

Drilling to billing: building an open access FTTP network for the regions

Phil Britt – Founder & Director

We build stuff quickly without the management bloat

What we've learned in the first 16 months



Our mission – to bring the benefits of fibre broadband to more of regional Australia

32,000

FIXED WIRELESS PREMISES
IN GIPPSLAND

10,000

SHOULD HAVE HAD FIBRE,
ON HOUSING DENSITY

15,000

WE'RE BUILDING FIBRE
TO THESE

This is my legacy to Gippsland - where I grew up and still live today.

BY JUNE 2029

10,000

HOMES PASSED

6,000

CONNECTED

Sixteen months ago, we had nothing in the ground

15 April 2025 — day one of construction

0

PREMISES
PASSED

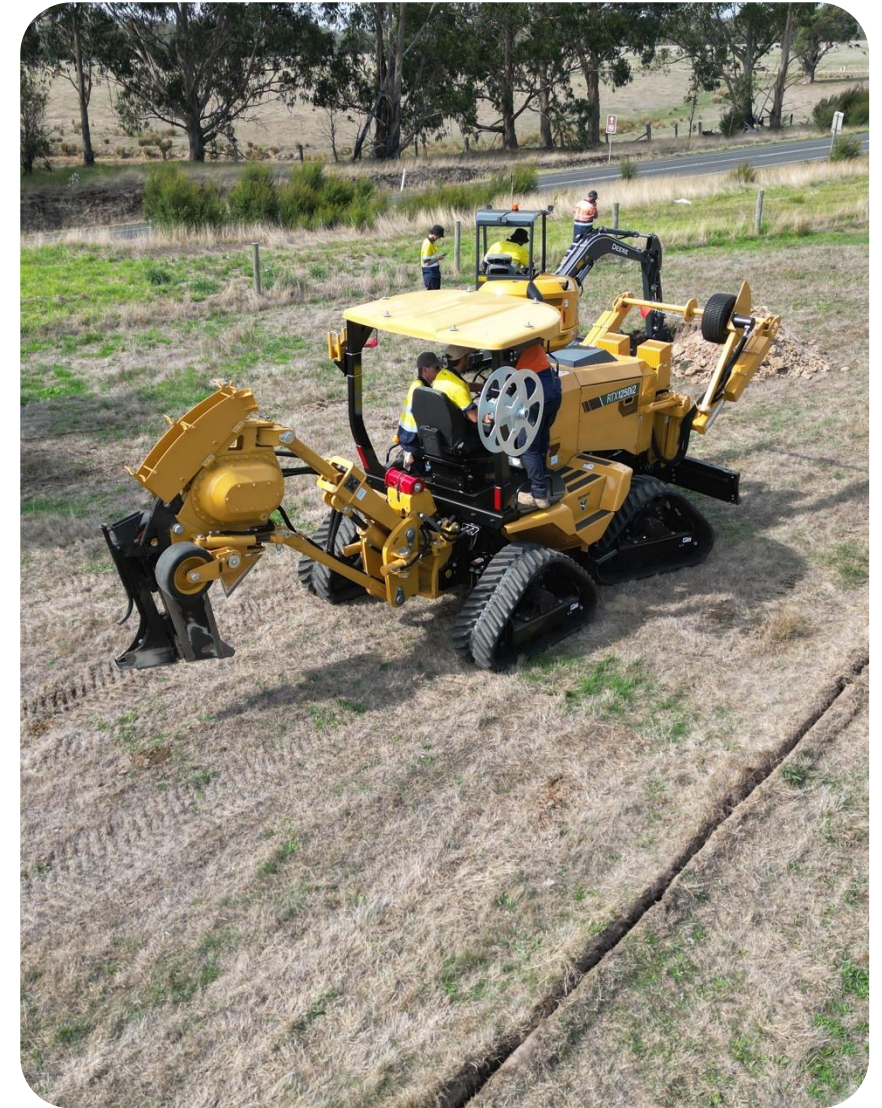
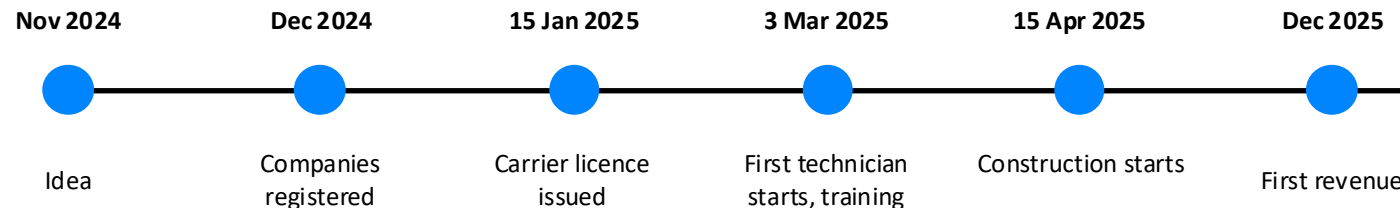
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PREMISES
CONNECTED

0

KILOMETRES
OF DUCT

How we got to a shovel in the ground:



BUILT SO FAR

430

PREMISES CONNECTED

130km

DUCT BUILT

150km

FIBRE IN THE GROUND

180+

JOINTS SPLICED

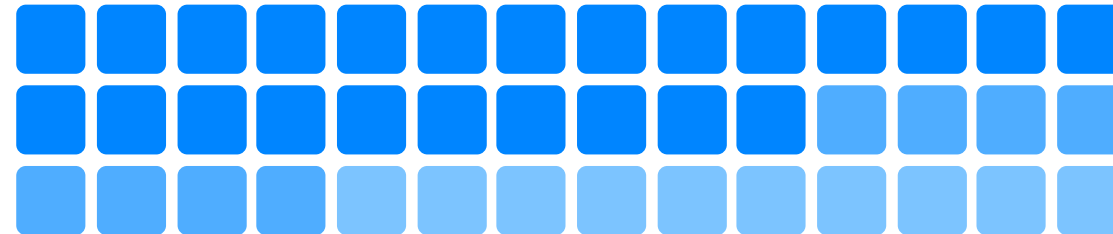
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NETWORK SITES

Today: 1,431 premises passed, 430 connected, built by 42 people

WHO BUILDS IT

42 people, 11 disciplines



each square = one person

24 BUILD CREW

- 13 Drillers & Trackers
- 8 Civils / Pit Installers
- 3 Asset Locators

8 INSTALL & SUPPORT

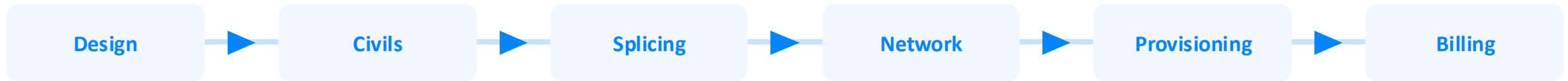
- 6 Home Installers
- 2 Helpdesk

10 ADMIN & DESIGN

- 3 Managers
- 2 Software Developers
- 2 Marketing & Comms
- 1 Network Engineer
- 1 Fibre Designer
- 1 Product Designer

Vertical integration isn't a new idea – the fun police just got in the way

OUR METHOD



Owning the whole construction chain is better — fewer handoffs, no margin stacking, no coordination tax.

Nobody does this, why? because **people are no longer comfortable with taking a bit of risk.**

So operators outsource construction, buy software, pay project managers, and integrate someone else's systems for years all so they don't have any risk. This significantly drives up the cost of building networks in my view.

What changed: I got sick of paying other people to build stuff that I knew we could build ourselves, significantly cheaper.

THIS TALK:

1 The network

2 The order flow

3 The construction

4 What went wrong

Build a superfast network in Australia and you are legally a wholesaler

PART 8, TELECOMMUNICATIONS ACT — SUPERFAST BROADBAND OBLIGATIONS

Build a new superfast fixed-line network and you are captured:

Layer 2 wholesale only

We cannot sell retail off our own network

Open access

Supply on equivalent terms to any RSP

Functional separation

Required above 2,000 residential / 12,000 with ACCC exemption

WHERE WE SIT

- ✓ Carrier licence issued 15 Jan 2025
- ✓ Operating Layer 2 wholesale only
- ✓ Below the threshold — exempt from functional separation
- ✓ **Separate systems already built**

Remaining crossover: marketing, and the software developers.

Splice Internet is our retail provider & customer of Rural Fibre Co, on the same terms as anyone else.

We overbuild Fixed Wireless, not fibre

WHAT WE BUILD

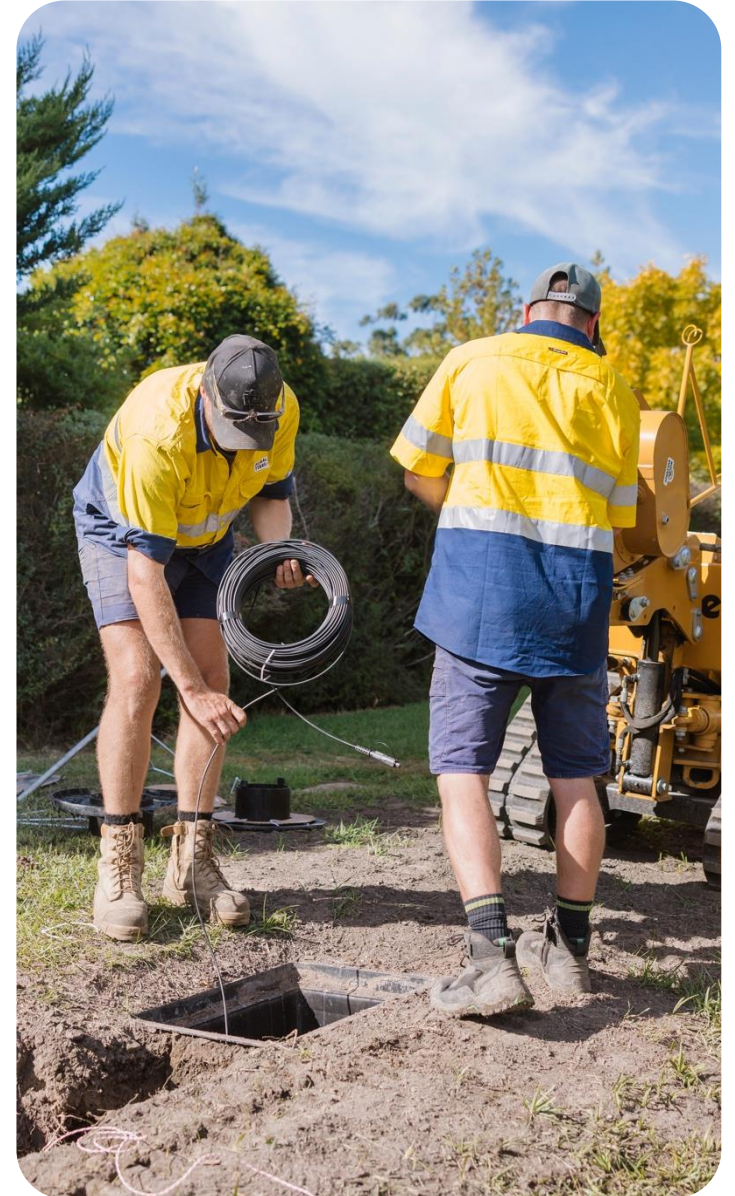
- ✓ **NBN fixed wireless overbuild**
Premises on radio that should be on glass
- ✓ **Greenfield estates**
New subdivisions & MDUs
- ✓ **Business fibre**
Direct fibre services

WHAT WE DON'T BUILD

- ✗ **Brownfield NBN fibre overbuild**
We won't build over an NBN FTTP footprint.

Why the boundary matters

The economics only work where the incumbent service is materially worse than fibre. Overbuilding good fibre with more fibre is how access network builders go broke.



91 metres of civils per premise passed for our current network, next phase will drop to 22 meters

Metro greenfield runs a fraction of that. Cost per premise is falling as the build moves into denser areas.

5 network sites



NEXTDC M1
Melbourne - Core



Equinix ME1
Melbourne - Core



Community Cabinets



Traralgon nbn® POI / TEBA

BUILD DENSITY

130 km

DUCT BUILT

1,431

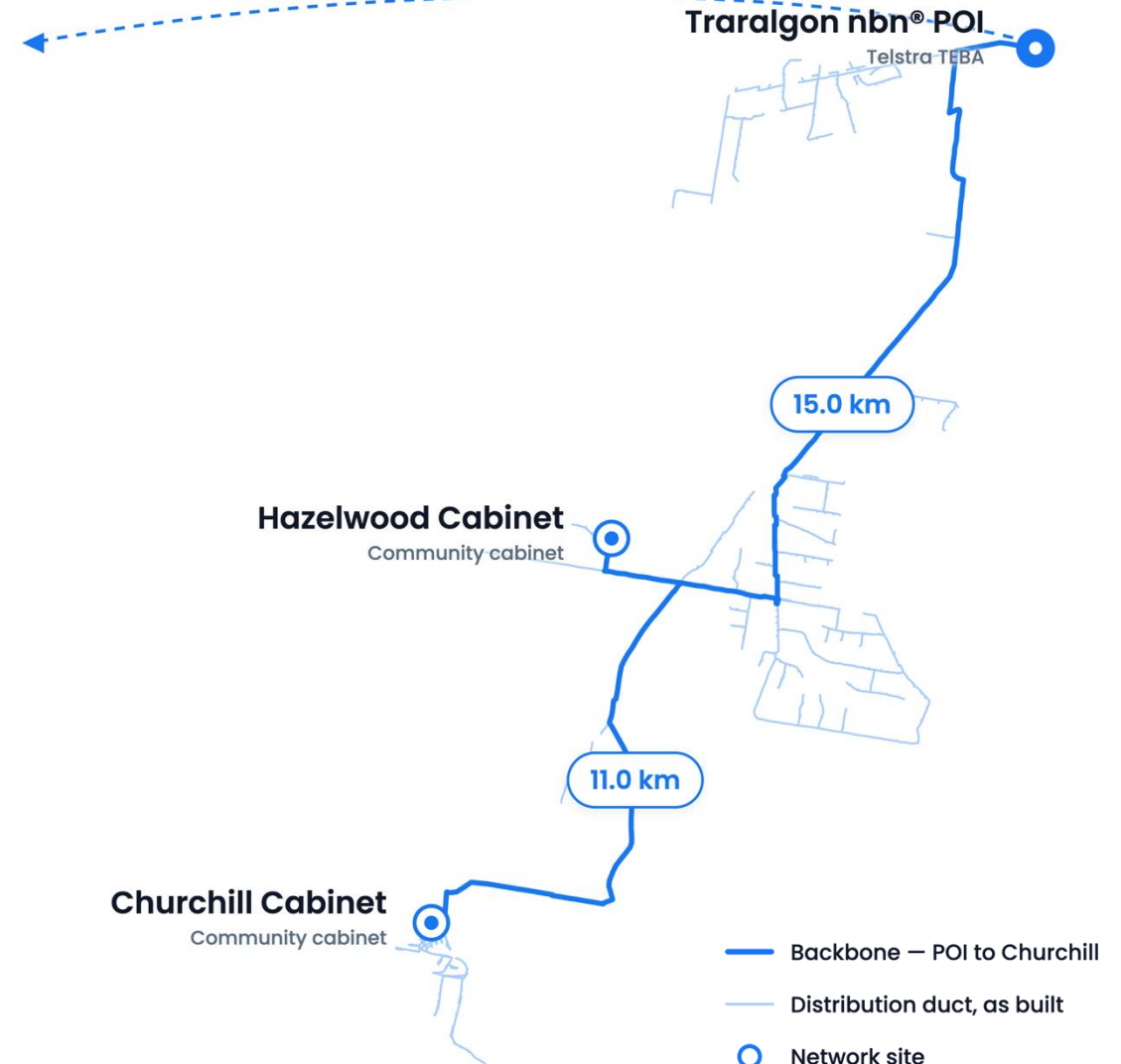
PREMISES PASSED

~91m

CIVIL PER PREMISE PASSED

~\$10,000

COST PER PREMISE PASSED



Community cabinets built to survive regional areas

WHAT WE BUILD

- ✓ **Battery backup**
Designed to last over 24 hours on battery with aircon running and generator inlets for quick connection
- ✓ **Airconditioned**
Support for regular and hi temp equipment
- ✓ **Fully monitored**
Door sensors, fire & environmental monitoring

Why this matters

Too many operators build small cabinets that die shortly after a power outage, we go the distance



Our toys

- 4 Horizontal directional drills Vermeer
- D24x40, D23x30 & 2 x D10x15
- 4 Non-destructive digging vacuum trucks
- 1 RTX1250 Chain Trencher / Mole Plow
- 5 Excavators
- 6 flat bed trucks
- 1 Splice van
- Many other fun things!



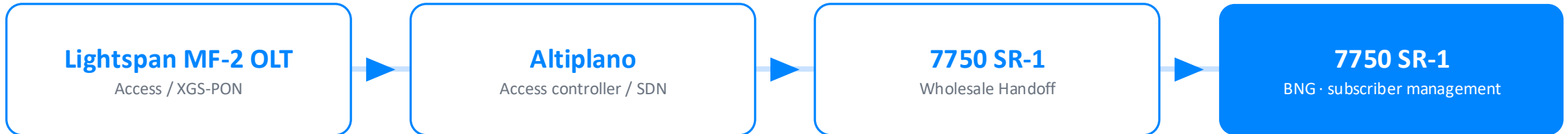
Our toys

For our rural home installs, we directly plow the lead-in cable into the ground



We picked Nokia end to end so the network stays saleable without me

The stack



1

One throat to choke.

With one network engineer and me part time, integration risk was very real, we didn't have time for a multi-vender strategy.

2

A clear FTTH leader.

You don't experiment on a production access network at this headcount.

3

It has to be saleable without me.

Common, mainstream technology is what makes the network a saleable asset. Many other networks are running this stack in Australia today.

Reason 3 is the important one. Most operators don't design for their own exit. We did, from day one – last thing I want is to drop off the perch and the network not be able to continue without me.

Every subscriber is an S-tag/C-tag pair from the ONT to the RSP handoff

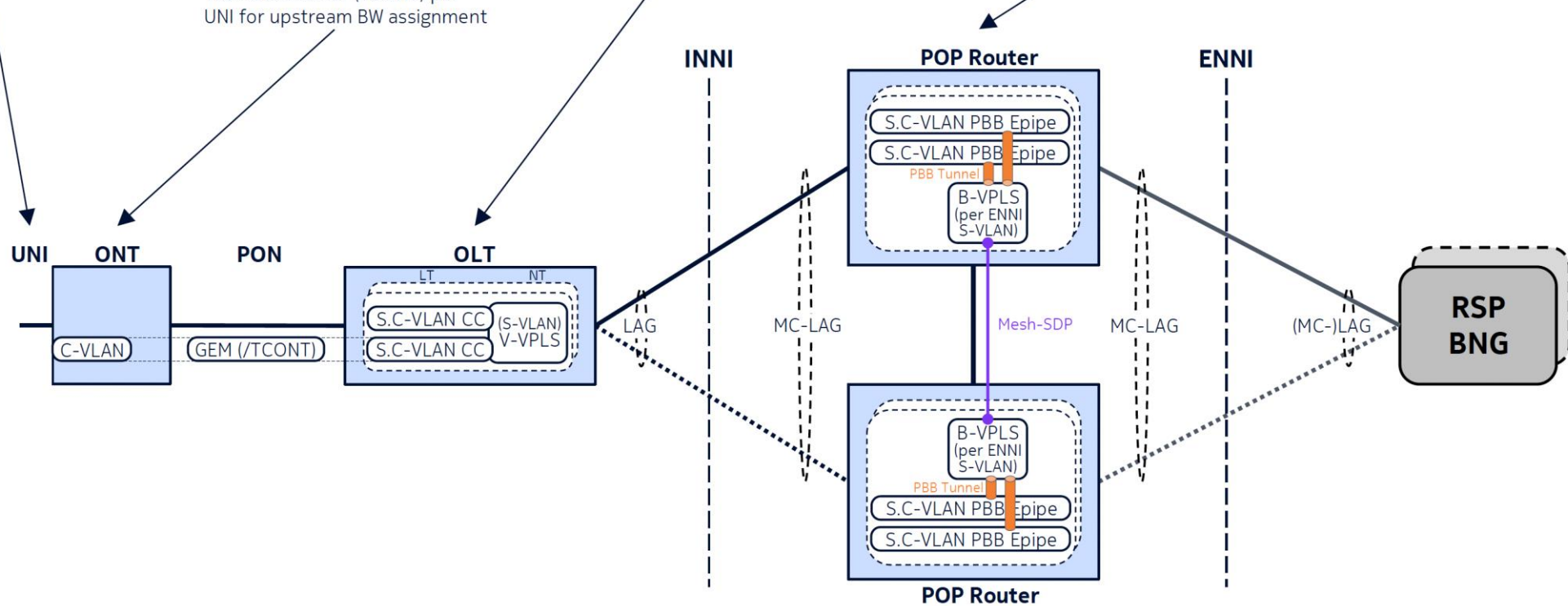
UNI addressing modes (tagging & prioritisation) options (TBC):

- (i) Untagged – Default (TC) mapped
- (ii) Untagged – DSCP mapped
- (iii) Priority Tagged
- (iv) Q-Tagged

- Untagged or P / Q Tag to AVC C-Tag mapping
- AVC Traffic Class (TC) to (GPON Encapsulation Method) GEM port mapping
- Traffic Container (TCONT) per UNI for upstream BW assignment

- Per AVC S.C-VLAN Cross Connect (CC) in LT, mapped to:
- RSP S-VLAN Virtual (V)-VPLS in NT

- Per AVC (local) PBB Epipe, mapped to:
- Per ENNI S-VLAN (“CVC”) B-VPLS for node redundancy, coupled w/ INNI & ENNI MC-LAG



The wholesale product is shaped like the one RSPs already know today

Layer 2 Ethernet bitstream

NNI options

10G and 100G

Encapsulation

QinQ — S-tag / C-tag

Handoff

Traralgon TEBA / NBN POI
option for M1 & ME1

Service identifier

AVC-style per-service ID

Service authentication

AVC ID in DHCP Option 82 payload

Why this shape?

- Every RSP in Australia has already built systems to consume an S-tag/C-tag Layer 2 bitstream product, because that's what NBN offers.
- Inventing a better product would mean asking every RSP to build a new integration — to buy from a network with only 1,431 premises on it.
- API layers follow the same logic as NBN enabling easier integration.
- IPoE only because we shouldn't be using PPPoE in 2026!

The KISS principle

No human touches an order until the technician knocks on the door

BEFORE THE VISIT: NO HUMAN

- 1 Address pre-qualified as serviceable
- 2 Customer signs up online, picks an install date
- 3 7750 auto-configured — C-tag allocated, epipe SAP created
- 4 RADIUS & DHCP provisioned for new subscriber (for our retailer Splice Internet), skipped for wholesale customers
- 5 Job created in workforce system for the chosen date



FIRST HUMAN

Technician arrives
installs lead-in + ONT

- 6 ONT serial entered

AFTER THE VISIT: NO HUMAN

- 7 Serial flows to the wholesale API
- 8 Network sees the ONT come online
- 9 Job auto-closed
- 10 Retailer notified
- 11 Billing completes

Eleven steps. One human.

The technician's day: open the app, jobs are there, drive, install, enter a serial number. No paperwork, no provisioning ticket, no back-office handoff, nobody to ring – it just works!

The civils design doesn't become work orders – the design *is* the work orders

Our fibre designer sees every premise we can target, and designs from there.

Everything downstream generates itself:

DESIGN

every targetable premise

There is no project manager converting a design into a schedule. No one re-keys a plan into a work management system. No crew stands idle waiting on materials nobody ordered.

And yes — lunch. If the system is down, nobody eats.

Construction tasks, in dependency order

Lodge LAAN notices → locate assets → install bore duct → install pit → haul cable → splice → test

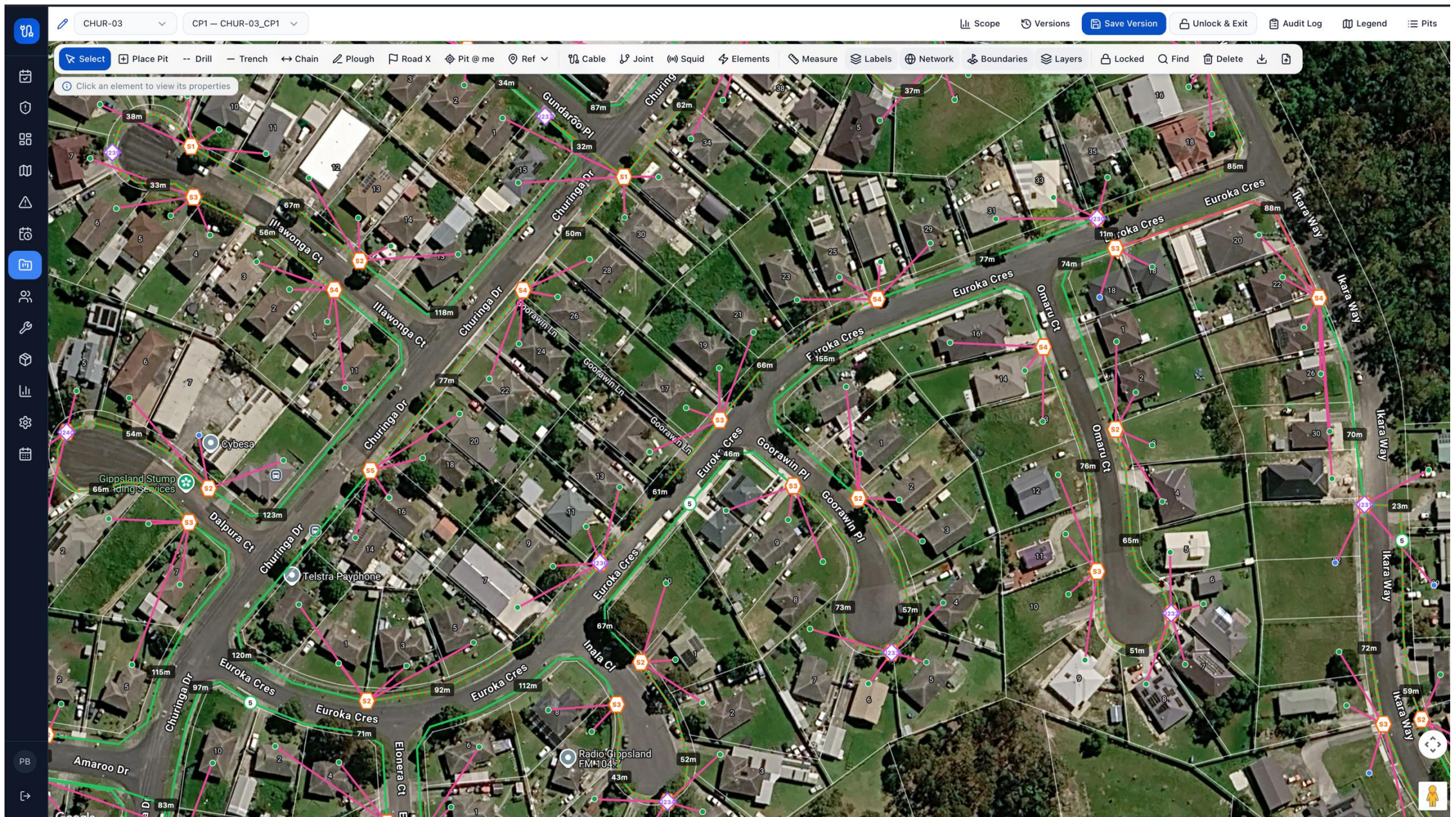
Inventory requirements

Purchase orders

Stock management

Safety and compliance records

Crew lunch orders



PB

CP5 active

TGON-04_CP5 • Nick Miller

25 Locate 26 Drills 21 Pits 16 Drills 10 Crossings

Locate

Duct

Pits

Trimble

16/25

16/26

15/26

15/25

Import Tasks

Add Task

Generate Trimble Tasks

Locate 9/25 (1,458m)

Drills 10/26 (1,430m)

Pits 11/26

Trimble 10/25

Show Completed (16)

1 ready

9 blocked

	TM	3P	TASK	DIST	ACTUAL	DEPS	EQUIPMENT	STATUS	ACTIONS
			P001227 → P001228 (36m)	36m	79m	Ready	Select...	Pending	
			NDD P002067 → P002068 (33m)	33m	-	Blocked	Select...	Pending	
			P002068 → P002069 (16m) Road X	16m	-	Blocked	Select...	Pending	
			P002068 → P002070 (64m)	64m	-	Blocked	Select...	Pending	
			P002070 → P002071 (17m) Road X	17m	-	Blocked	Select...	Pending	
			P002070 → P002072 (71m)	71m	-	Blocked	Select...	Pending	
			P002072 → P002073 (17m) Road X	17m	-	Blocked	Select...	Pending	
			P002072 → P002074 (15m) Road X	15m	-	Blocked	Select...	Pending	
			P002072 → P002075 (104m)	104m	-	Blocked	Select...	Pending	
			P002075 → P002076 (16m) Road X	16m	-	Blocked	Select...	Pending	

Rural Fibre Co

My Schedule

+ < Mon 10 Aug 2026 >

378 Connected

73 Ordered

451 Total

1,431 Passed

31.5% Take-up

All teams - Mon 10 Aug

Duct

0 m / 821 m

0%

Hauling

0/3

Splicing

0/2

Pits

0/10

Locates

0/4

General

0/3

Home Installs

0/3

Construction

0 / 29

Civils 1

Cameron · Jamie · Zane · Michael · Jack · Kaan

Unknown

Pit Installation

Scheduled

Install P5 P001174 at L4

TGON-07 · CP1

Pit Installation

Scheduled

Install P5 P001211 at L16

TGON-07 · CP2

Pit Installation

Scheduled

Install P5 P001212 at L17

TGON-07 · CP2

Pit Installation

Scheduled

Install P8 P001213 at L18

TGON-07 · CP2

General

Scheduled

Easterly Dr Breakout NDD Required

Unknown Project

Pit Installation

Scheduled

Install P8 P001209 at L14

TGON-07 · CP2

Pit Installation

Scheduled

Install P5 P001177 at L7

TGON-07 · CP1

Pit Installation

Scheduled

Install P5 P001214 at L19

TGON-07 · CP2

Pit Installation

Scheduled

Install P5 P001208 at L13

TGON-07 · CP2

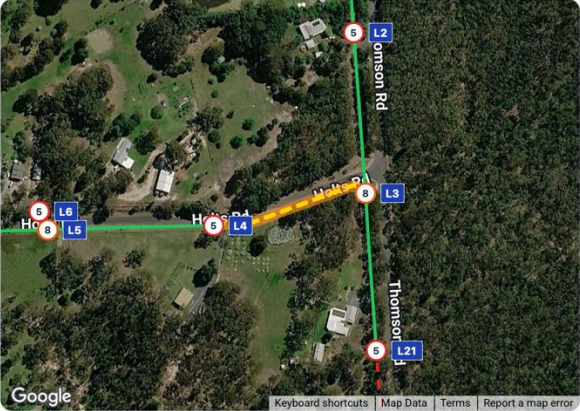
Crew day

P000701 → P001712

Drill Shot · 139m

Pending In Progress Done Rebook

Bill · Jake · Caleb



Notes

No notes yet

Add a note...

Materials Used

+ Add

P63 Duct Roll 140m

140m used · 140m taken

P63 Duct Roll 140m

2m used · 20m taken · 18m returned

Photos & Videos

No photos or videos yet

Add Photos Add Video

STATUS HISTORY

Completed 06/08/2026 3:27 PM

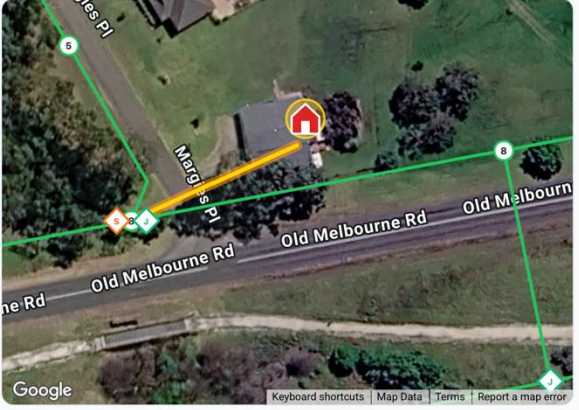
Info Details My Schedule

Drill task

Rural Fibre Co

13:00 – 17:00 standard-install 500/500

Booked En Route In Progress Done Failed Rebook



Lead-in path required

Tap each turn from pit to house. Required to complete.

Draw path

RFC001600

Squid J000168-S1 · Port 1

+614

Drill: Fri 7 Aug

ONT Serial Number

Select ONT type

e.g. ALCL0A1B2C3D

Submit Serial

Add notes...

Home install

A network engineer built that in eight weeks with Claude Code

The workforce management system

8 weeks

Just me

Claude Code

0

SOFTWARE DEVELOPERS INVOLVED

Why not off the shelf?

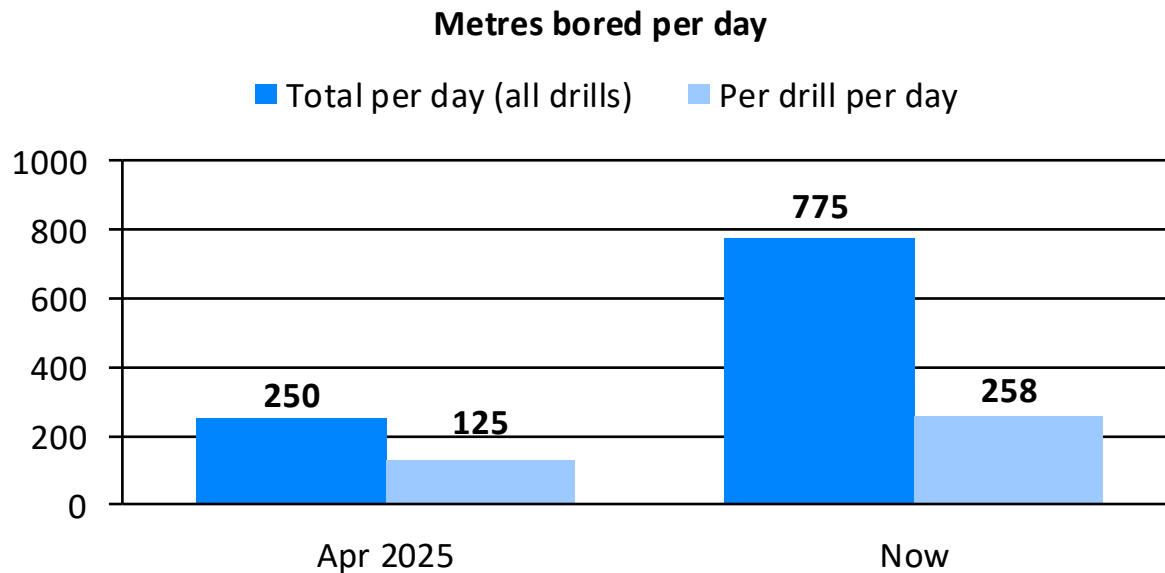
- Couldn't afford the SaaS tax
- Nothing spans fibre design → construction → wholesale provisioning
- Every option meant months to years of integration for a system that still wouldn't do the job as we want to do it

The barrier to building custom software is gone.

If you can articulate the problem, AI software development lets you do things quickly - no PMO - no rooms of developers - no “it can't be done” - It's an entrepreneur's wet dream!

Systems showed everyone what we were achieving – they got faster

Drill productivity



Best day: 905 m across 3 drills — 302 m per drill

Causes: crews got more experienced. Productivity visibility. We added a drill. Ground got better as we moved into denser areas.

WHAT THE SOFTWARE DID

+10

CONSTRUCTION STAFF
ADDED, LAST 3 MONTHS

0

PROJECT MANAGERS

none

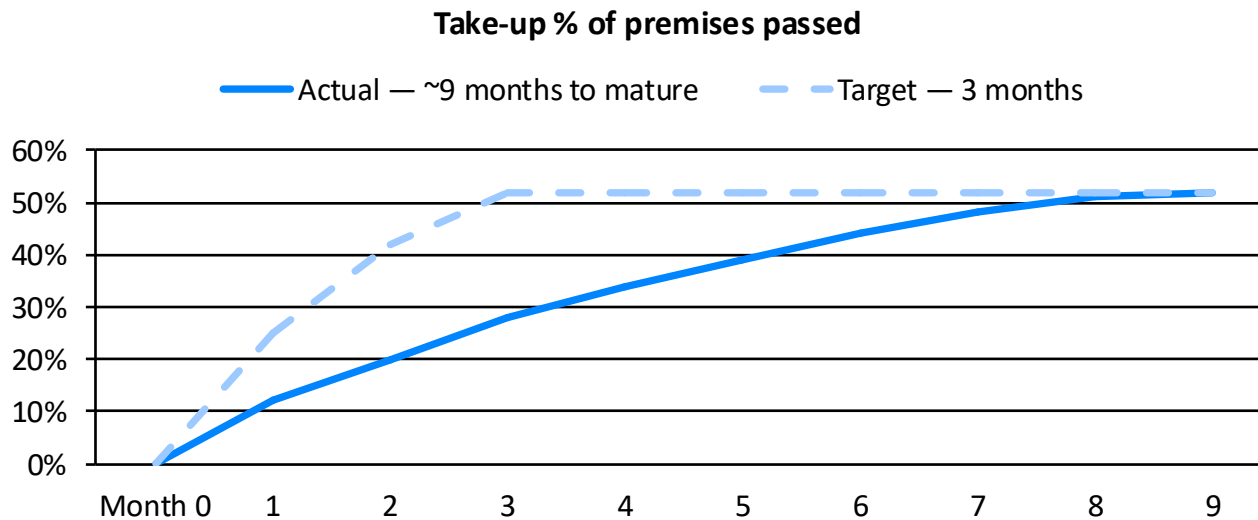
COORDINATION LAYER
ADDED

The software did not make the drill go faster, it showed the team how to play a better game

By putting all of the information into the hands of the construction teams, they wanted to play harder. They could bring tasks forward without asking and achieve more each day rather than just knocking off early – we turned construction into a high performance game.

52% take up – but a hard slog to get people to move – we want 60% plus!

Take-up after a premise goes ready-for-service



First few weeks

10–15%

At maturity

52%

Time to mature

~9 months

Target

3 months

52% is against nbn® fixed wireless. Roughly one in two premises leaves the incumbent once fibre is available.

In Europe where there are two or more fibre operators, they typically see around 20-30% up take for the largest operator when there is not a forced migration like we've seen in Australia

Hard lessons – we took down about 3,000 premises because an asset wasn't located properly

The duct strike, Traralgon

~3,000

HOMES AND BUSINESSES DOWN

- Third-party asset locator failed to mark an NBN duct
- My crew didn't double check the markings
- We drilled straight through the middle of it

Four water pipe strikes

- Some: assets not marked on BYDA
- Some: our own crews not using the tracking equipment correctly

Building the process into the software has helped

Tasks are now blocked if all the required checks have not been completed and asset locating notes and flags are presented on all tasks.

What's next?

**90 MILE
LOOP**

GIPPSLAND • VICTORIA

90 MILE LOOP

Open-access fibre backbone,
with distribution build into
every town on the route.

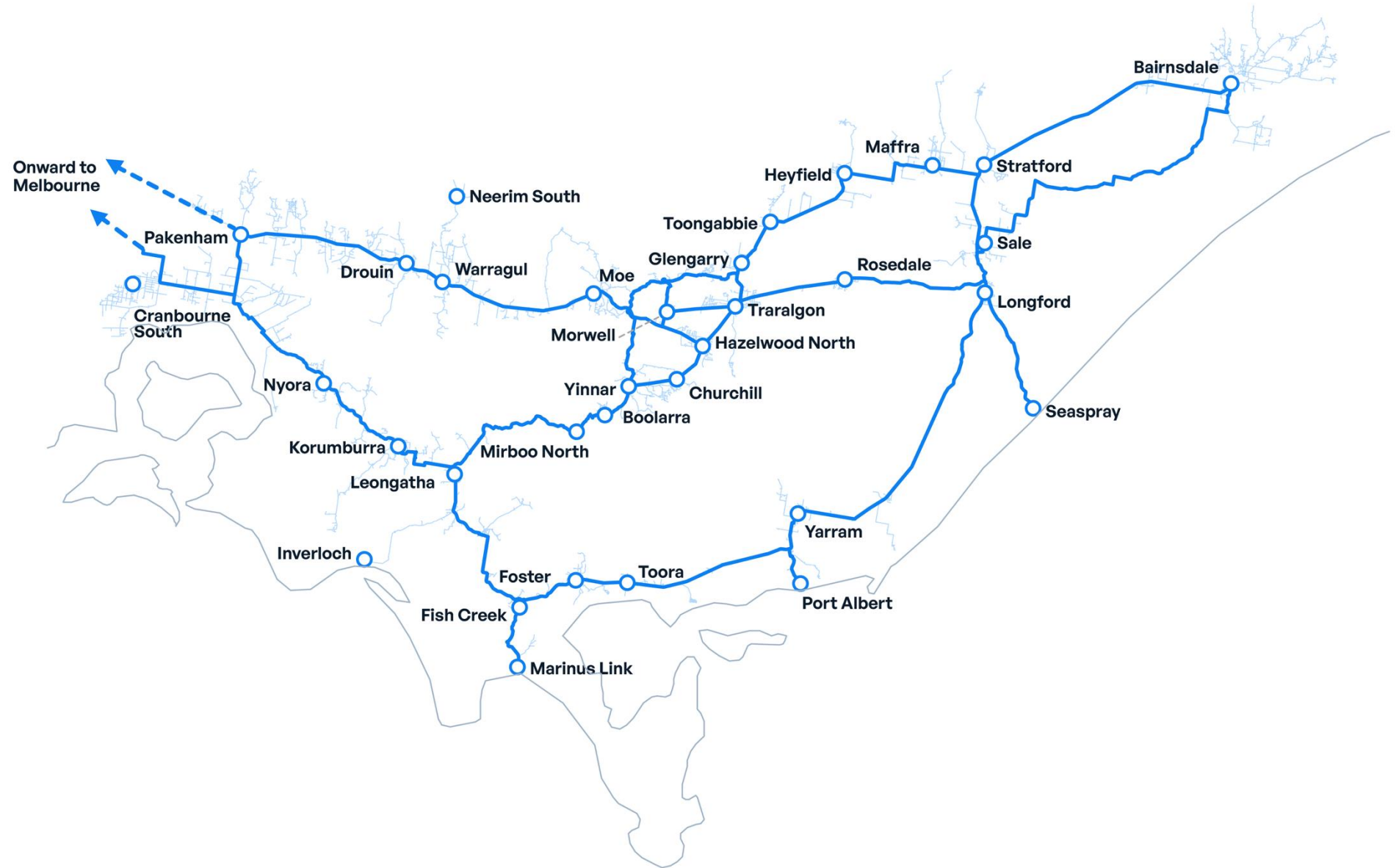
2,823km
of fibre designed

728km
of that is core route

18,820
premises in scope

209
towns served

- Core route
- Distribution build
- Key town



Five things I'd tell myself in 2023

- 1 Start dense.** We built the most rural community first. Revenue has been slower to come vs build cost, making up for that now.
- 2 But build somewhere you're allowed to be bad at it.** Super-rural meant almost no other asset owners to hit while we learned. And those communities needed it most.
- 3 Spend the time letting the team tell you how it should be done.** I've never run a construction business, but my team taught me quickly.
- 4 The design system is the company.** Everything downstream is generated from it. Put the effort there and the rest follows.
- 5 Build your system into software.** The calculation changed. Most people haven't noticed yet.

Owning every layer was the only way we could make the economics work

Vertical integration, own the construction team, own the network, serve the end customer & retailer

No layers of project management

No margin stacking between contractors

No coordination tax

No integration project measured in years

Today

1,431

PREMISES PASSED

430

CONNECTED

130 km

OF DUCT

42

PEOPLE

16

MONTHS

By June 2029

10,000+

PREMISES PASSED

6,000+

CONNECTED

800 km+

OF DUCT

55

PEOPLE (hopefully!)

50

MONTHS

It's not easy, but this will be a legacy I'm proud to leave

Thank you

Questions?

phil@ruralfibre.co

