



One Aspect of Asset Management at KiwiRail

18 / April / 2024

KiwiRail 

Introductions



Introducing Myself

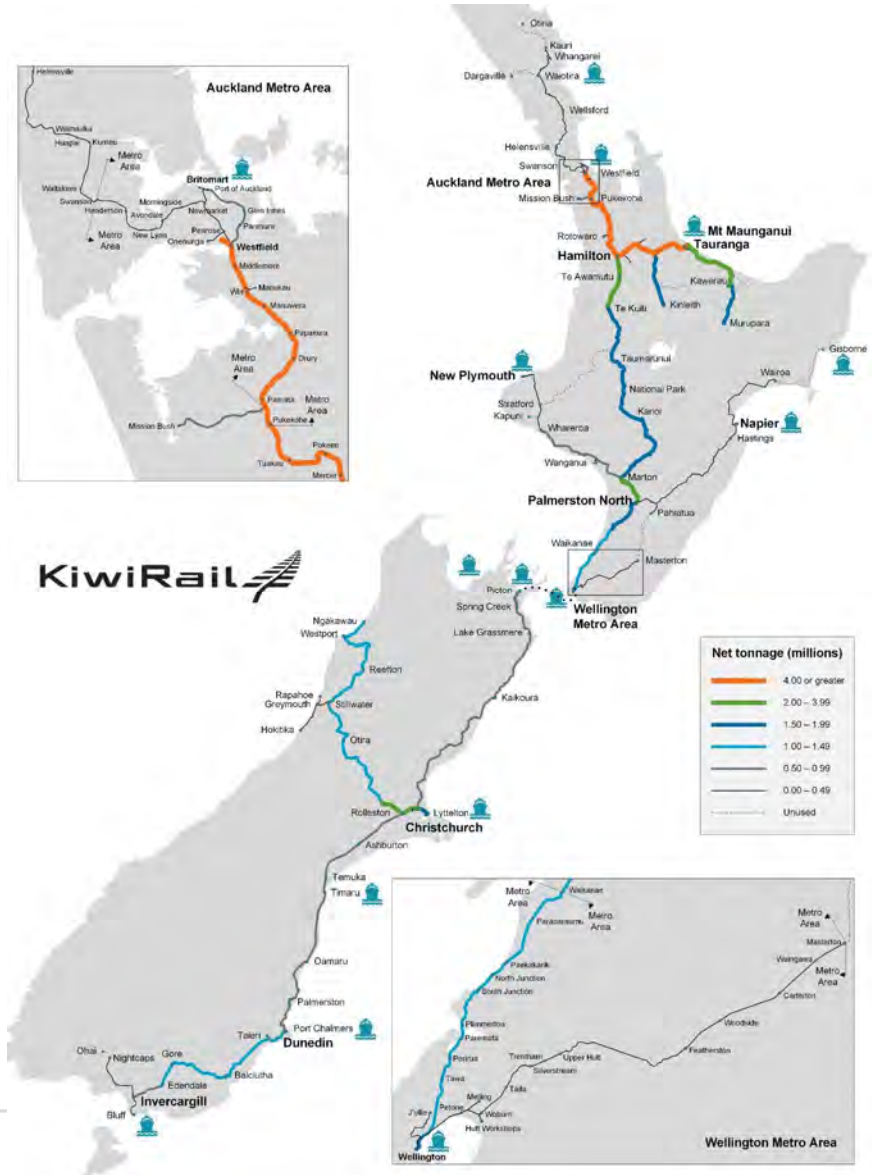
- NZDE from Otago Polytech 2019-2020
- 2.5 Years at Beca in Dunedin 2021-2023
- BEngTech in Infrastructure AM 2021-Present
- KiwiRail 2023-Present





Introducing KiwiRail

- 4000 Km of Track
- 1500 Level Crossing
- 1300 Bridges
- 100 Tunnels



My Role



My Responsibility

- Formation





My Responsibility

- Formation
- Drainage





My Responsibility

- Formation
- Drainage
- Ballast





My Responsibility

- Formation
- Drainage
- Ballast
- Sleepers





My Responsibility

- **Formation**
- **Drainage**
- **Ballast**
- **Sleepers**
- **Rail**





My Responsibility

- Formation
- Drainage
- Ballast
- Sleepers
- Rail
- Fastenings





My Responsibility

- Formation
- Drainage
- Ballast
- Sleepers
- Rail
- Fastenings
- Joints





My Responsibility

- Formation
- Drainage
- Ballast
- Sleepers
- Rail
- Fastenings
- Joints
- Level Crossings





My Responsibility

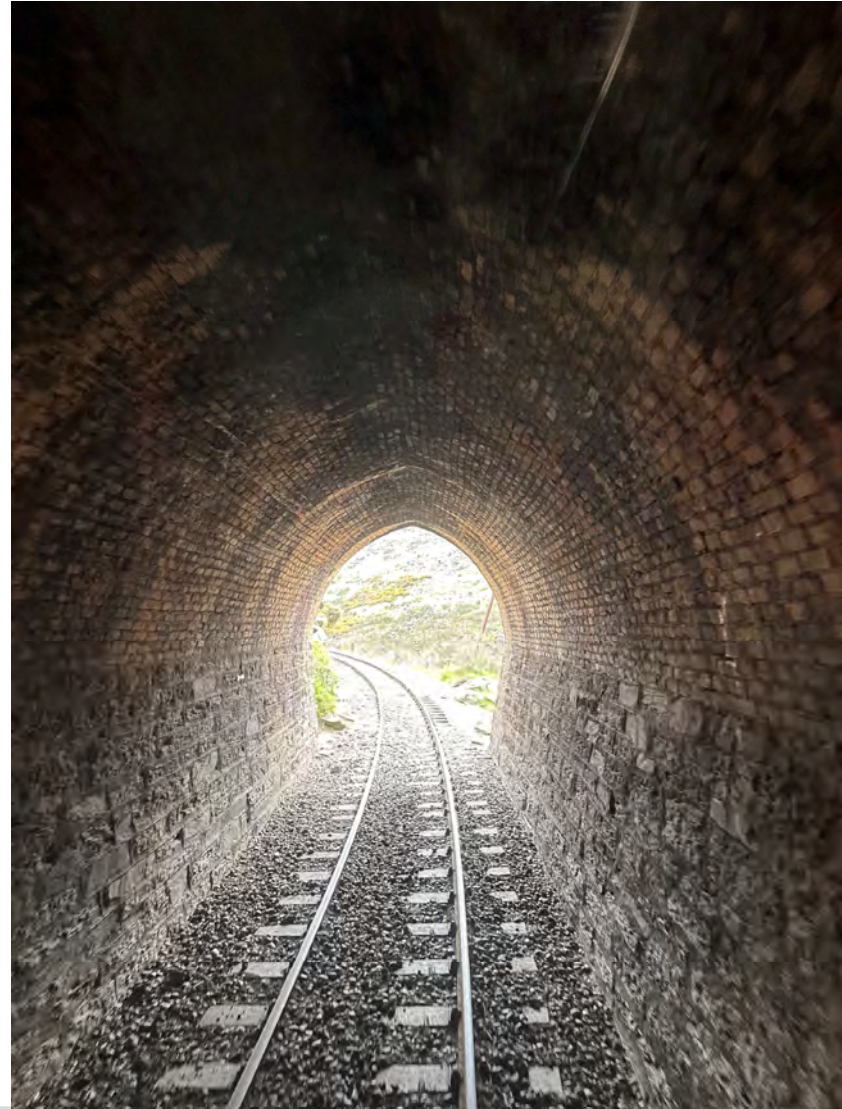
- Formation
- Drainage
- Ballast
- Sleepers
- Rail
- Fastenings
- Joints
- Level Crossings
- Bridges and Culverts





My Responsibility

- **Formation**
- **Drainage**
- **Ballast**
- **Sleepers**
- **Rail**
- **Fastenings**
- **Joints**
- **Level Crossings**
- **Bridges and Culverts**
- **Tunnels**





My Responsibility

- **Formation**
- **Drainage**
- **Ballast**
- **Sleepers**
- **Rail**
- **Fastenings**
- **Joints**
- **Level Crossings**
- **Bridges and Culverts**
- **Tunnels**
- **Turnouts**





My Responsibility

- **Formation**
- **Drainage**
- **Ballast**
- **Sleepers**
- **Rail**
- **Fastenings**
- **Joints**
- **Level Crossings**
- **Bridges and Culverts**
- **Tunnels**
- **Turnouts**
- **Vegetation**





Maintenance

Major Renewals

- Resleepers
- Rerails
- Formation upgrades
- Bridge replacements
- Turnout replacement
- Tunnels work

Minor Renewals

- Mudspot repair
- Short resleepers
- Fastening replacement
- Bridge repair
- Turnout refurbishment
- Resealing public level crossings

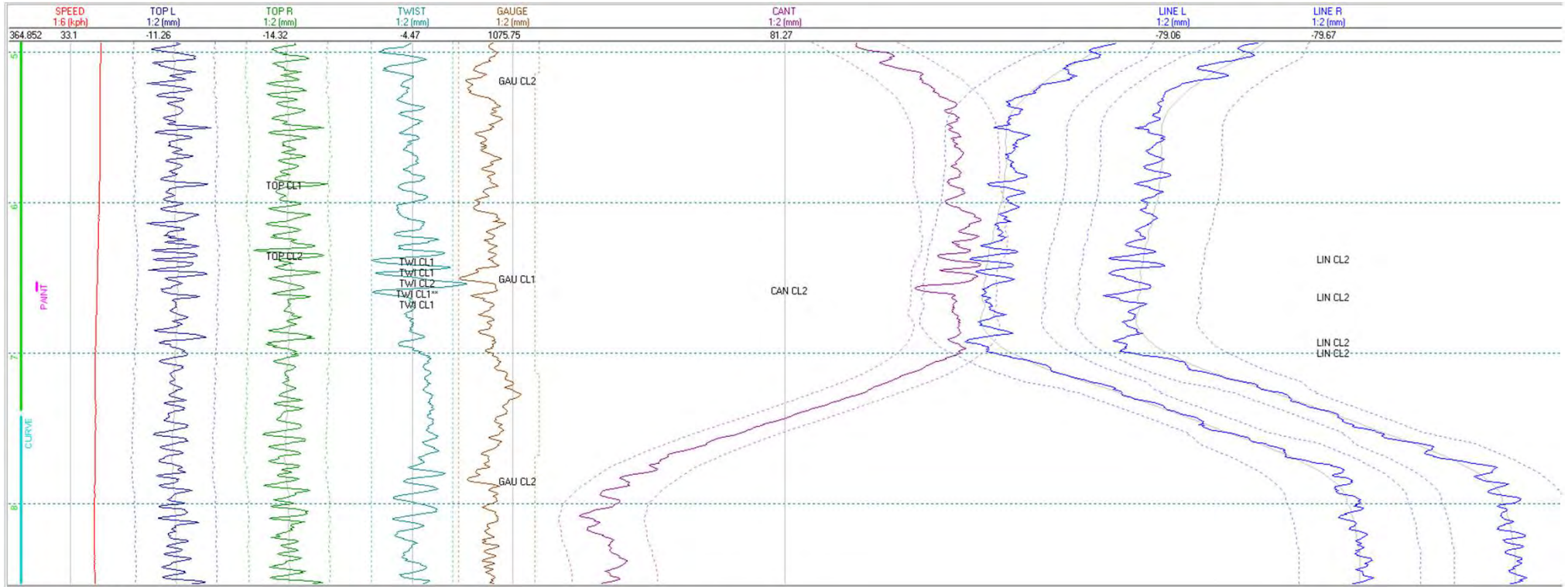


EM80





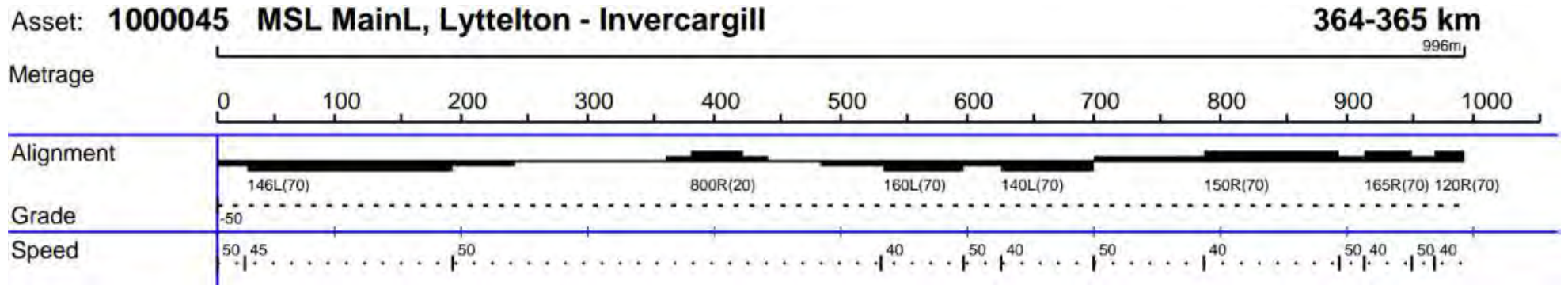
EM80 Trace



Exceedents & Comments					
Level CL2 GAUGE	1088.94,	Location: 364.518 [364.517 - 364.524],	GPS: S45°47.9525'E170°37.1837',	Speed: 40,	TClass: 1
Level CL1 TOP R	-19.43,	Location: 364.587 [364.587 - 364.587],	GPS: S45°47.9829'E170°37.2138',	Speed: 39,	TClass: 1
Level CL2 TOP R	-15.94,	Location: 364.634 [364.634 - 364.635],	GPS: S45°47.9970'E170°37.2438',	Speed: 37,	TClass: 1
Level CL2 LINE R	16.20,	Location: 364.636 [364.636 - 364.637],	GPS: S45°47.9974'E170°37.2453',	Speed: 37,	TClass: 1
Level CL1 TWIST	17.61,	Location: 364.637 [364.637 - 364.639],	GPS: S45°47.9979'E170°37.2467',	Speed: 36,	TClass: 1
Level CL1 TWIST	-17.73,	Location: 364.642 [364.642 - 364.643],	GPS: S45°47.9987'E170°37.2497',	Speed: 36,	TClass: 1
Level CL2 TWIST	16.88,	Location: 364.646 [364.646 - 364.647],	GPS: S45°47.9995'E170°37.2526',	Speed: 36,	TClass: 1
Level CL1 GAUGE	1091.96,	Location: 364.649 [364.648 - 364.651],	GPS: S45°47.9999'E170°37.2542',	Speed: 36,	TClass: 1
Level CL1** TWIST	-24.45,	Location: 364.653 [364.652 - 364.655],	GPS: S45°48.0008'E170°37.2578',	Speed: 36,	TClass: 1
Level CL2 CANT	17.56,	Location: 364.657 [364.655 - 364.657],	GPS: S45°48.0014'E170°37.2608',	Speed: 35,	TClass: 1

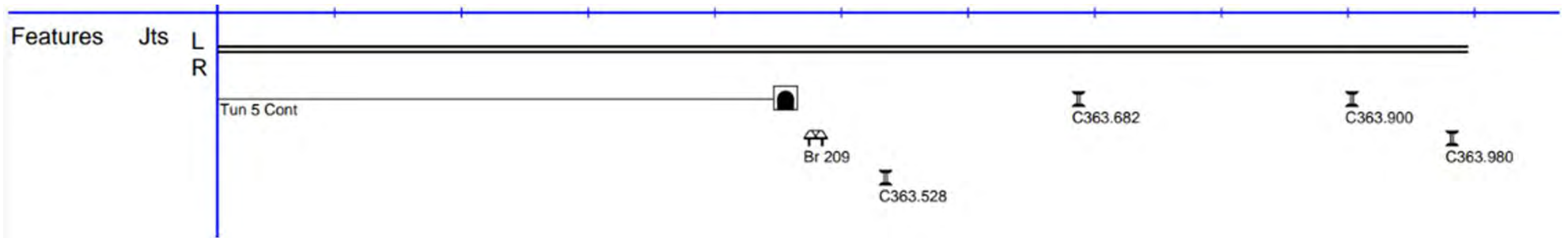


Corridor Log – Alignment, Grade, and Speed



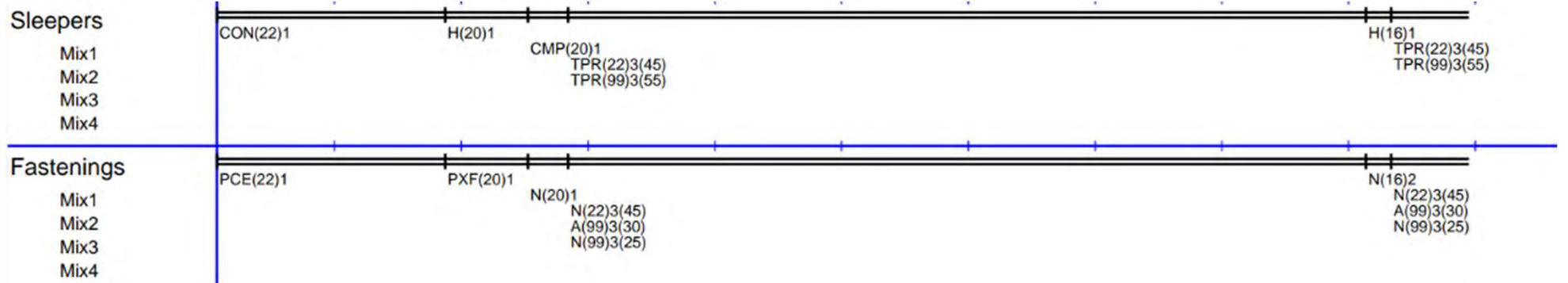


Corridor Log - Features



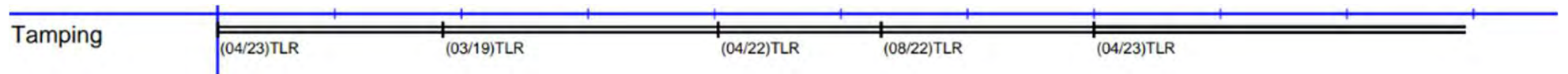


Corridor Log – Sleepers and Fastenings





Corridor Log - Tamping





Corridor Log – Renewals Work in the Work Bank

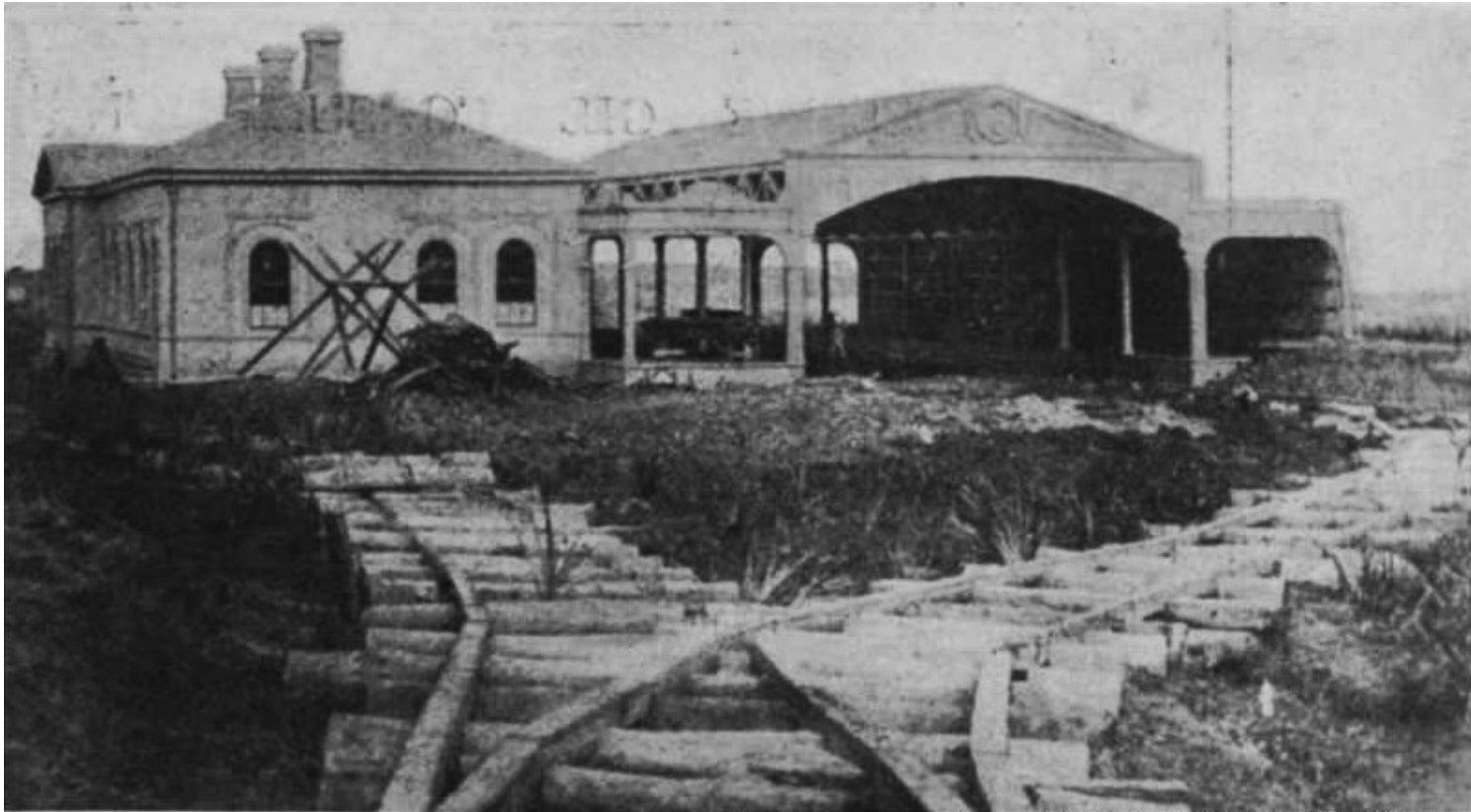
Item ID	Description	MAJR	STATUS	Year	Start	End
1759578	Rerail-New Rail	MAJR	CREATE	2025	370.880	371.080
4072335	Resleeper-Face-Concrete-700mm Galv	MAJR	CREATE	2025	369.419	370.265
5151227	Destress-Pandrol 370.300 370.800	MINR	CREATE	2025	370.300	370.800
5483222	Destress-Pandrol - Rerail	MINR	CREATE	2025	370.880	371.080
10198838	Parent - Rerail MSL 370.880-371.080	MAJR	CREATE	2025	370.880	371.080
1759578	Rerail-New Rail	MAJR	CREATE	2025	370.880	371.080
5483222	Destress-Pandrol - Rerail	MINR	CREATE	2025	370.880	371.080
10198967	Parent - Resleeper Face MSL 369.419-370.265	MAJR	CREATE	2025	369.419	370.265
4072335	Resleeper-Face-Concrete-700mm Galv	MAJR	CREATE	2025	369.419	370.265
10198971	Ballast - Top-up - Resleeper Face	MINR	CREATE	2025	369.419	370.265
10628276	Resleeper-Face-Bridge-HW Br. 213	MAJR	CREATE	2027	370.265	370.299
10659300	Rerail-New Rail	MAJR	FIELDCOMP	2023	369.950	370.310
10659364	Destress-Pandrol 369.450 370.210	MINR	INPRG	2024	369.600	370.360
10671041	Parent - Rerail-New Rail	MAJR	LOCKED	2024	369.950	370.310

Sleepers

Types of Sleepers



NZ Native sleepers



Invercargill Station c.1860



AUS HW sleepers





TPR sleepers





Concrete sleepers





PDS sleepers





HW Azobe sleepers





Composite sleepers



Sleeper Management

Renewals Process



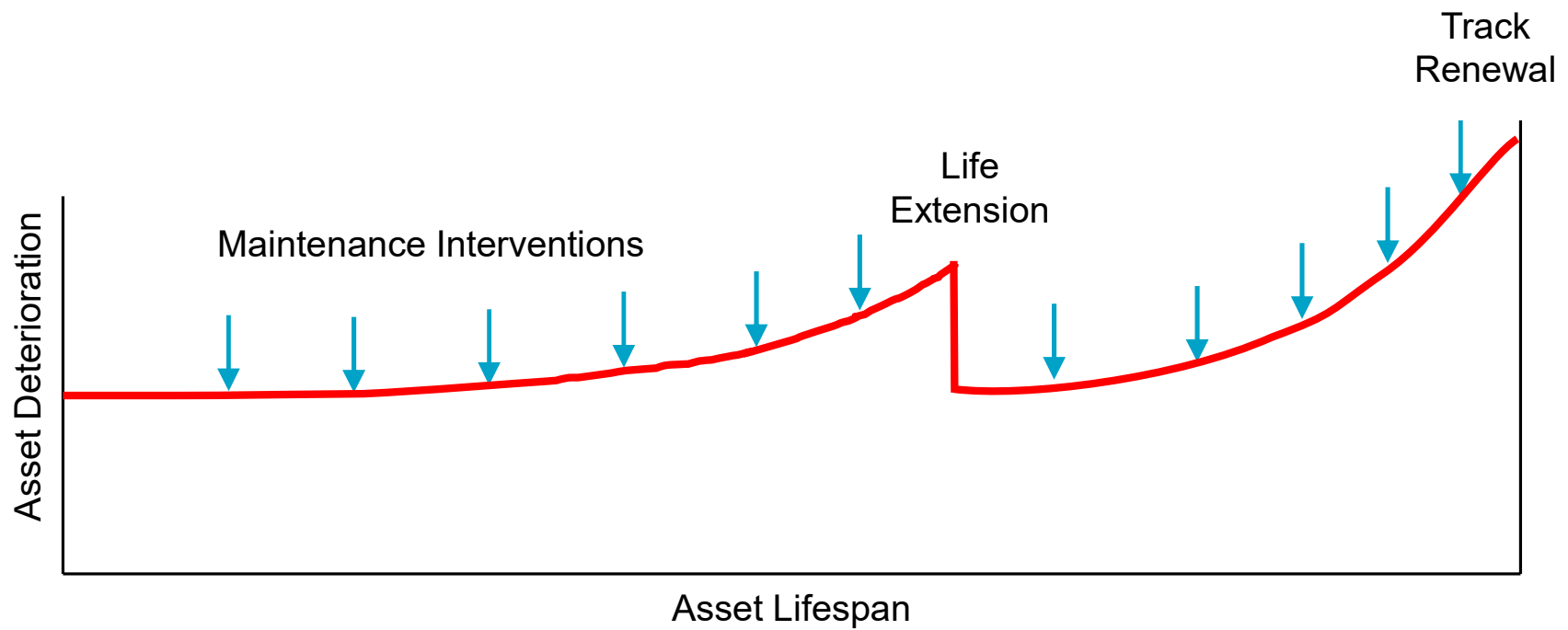
The Renewal Process



Life Extension



Photo of the Life Extension Graph





Photos of the life extension processes

- **Cross Boring then Double Fastening**
- **Vortok Coil Inserts**
- **Pandrol Plating**
- **Spot Resleepering**





Thank you

KiwiRail 