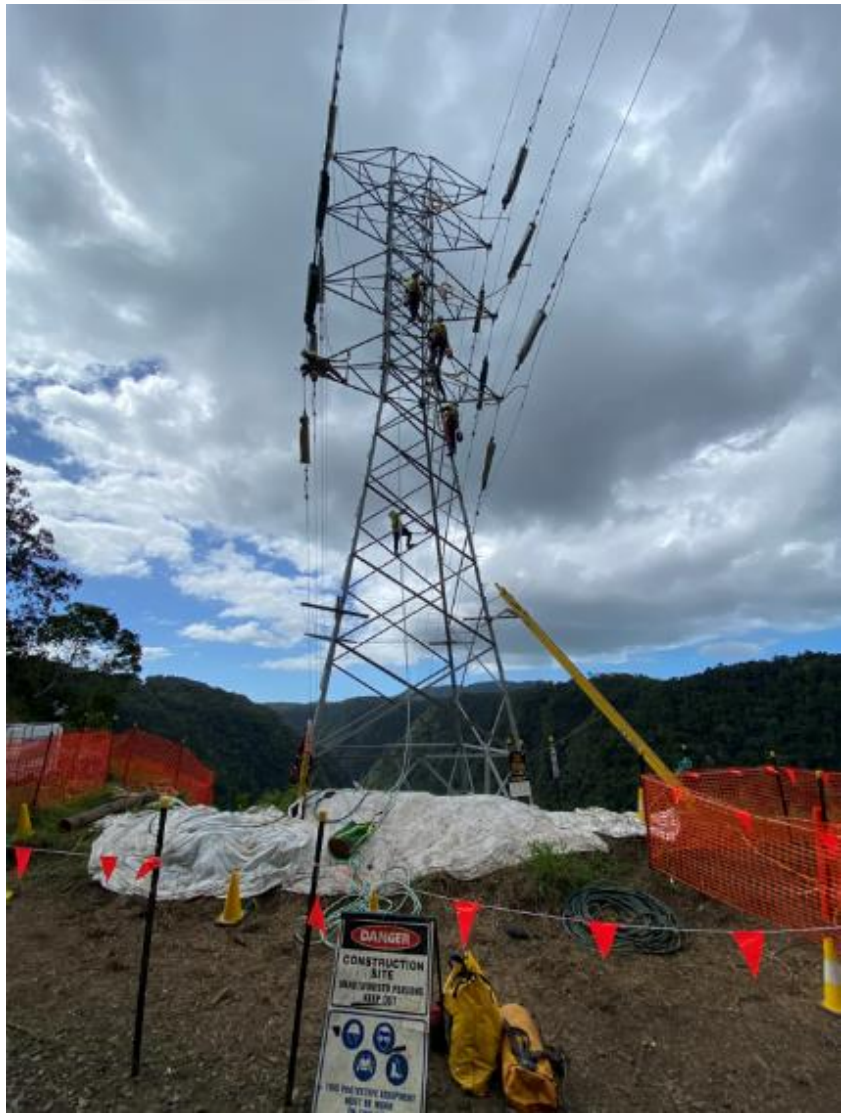
STR-8087 – HI8.0 in 2020

Long lines, like Ross Chalumbin, typically have towers displaying diverse corrosion levels.

Refit activity – Equipment and Preparation

Refit activity- abrasive blasting

Refit activity - painting



Risk vs Compliance approaches

- Example of the trade offs that must occur in asset reinvestment decisions.
- This tower fell due to corroded foundations – issue identified in most structures on this built section.
- Remediation work carried out on high risk towers, ones located in populated areas where fall posed serious safety risk.
- Purely risk based approach meant some towers not included because they were remotely located.
- Compliance based approach would have seen all structures in this built section remediated regardless of location as any structure fail classified as non-compliant
- Mitigating factors involved – all structures in this built section have since been remediated.

Site Visit Concept

- The purpose – to provide visual context around infrastructure and the challenges of access and mobilisation/ demobilisation.
- Mindful of time and cost associated with travel to remote locations.
- Rocklea Tower Farm is 30 mins from Powerlink HQ provides the scale of line refit activity.
- Site visit to Brisbane urban transmission tower with access challenges highlight the trade offs required in regional and remote projects.
- Both sites could be visited in the one day reducing the cost and time impacts of the group travelling to FNQ site.

Powerlink's Rocklea Tower Farm Training Facility

Updated Scope

Asset Reinvestment Review Scope (April 2022)

The asset reinvestment framework needs to consider:

- Social licence to operate over the asset life;
- How to better capture the benefits, including financial, of ‘bundling’ condition and compliance driven works within transmission line projects;
- How to better capture the challenges and costs, of access for Powerlink assets, both from a remote geographic and network outage perspective;
- The AER’s Industry Practice Application Note – Asset Replacement Planning (Jan 2019);
- How to incorporate best practice approaches used by other networks;
- Future-proofing. Given the rapidly changing environment, there is a need to ensure improvements to asset reinvestments are sustainable of the longer-term; and
- How to ensure predictable and repeatable outcomes.

Updated Scope Cont'd

The scope needs to focus on both the prudency and efficiency elements of reinvestment capital expenditure. While recommendations from the review will be applied across asset classes as appropriate, the review will focus on our transmission line reinvestments.

In particular the review will look at:

- Powerlink's risk-cost modelling;
- the extent to which an economic risk-based framework informs network asset reinvestment decisions;
- the role of deterministic criteria in an economic assessment framework; and
- the balance between capital and operating expenditure.

The review will not focus on use of the Repex Model (Replacement Expenditure Model), given it is not used to determine reinvestment requirements in the normal course of business.

Next Steps

- Powerlink will circulate a final scope
- Confirm details of site visit and timing
- Discuss key focus areas for next meeting

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