

# Wellington Metro Upgrade Programme

**PRESENTATION TO IPENZ TRANSPORT GROUP CONFERENCE**

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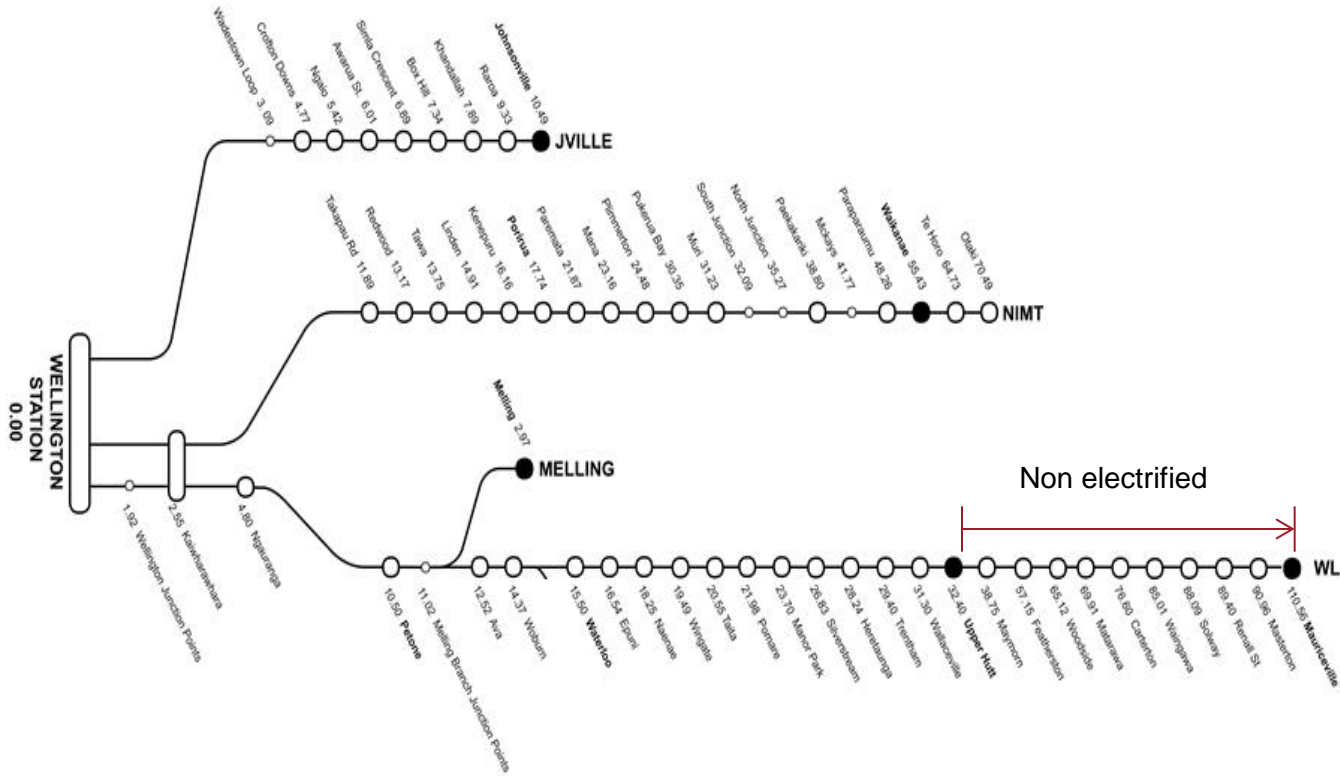
**WMUP MANAGER**

**WEDNESDAY 26<sup>TH</sup> MARCH 2014**

*Issue 2*



# Wellington Metro Network



**KiwiRail** WELLINGTON AREA NETWORK SCHEMATIC

**KiwiRail**



# Brand new network 1936 - 1961



KiwiRail 



# Setting the scene

- **Deferred maintenance of network**
- **WRRP (changes to accommodate Matangi, third main, MacKay's north duplication, Waikanae extension)**
- **Associated with this - Changes to ownership and funding**
- **Who is who (roles)**
  - Greater Wellington Regional Council
  - Operator
  - Access Provider
  - Crown
- **Greater Wellington responsible for funding network its services use**
- **Crown to make good the deferred capital maintenance (one off “catch up”)**
- **Steady State Renewals covered by Greater Wellington and KiwiRail**

**KiwiRail** 



# Deferred maintenance - “catch up”



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# Details of Programme

## Catch Up Renewals - \$88.429 million total

- Traction - \$56.244 million
- Signals, Telecommunications and Electrical - \$23.095 million
- Platforms - \$9.090 million

## Steady State Renewals

- Traction \$1.5 - \$1.9 million per year
- STE - about \$425k per year
- Track - about \$6m per year, with some significant peaks
- Structures \$800k - \$1.3m per year

Opex - about \$9 – \$10 million per annum

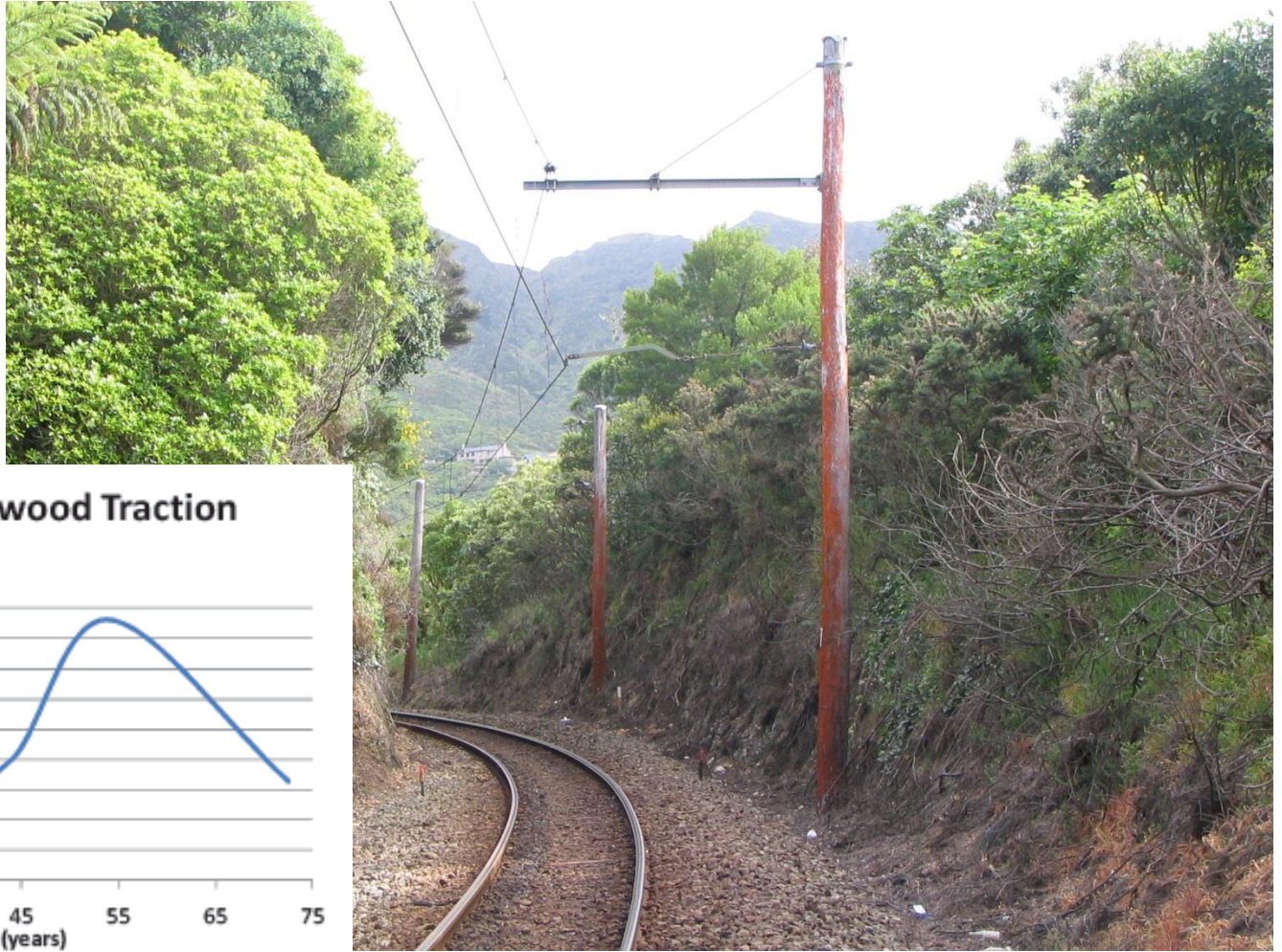
## Betterment

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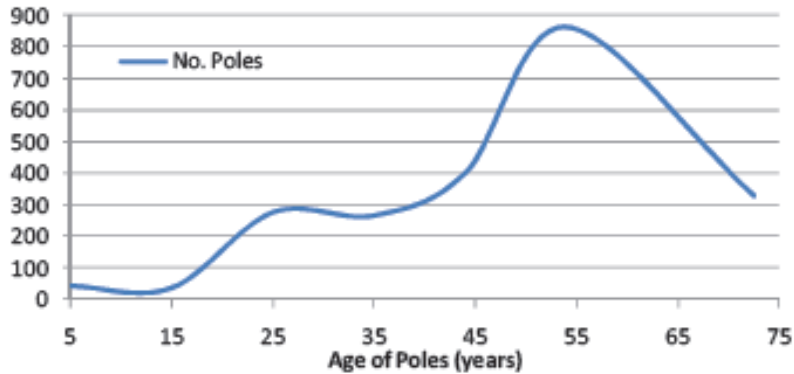




# Traction – deferred maintenance



Age Spread of Hardwood Traction Poles





*“The WEA traction overhead condition is below par for a comparable railway network (e.g. Melbourne or Sydney 1,500 V d.c. system networks)” Parsons – Brinkerhoff review of KiwiRail’s assessment of its overhead line network*



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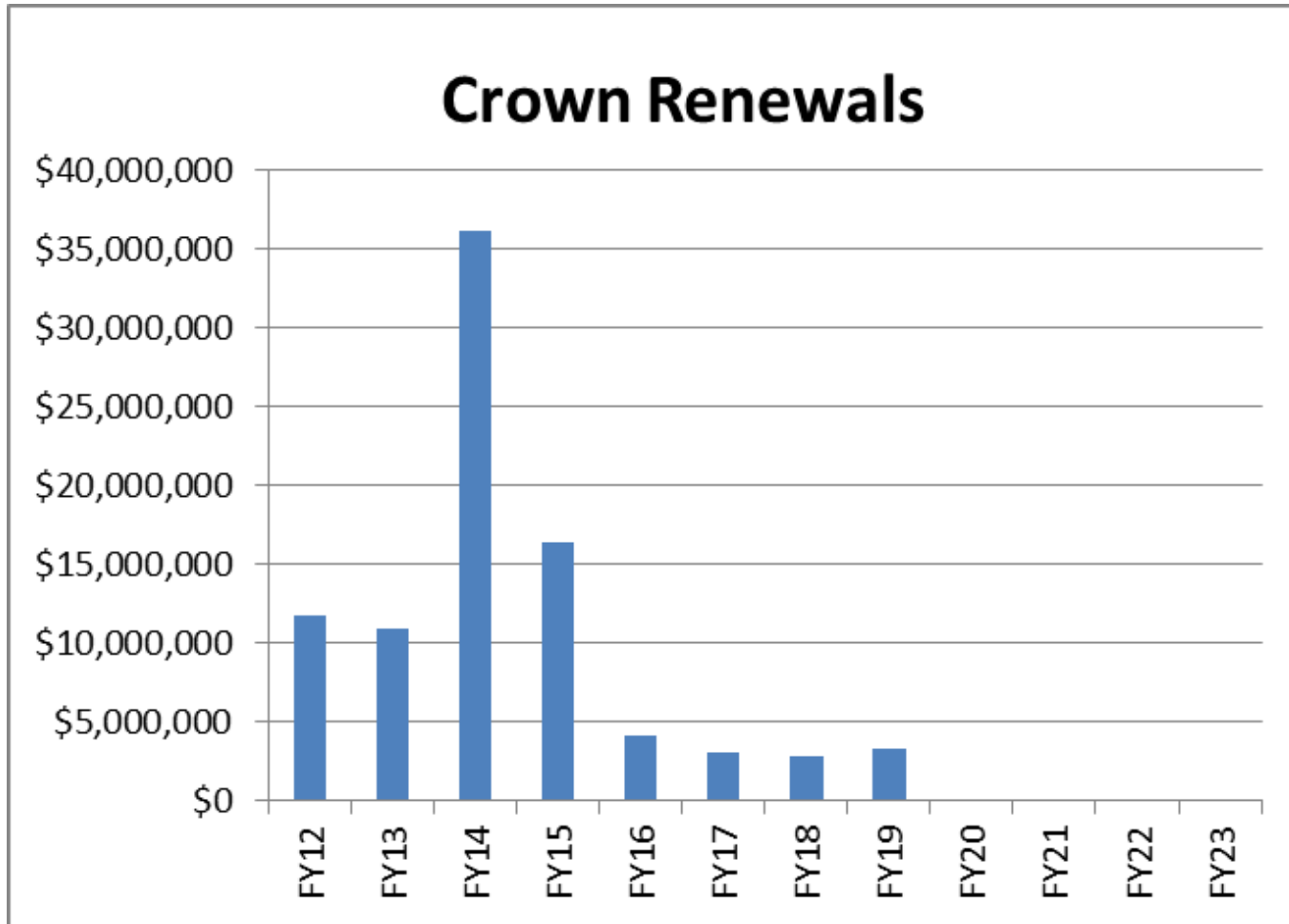
# Renewing an existing electrified railway



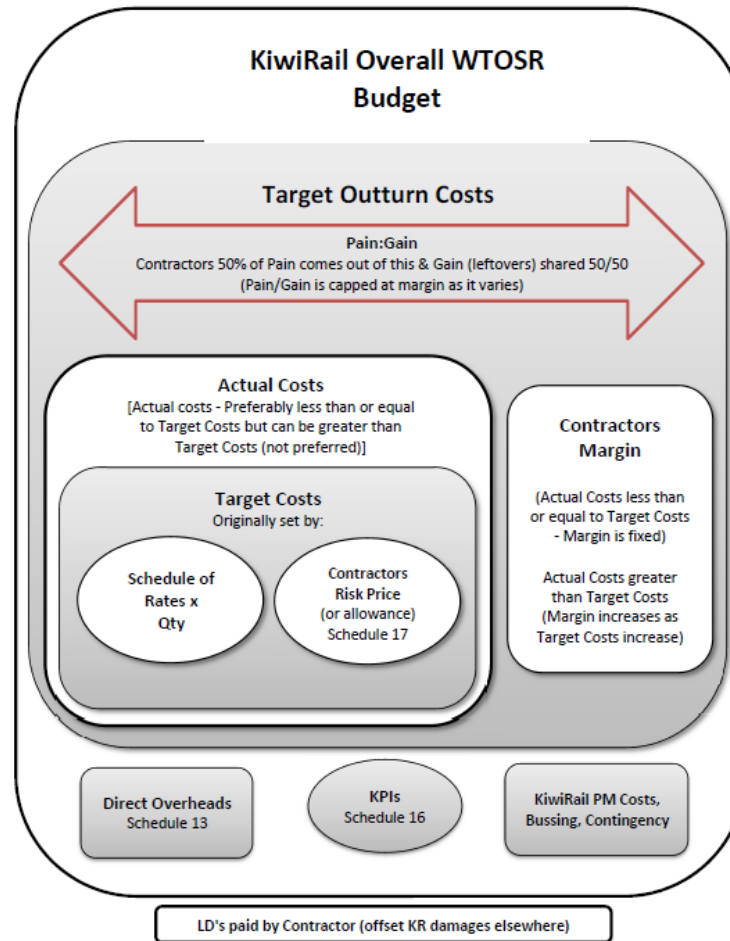
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# Front Loading



# Face Renewal Contract



# New traction pole standard



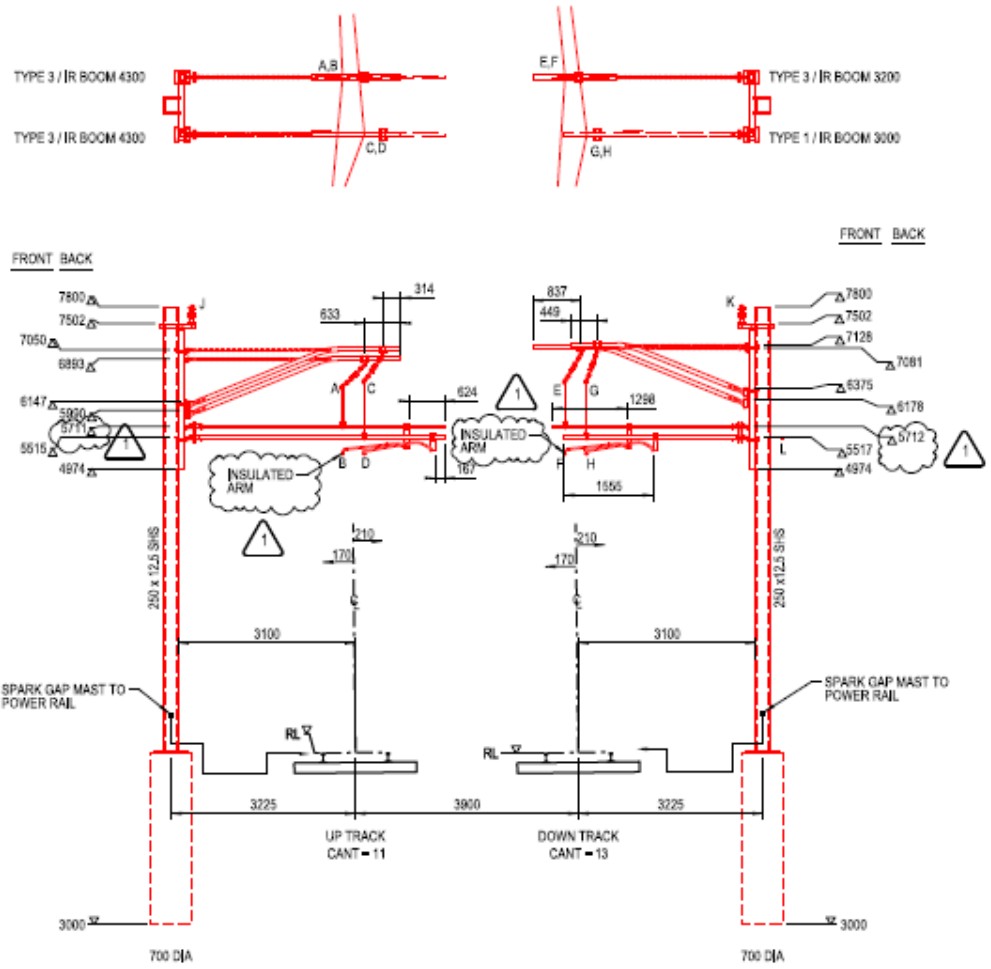
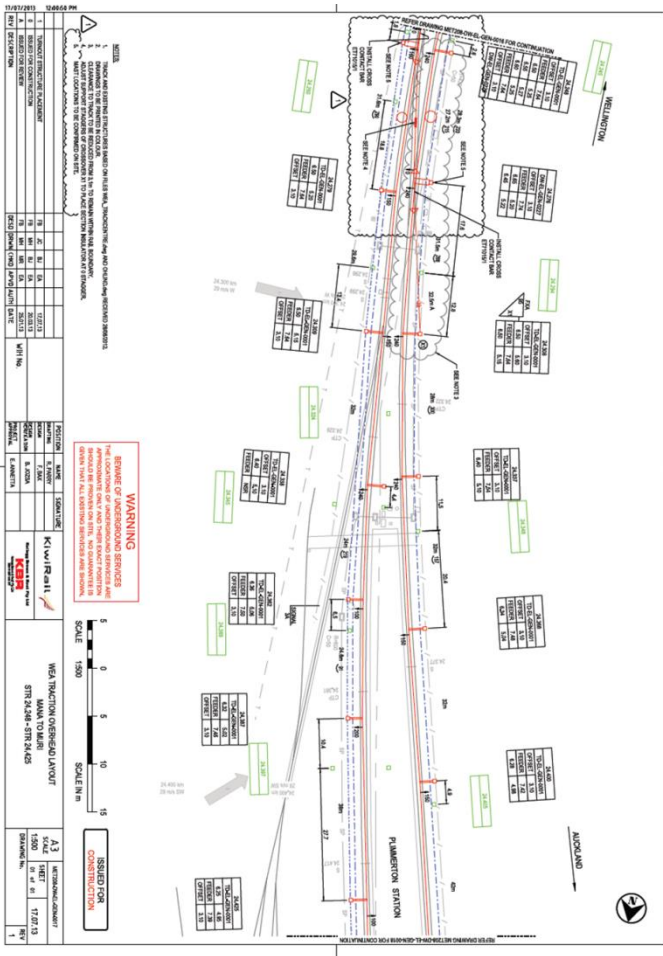
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# Balance Weight Tension



# Design



Structure 24.012 - Plimmerton



# Buried services



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# Boring foundation (with trains running)



**KiwiRail** 



# Cost saving – twin track cantilevers



# Route Access



KiwiRail 



# Concrete and reinforcing



kiwirail



# Challenging Ground Conditions



# Finished foundation and mast standing



KiwiRail 



# Wire running



# SP1 facts and figures

**18.06 route km**

**37.32 single track km**

**48.64 km of running wire**

**904 foundations and 904 masts (650 after Twin Track Cantilever)**

**27 bridge attachments**

**48 tension lengths (plus 9 cross overs)**

**19.140 km of parallel trench and backbone duct (signals power and comms)**

**159 cable pits**

**47 under track crossings**

**Up to 100 staff per day during full weekend shut downs**

**18 month duration planned (now 26 months to accommodate AEP)**

**KiwiRail** 

