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ASX Market Announcements
ASX Limited
20 Bridge Street
Sydney NSW 2000

27 October 2014

BY ELECTRONIC LODGEMENT

Aurizon analyst and investor presentation

Please find attached analyst and investor presentation for immediate release to the market.

The presentation will be made at 10:00am (Brisbane time) and will be available via webcast, accessible through the following link:

<http://www.media-server.com/m/p/z9gscev6>

Yours faithfully



Dominic D Smith
VP & Company Secretary





Investor Briefing & Site Tour

Driving Value

27 & 28 October

Presentations



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Investor Briefing – Driving Value

Day 1 – 27 October 2014

Welcome & Introduction

Lance Hockridge – Managing Director & CEO

Agenda

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1

Welcome & Introduction

MD & CEO – Lance Hockridge

2

Network Introduction

EVP Network – Alex Kummant

3

Network Operations

VP Network Operations – Clay McDonald

4

Capital Expenditure / Network Regulation

VP Network Regulation – Lana Stockman

VP Network Finance – Pam Bains

5

Above Rail Operations

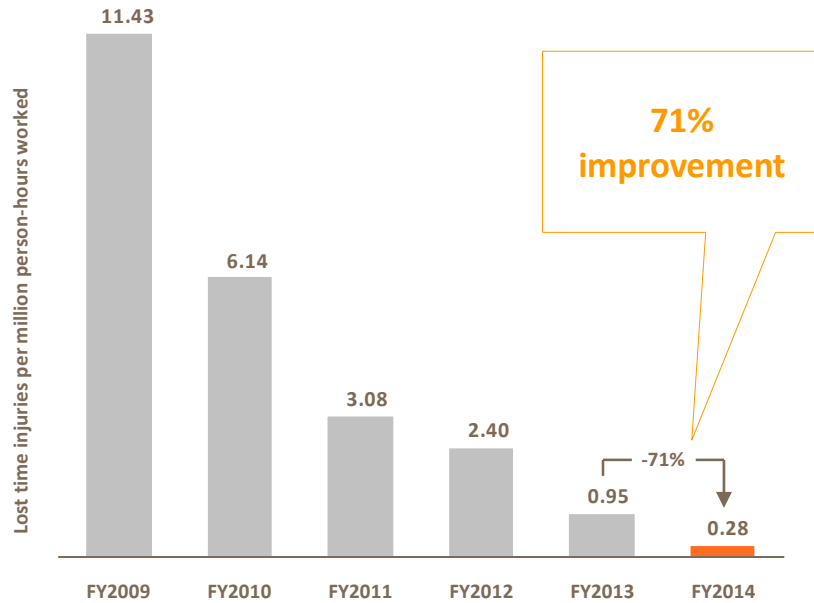
EVP Operations – Mike Franczak

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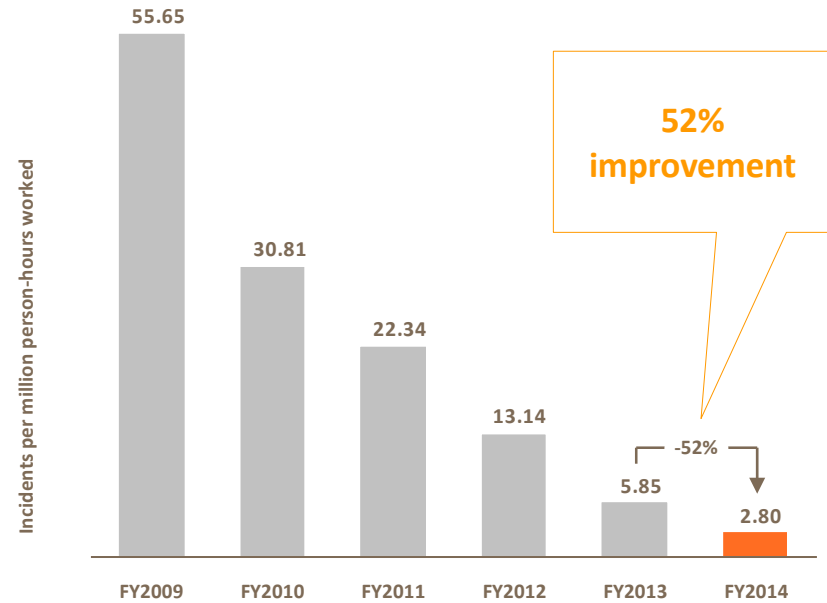
Q & A

Safety performance, our target is **ZERO HARM**

Lost Time Injury Frequency Rate (LTIFR)¹



Total Recordable Injury Frequency Rate (TRIFR)¹



1. LTIFR & TRIFR includes employees only and does not include contractors

Aurizon's value creation fundamentals remain strong

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Network Below Rail	Above Rail	Driving Returns
<ul style="list-style-type: none"> ▪ Regulated Asset Base (RAB) growing to ~\$6bn by FY2017 ▪ Stable earnings, given regulated revenue stream ▪ Top six mining companies account for 80% of contract volumes ▪ Targeted projects to deliver cost effective incremental capacity ▪ UT4 draft revenue decision released 30 September 2014 	<ul style="list-style-type: none"> ▪ Volumes growing despite negative sentiment ▪ Coal haulage outlook for FY2015 remains 210-220mt (September 2014 quarter 54.2mt, 1% growth) ▪ Long-term demand for Australian commodities remains strong <ul style="list-style-type: none"> – China <ul style="list-style-type: none"> • Improved steel quality (met) • Higher quality thermal – India <ul style="list-style-type: none"> • Potential thermal shortfall 	<ul style="list-style-type: none"> ▪ Transformation: <ul style="list-style-type: none"> – On track for 75% Operating Ratio (OR) in respect of FY2015 – Culture of continuous improvement driving towards 70% and beyond – Integrated Operating Plan (IOP) driving operational improvements ▪ Transformational capital to speed reforms and deliver incremental returns

Aurizon's focus to drive shareholder value

Management's core focus is driving returns – all investment and activities must meet or exceed hurdle rates (mid-teens, pre-tax)

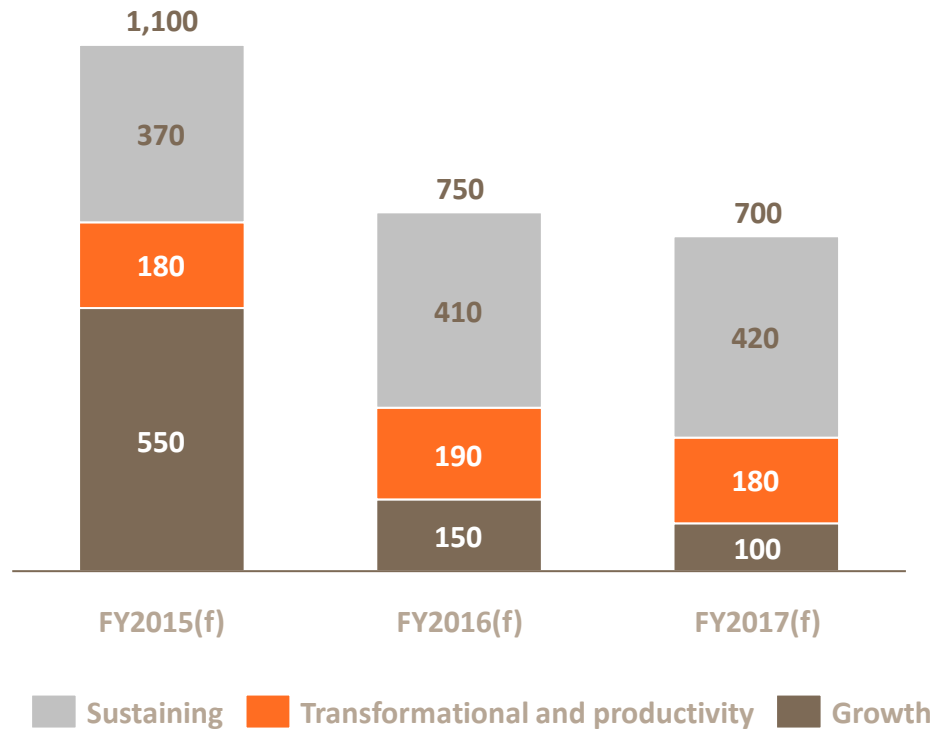
1. Focus on achieving 75% Operating Ratio in respect of FY2015 and continuous improvements thereafter
 - Safety is Aurizon's number one priority
 - Continuous transformation across the business
 - Working closely with customers
2. Transformational capital to speed reforms and deliver incremental returns
 - Information technology
 - Fuel and operational technology
 - Rollingstock maintenance
 - Fleet upgrades
3. Delivering high value, strategic growth opportunities in bulk supply chains, investment criteria remains:
 - Alignment and fit to enterprise strategy, objectives and capabilities
 - Return – risk vs. reward/internal hurdles and timing
 - Risk – strategic, operational, financial, legal and regulatory
4. Deploying effective capital management strategies, including:
 - Maintaining investment grade credit rating
 - Appropriate dividend levels (currently 70% payout ratio)
 - Excess capital returns where appropriate

West Pilbara Infrastructure Project (WPIP) – a growth **OPTION**, not yet a **COMMITMENT** to invest

- Option cost \$211m (15% investment in Aquila)
- Feasibility work commenced
- Key deliverable in 2015:
 - March 2015 indicative tariff (+/- 25%)
 - October 2015 binding tariff (+/- 15%)
- No capital investment until Final Investment Decision (FID) (**currently expected CY2016**) which is subject to:
 - Overall project economics being competitive irrespective of commercial framework
 - Obtaining appropriate credit security for all counterparties
 - Execution of take or pay contracts for infrastructure services for the life of the mine
 - Project financing with no recourse to Aurizon balance sheet
- Aurizon to be majority equity holder in InfraCo, with no MineCo equity
 - First option of InfraCo minority equity will be to MineCo partners

Transformational and productivity capex driving incremental returns and operational improvements

Capital expenditure FY2015 – FY2017 (\$m)



- Growth capex ~\$800m, including
 - ~\$400m Network (WIRP and Rolleston electrification)
 - ~\$300m Operations (Whitehaven rollingstock & Hexham)
 - ~\$100m Other
- Transformational and productivity capex ~\$550m
 - ~\$300m transformational capex driving incremental returns with an average payback within five years
 - ~\$250m fleet upgrades driving improvements in productivity, maintenance and fuel
- Sustaining capex ~\$1,200m
 - ~\$800m Network, the majority of which earns the regulated WACC
 - ~\$400m Operations and other sustaining capital including rollingstock overhauls
 - Long run expectations remain \$500m-\$600m per year

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Network Introduction

Alex Kummant – EVP Network

About Aurizon Network

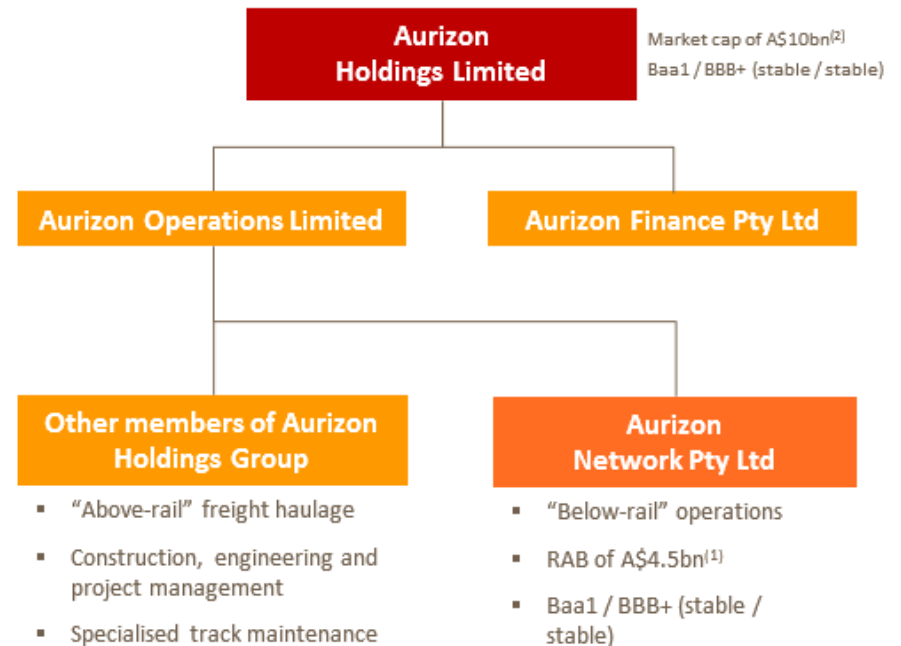
- Aurizon Network controls, manages, operates and maintains the fixed rail infrastructure "below rail" assets of the Central Queensland Coal Network (CQCN)
 - Regulated Asset Base (RAB) of A\$4.5 billion⁽¹⁾
 - Rated Baa1 / BBB+ (stable / stable)
- The CQCN is Australia's largest export coal rail network
- The CQCN is regulated by the Queensland Competition Authority (QCA)
- The regulatory framework is designed to provide open access to accredited rail operators (e.g. Aurizon, Pacific National and BMA) and allow a reasonable return on capital to the owner

FY2014 key statistics⁽¹⁾

Revenue	\$1,012m
Operating ratio	59.3%
EBIT	\$412m
Tonnes	214.5mt
Regulated Asset Base	\$4.5bn
Capex	\$595m



Aurizon Holdings Legal Structure



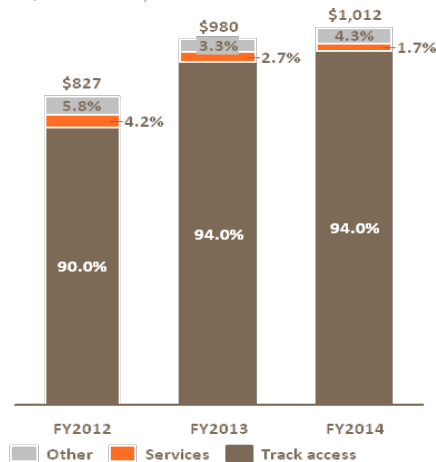
1. RAB is approved roll-forward value excluding Access Facilitation Deed Assets as at 30 June 2013
 2. As at 1 September 2014

Stable regulated revenue base underpinned by global customers

Stable regulated revenue base

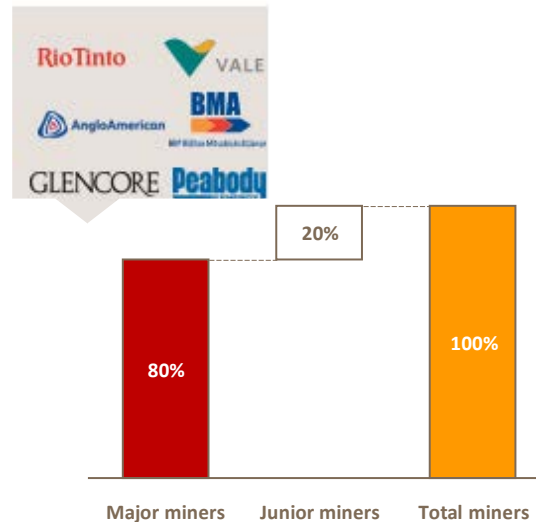
- The form of regulation is a conventional revenue cap
- Over 90% of Aurizon Network revenue is from track access payments
- Access revenue growth and contribution have remained stable over time

(A\$ in millions / % of revenue)¹



Strong customer base

- The CQCN delivers rail infrastructure to over 40 operating coal mines in the Bowen Basin coal region
- The mines are operated by a global group of coal miners, predominantly large, investment grade companies².

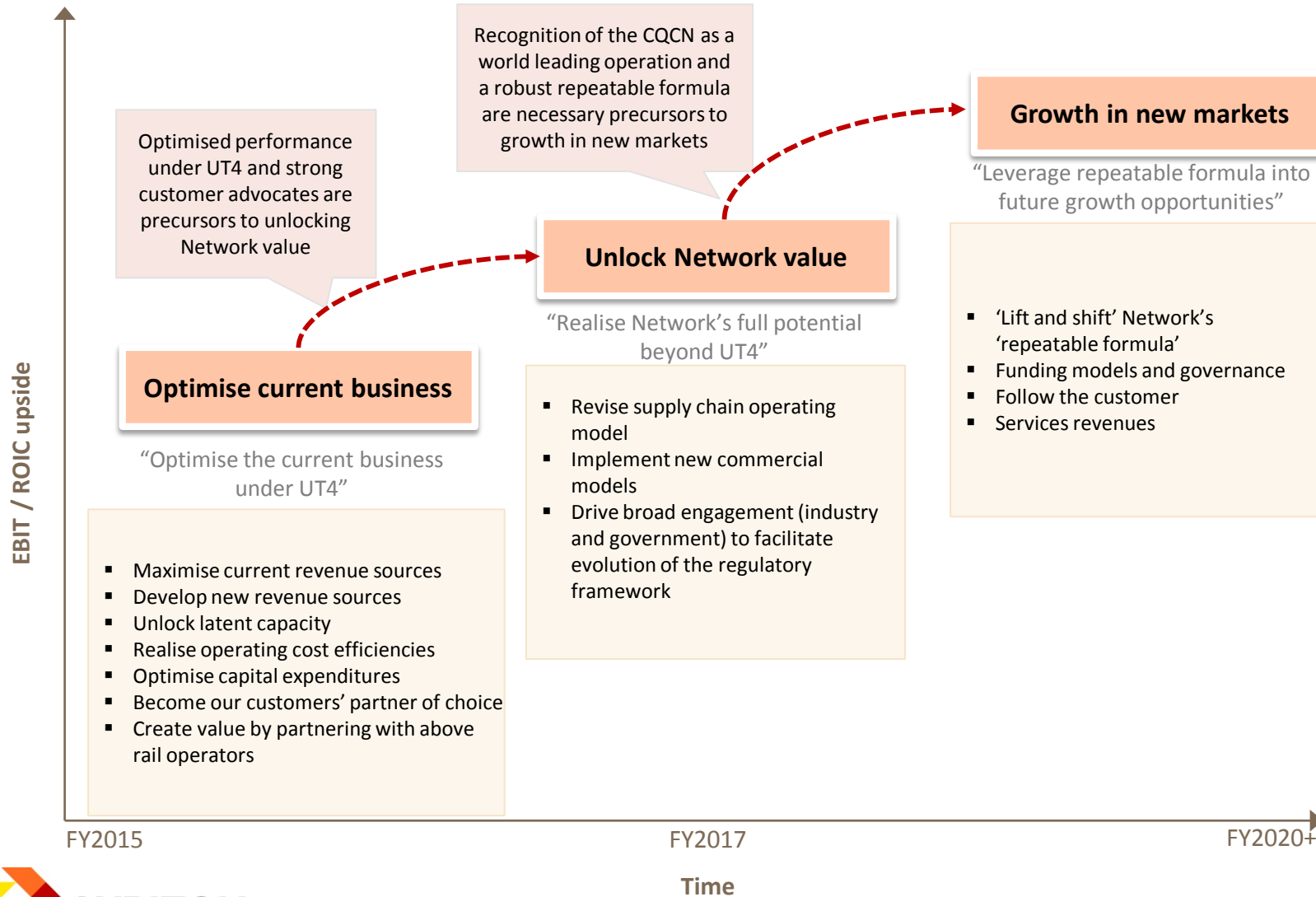


Current UT4 negotiations

- Increased level of stakeholder engagement
- Healthy relationship with QCA
- Continued engagement on maintenance costs
- All parties agree a fully realised maintenance process is in everyone's interest – Aurizon Network at record low delays and record high tonnes

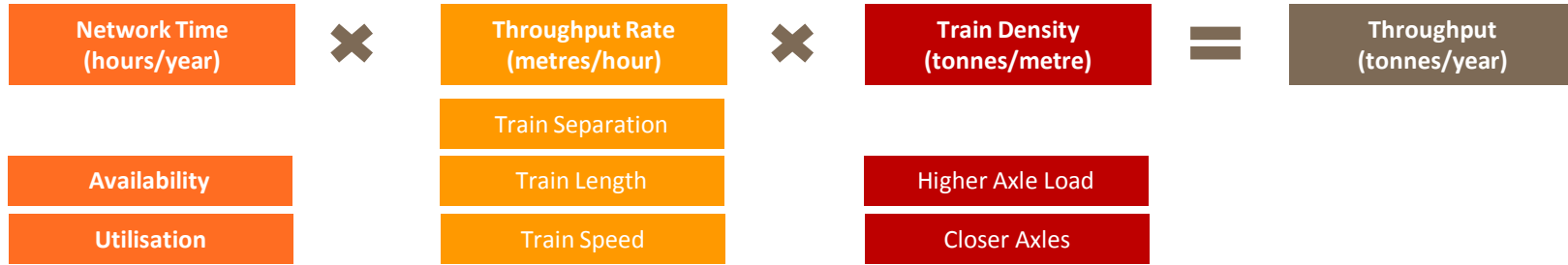
Network Strategy

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We will unlock latent capacity through a relentless focus on availability and utilisation...

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Our focus to unlock latent capacity:

- **Increase Availability** - Make the network more available by reducing maintenance time
- **Increase Utilisation** - Enable higher utilisation by improving planning and network reliability

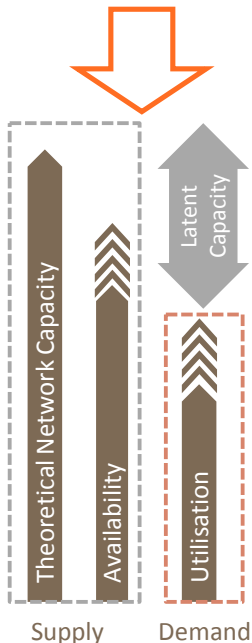
Our improvement strategies:

Availability

- Reduce closure times
- Improve maintenance planning
- Increase maintenance speed
- Reduce non-value tasks (maintenance start-up time)

Utilisation

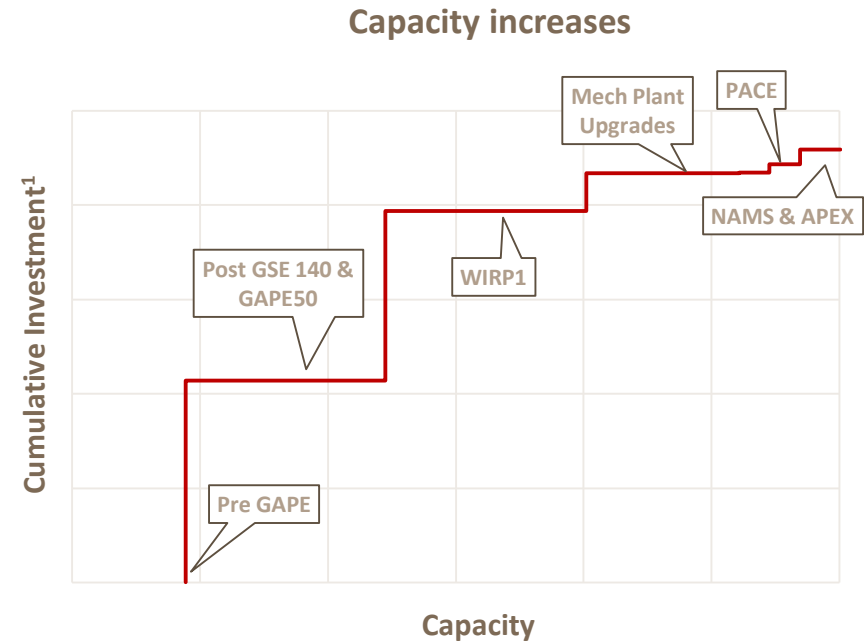
- Improve maintenance techniques (quality)
- Condition monitoring
- Implement planning technology



... this will be achieved through a series of targeted projects

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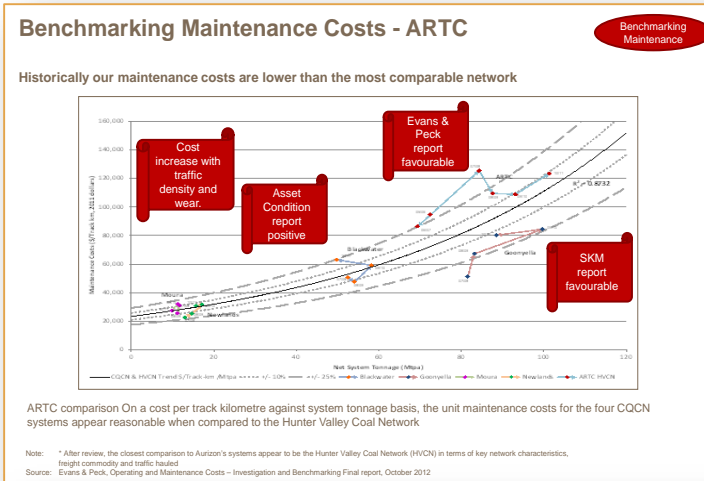
Project	Availability Impact	Utilisation Impact
New track machines – Ballast Undercutting and Resurfacing	✓	
Network Asset Management System (NAMS) – pinpoint needs	✓	
Advanced Planning and Execution system (APEX)		✓
Minor capital projects		
Electronic Isolation Form – less time on track	✓	
Possession and Capacity Evaluator (PACE)	✓	
Unmanned Aerial Vehicles (Drone)	✓	✓
Mobile Welders	✓	✓
Process improvement		
Rail Replacement under live wire / adjacent line	✓	
Standardised Maintenance Tasks	✓	
Maintenance Planning Alignment	✓	
Alternate Zonal Control	✓	
Progressive hand back track protection authority (TPA) process	✓	



- Projects expected to deliver incremental capacity at c25% of the cost² of major growth projects

Operating cost efficiencies to benefit supply chain

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- Best practice is the de facto competitor
- We will match and exceed industry best practice across all areas of our business by:
 - Lowering unit costs
 - Creating agile, flexible labour force and variable cost
 - Utilising technology to redesign work practices
 - Improving coordination between supply chain participants
- We will operate under a mantra of continuous improvement and demonstrate value to our customers
- Success by Network provides above rail performance benefits for all operators, the supply chain and customers

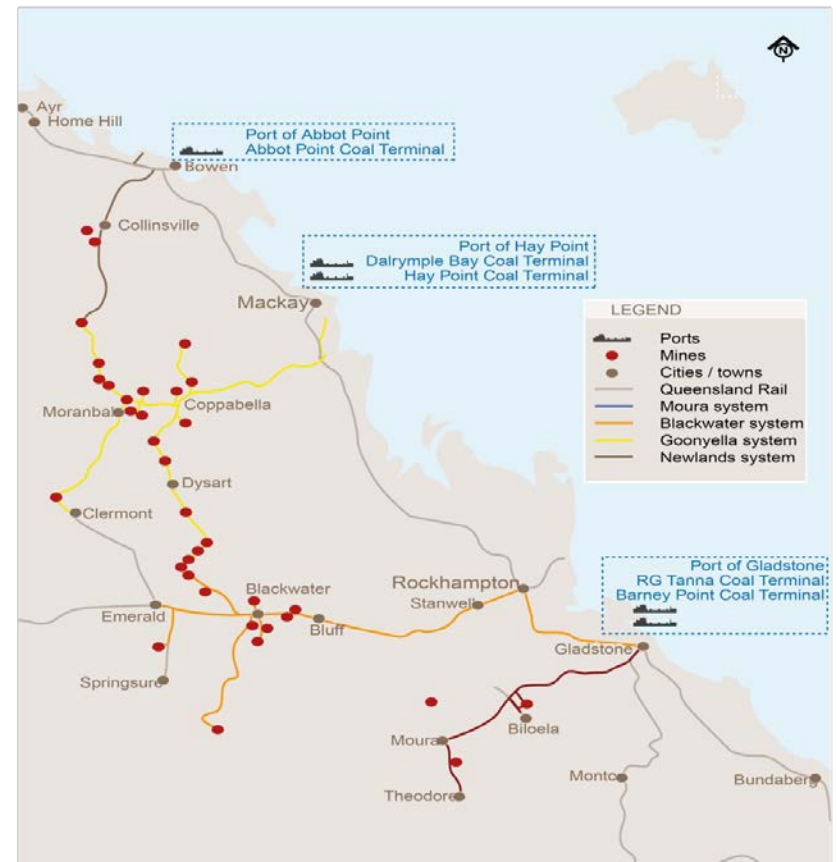
Network Operations

Clay McDonald – VP Network Operations

Aurizon Network Overview

- The CQCN comprises 4 major coal systems and 1 connecting system link serving Queensland's Bowen Basin coal region: Newlands, Goonyella, Blackwater and Moura with GAPE the connecting system link
 - 2,670 kilometres network length of which 1,945 kilometres is electrified
 - Over 40 operating coal mines serviced¹⁾
- Aurizon Network's operations are governed by 99 year lease arrangements with the State of Queensland
- Approximately 69 services per day delivering to five export coal terminals at three ports
- Open access network with 3 above rail operators – Aurizon Operations, Pacific National and BMA Rail

Central Queensland Coal Network (CQCN)



Introduction

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The last three years have been focused on operational performance improvements:

- Structure
- Focus
- Capability

In parallel there has been an emphasis on transformation:

- Modernisation and mechanisation
- Systems
- Technology



**Increased
Network
Utilisation**

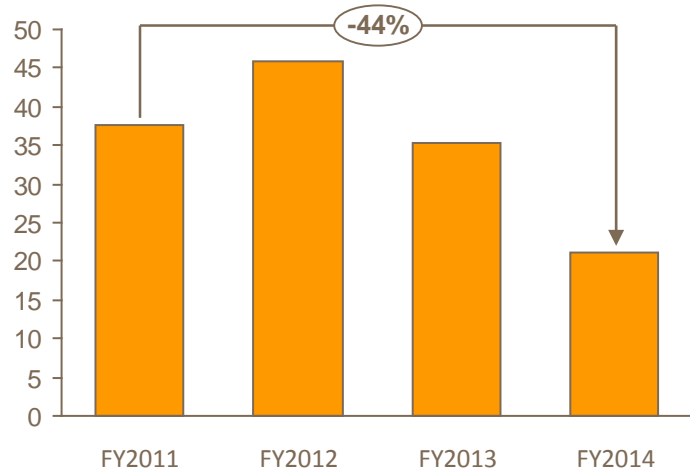
**Increased
Network
Availability**

**Unlocking
Network
Capacity**

**Ongoing Cost
Efficiencies**

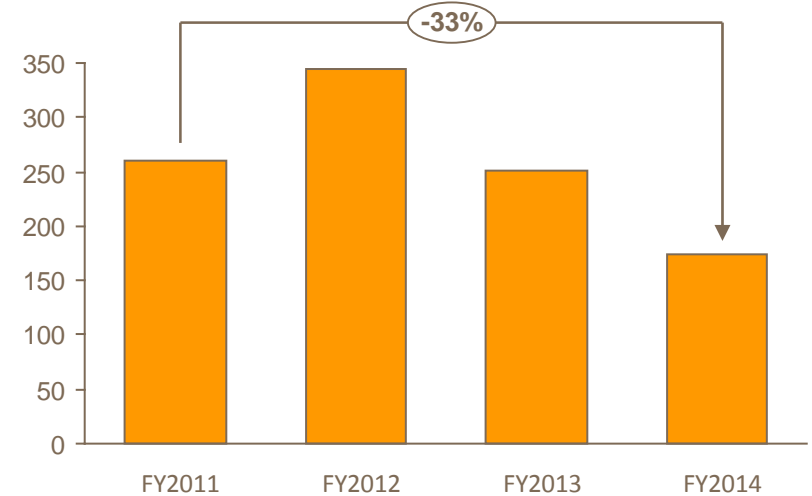
Our focus is leading to operational performance improvements

BR Delays > 15 mins per Service

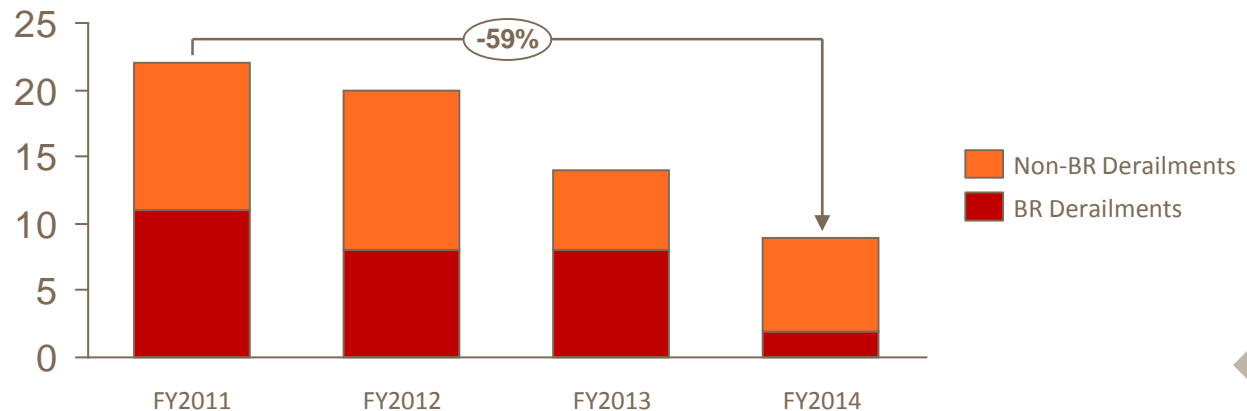


Below rail delays (excluding crossings) in minutes

Cancellations due to Traction Faults



Mainline Derailments



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Performance improvements are enabling increased network utilisation

Network is working to address the biggest capacity consumption factors to increase utilisation of the existing infrastructure:

Planned Maintenance

- Reducing closure times
- Improving maintenance planning
- Increasing maintenance speed

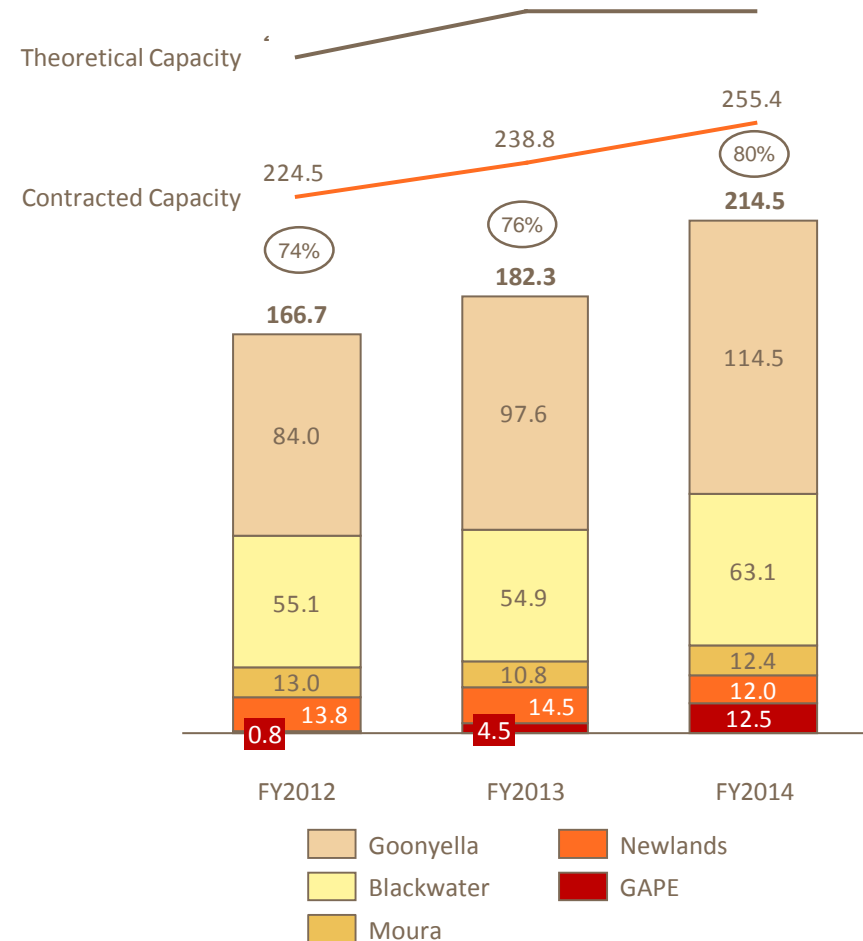
Reliability

- Focus on preventative and corrective maintenance
- Condition monitoring
- Predictive regime

Above Rail Logistics

- Enable longer heavier trains
- Planning, scheduling & day of operations optimisation software
- CQCN supply chain analysis initiative

Aurizon Network Volumes (mt)

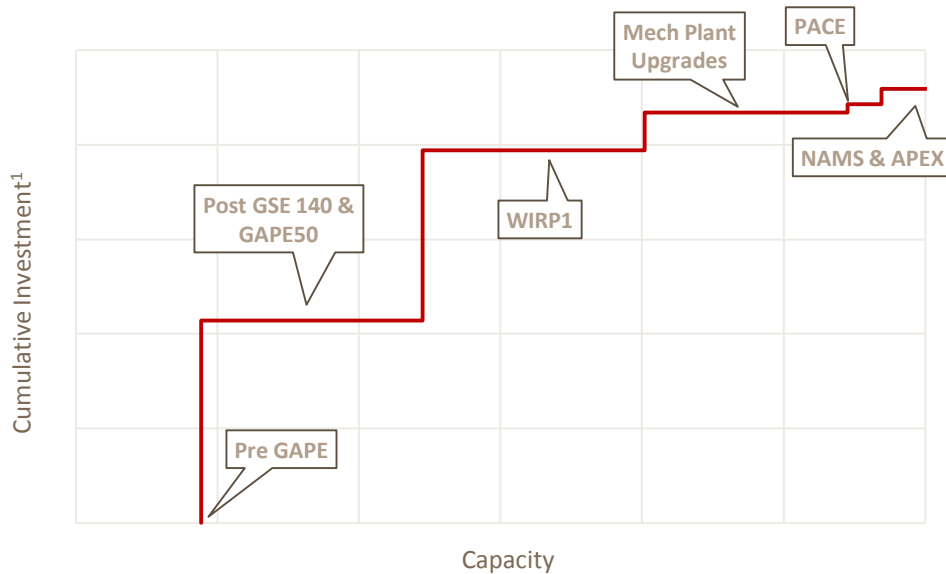


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Network strategic projects unlocking additional capacity in the future

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Additional Capacity Generated by Strategic Projects



Our strategic improvement program seeks to unlock capacity within the existing network.

A key theme is using technology as an enabler for:

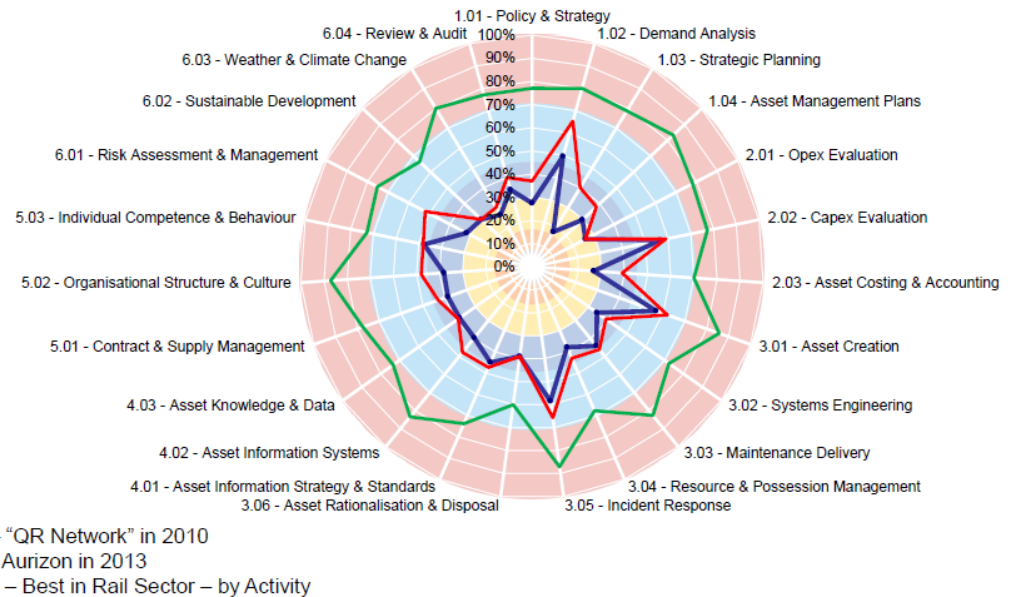
- Better planning & scheduling
- Optimised day of operations management
- Readily accessible quality asset data
- High production mechanised maintenance fleet
- Improved tools and processes in the field

Effective asset management delivers a sustainable reliable network

Asset Management

- Major asset categories:
 - Civil
 - Electrical
 - Telecoms and Signals
- Triggers for maintenance and renewal works are defined in the Aurizon Maintenance and Renewal Policy
- The activity triggers are continuously reviewed to ensure value and network performance

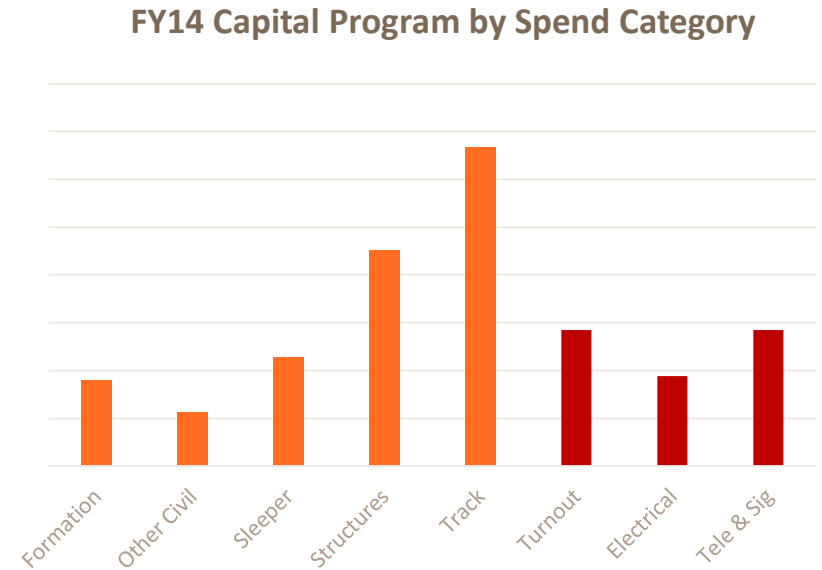
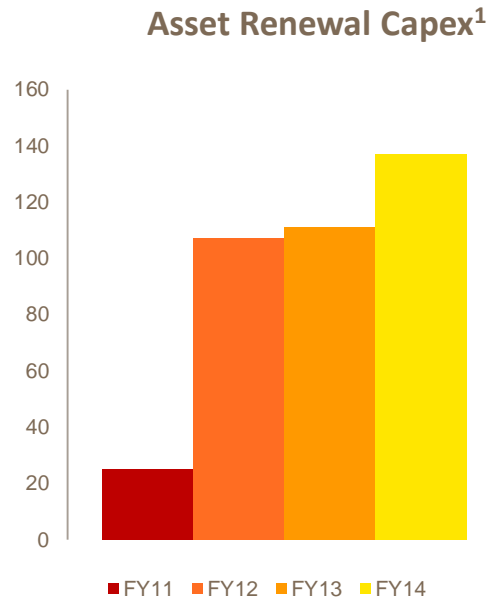
Asset Management Benchmarking



Performance assessment against PAS55¹ provides guidance on areas of improvement

Effective asset management underpins targeted Asset Renewal Program

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- Annual asset renewal capex is in line with US Class 1 railways and a RAB value of \$4.5b²
- Program approach and long term planning driving operational and cost efficiencies

- Total spend is dominated by civil assets scope consistent with current age of assets and renewal triggers in Asset Policies and Civil Engineering standards
- Mix between products is typical of forward program in near to mid time horizon

Which further drives sustainable operational performance improvements

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10 incidents to 3 incidents



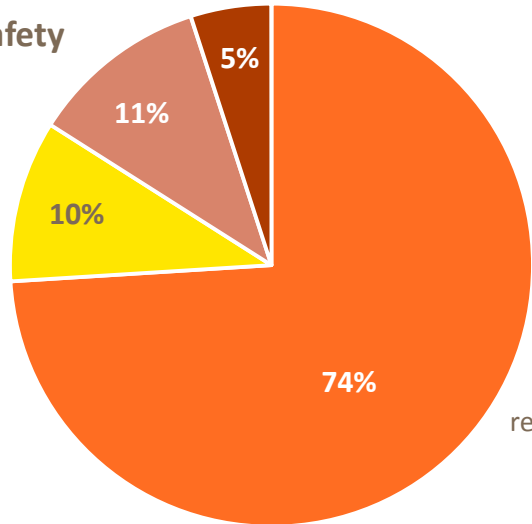
Telemetry fault 44% improvement

Obsolescence

Safety



Culverts repairs



Reliability

Improve asset performance through new technology

End of Life Replacement

Maintain a strong core asset through replacement of assets nearing end of life in a rolling program

20% rail wear improvement



Timber sleepers replaced with concrete

We are modernising the way we do standard work

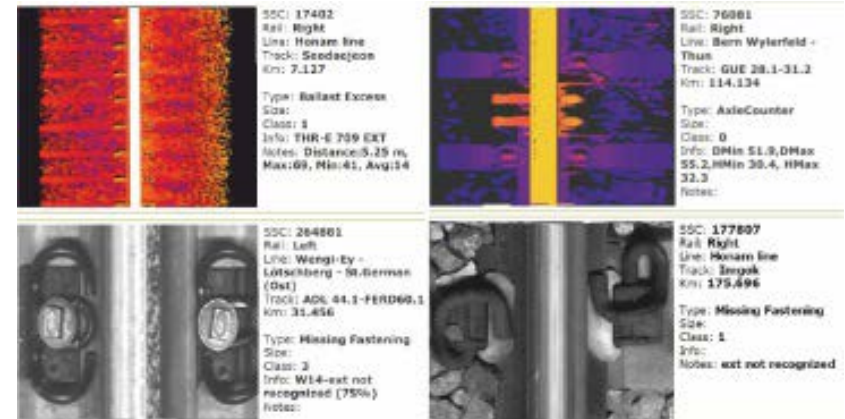
SAP Integrated Asset Management System

Whole of life asset management with tools to improve the velocity, access & accuracy of asset information

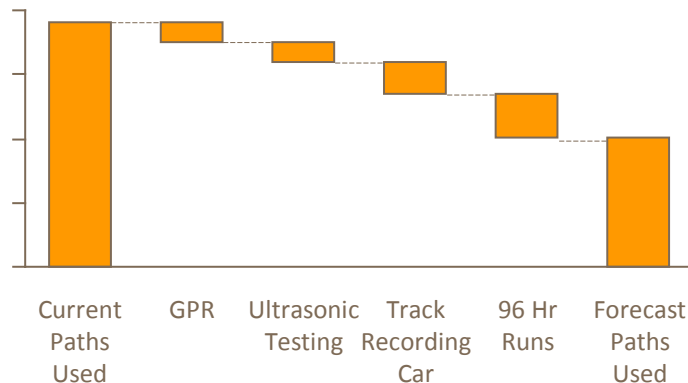


Mobile tablets for real time fault reporting in the field

Track Defect Inspection Reporting



Impact of Technology on Paths Used by Maintenance Activities



...with less intrusive inspection techniques improving the quality of asset data

Unmanned Aerial Vehicles (UAV) / Drones

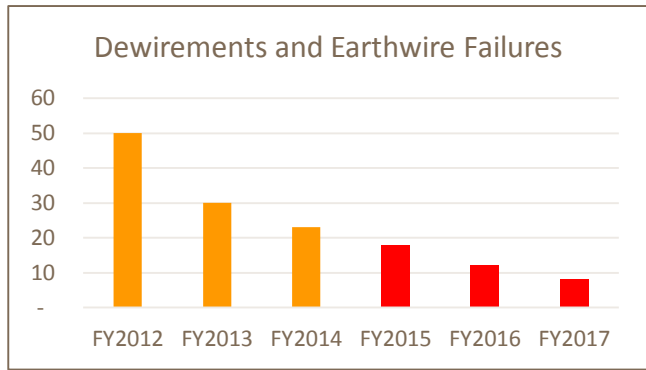


High definition images



Infra-red analysis

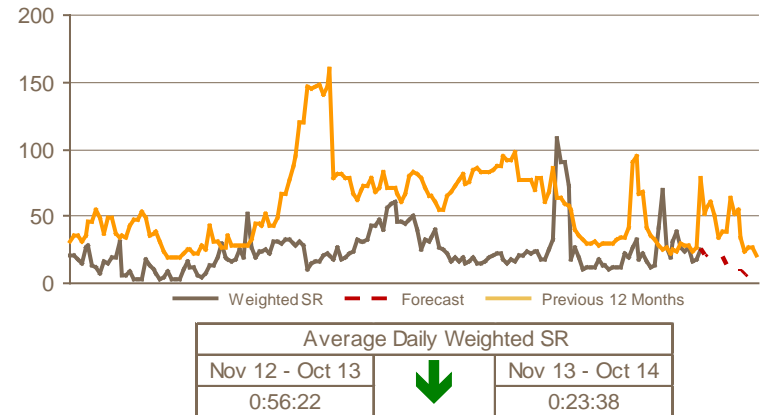
Use of the drones reduces time required on track for inspections while providing data for pre-emptive maintenance activities



The maintenance program is focused on delivering better track performance

- CQCN is split into North and South regions
- 6 major strategically located depots
- 450 maintenance staff in teams focusing on:
 - Maintenance and Response
 - Civil & Track
- Significant use of specialist contractors & variable labour
- This has resulted in a decrease in delays > 15min in 3 out of 4 corridors

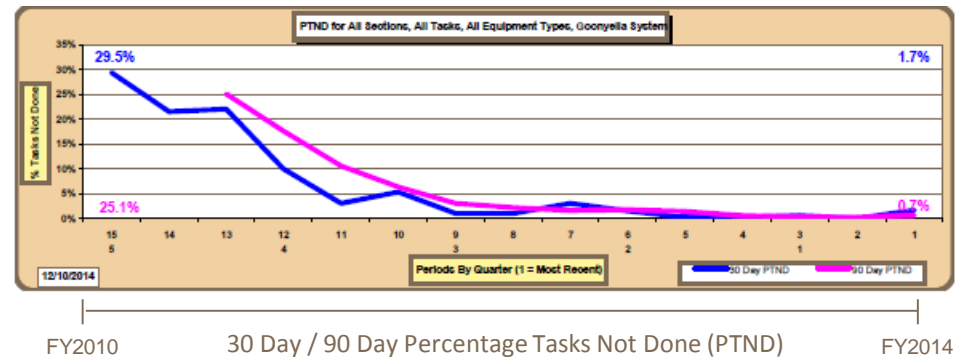
Speed Restrictions



Increased Tonnes
 ↓
 Increased Traffic
 ↓
 Increased Wear
 ↓
 Increased Maintenance
 with less Track Access

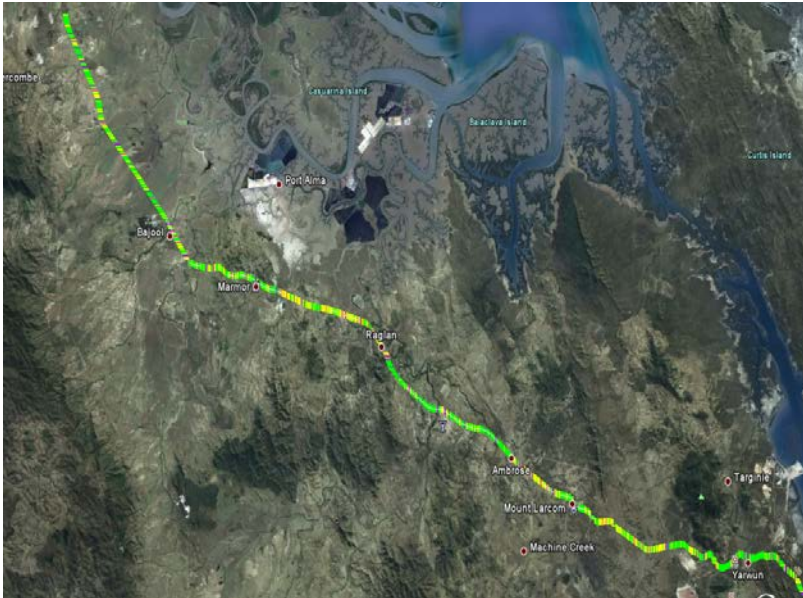
Multiple factors need to be balanced to deliver network reliability *and* throughput

Scheduled Preventative Maintenance Tasks



Technology & Systems – Better Ballast Management

Ground Penetrating Radar

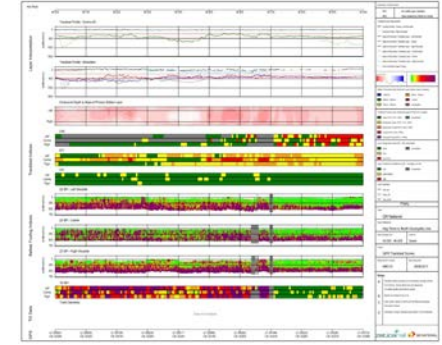


PVC Category	Description	PVC range (%)
5	Clean	0 to <10
4	Moderately Clean	10 to <20
3	Moderately Fouled	20 to <30
2	Fouled	30 to <50
1	Severely fouled	>=50

New Approach

- Near continuous recording 2 Million samples
- Trend data able to be analysed over time

Custom Designed for CQC



Test track panel - Yukon: Calibrated specific conditions

vs. Old Method Sampling

Standard Approach

- Manual spot sampling every 500m to 1km.
- 2000 samples across network
- Slow (8 samples per day) & Capacity intensive
- High risk of sampling error



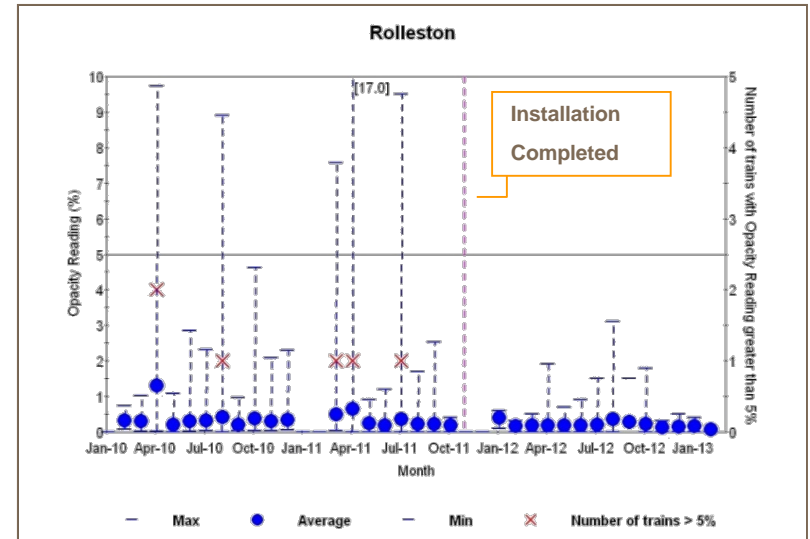
Technology & Systems – Coal Fouling Prevention

Veneering Spray System & Garden Bed Profile



Total Cost 3.3c per tonne

Opacity Dust Monitoring Results



- Reduction of coal dust emissions improves the integrity of the network while benefiting local communities in close proximity to rail lines
- 23 Aurizon and 13 Mine owned veneering stations in operation
- Veneering can reduce coal dust emissions by up to 75%

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Modernisation & Mechanisation – increased productivity from time on track

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The Mechanised Maintenance team of 171 FTE consists of:

- Resurfacing (North & South)
- Ballast Cleaning (Pre-work & Operations)
- Plant Maintenance

Resurfacing Fleet

- 1 Interim Switch Tamper
- 2 New Switch Tampers
- 5 New Mainline Tampers

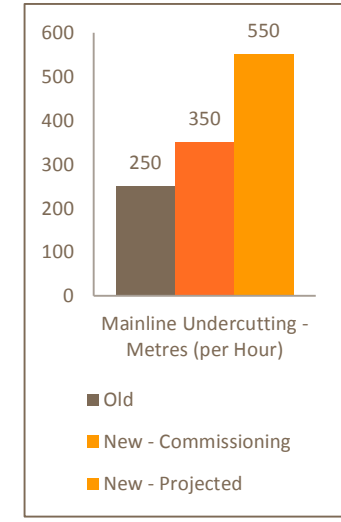
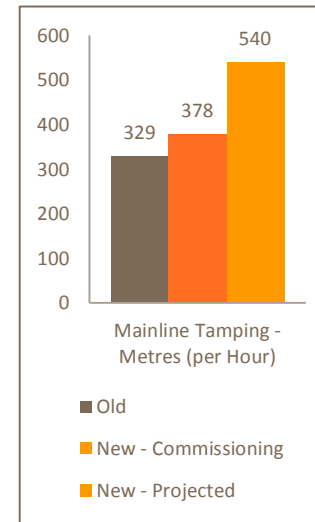
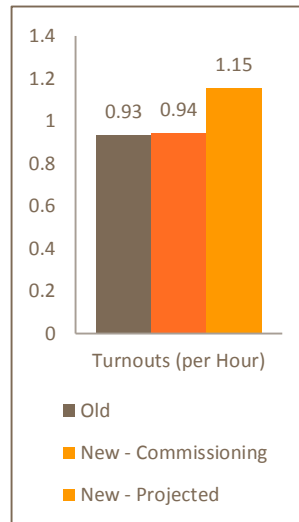
Ballast Cleaning Fleet

- 56 Ballast Wagon Upgrades
- 6 Spoil Wagon Upgrades
- 8 New Spoil Wagons
- 3 New Ballast Sidings
- 1 New Mainline BCM
- 1 New Turnout BCM

Resurfacing



Ballast Cleaning



Systems & Technology – Planning and product integration

Integrated Planning

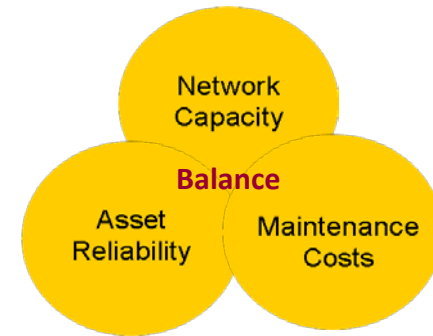
Integrated Planning optimisation is a key element of world's best practice operation of a complex supply chain.

Improvement Strategies

Collaborating with GE and Norfolk Southern to leverage Class 1 learnings to optimise Day of Operations management for the benefit of the entire supply chain.



Possession Assessment and Capacity Evaluator



'PACE' will implement a quick evaluation of the balance & trade-offs between Network throughput, asset reliability and sustainability and resources allocated.



Regulation

Lana Stockman – VP Network Regulation

Revenue protection mechanism

Aurizon Network's regulated revenue is protected through a combination of contractual and regulatory mechanisms that are included in the Access Undertaking and Access Agreements

Take-or-pay mechanisms

- Primary revenue protection mechanism available to Aurizon Network
- Aurizon Network receives revenue certainty from Access Holders
- Access Holder receives long term access rights

Revenue cap mechanism

- Revenue cap ensures that Aurizon Network receives an efficient level of aggregate revenue
- Shortfall/Over-recovery is socialised across all Access Holders
- Shortfall/Over-recovery true up mechanism WACC-adjusts Year 2 tariffs

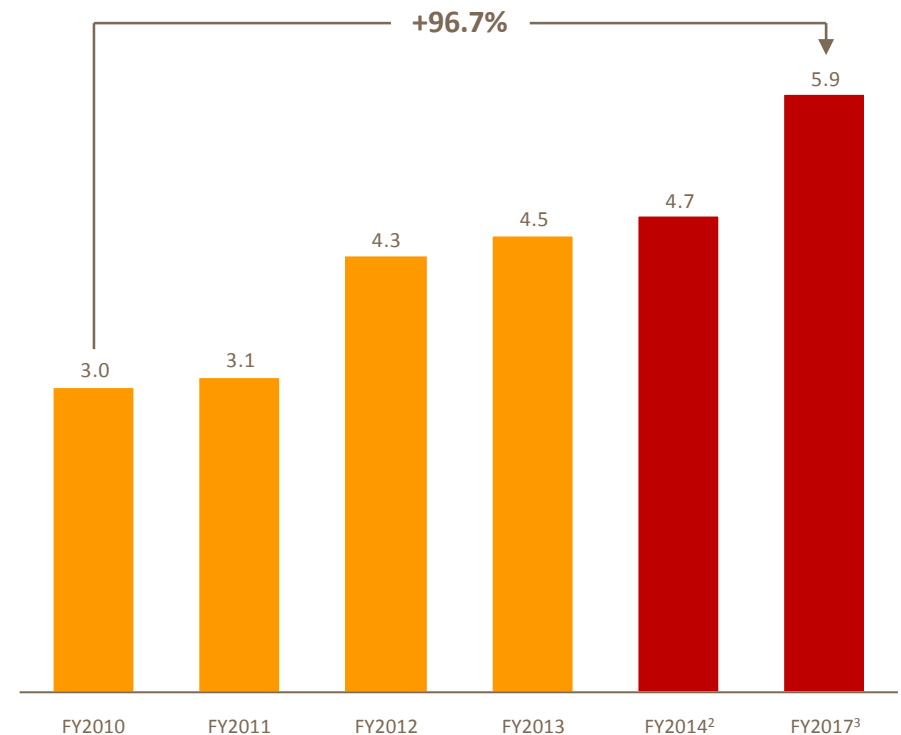
Socialisation of counterparty risk

- Counterparty risk occurs when certain mines are no longer in operation
- If a counterparty fails, the total allowable revenue will be shared among the remaining users in that system and so Aurizon Network will continue to earn its aggregate regulated revenue

Aurizon Network's RAB expected to double since IPO

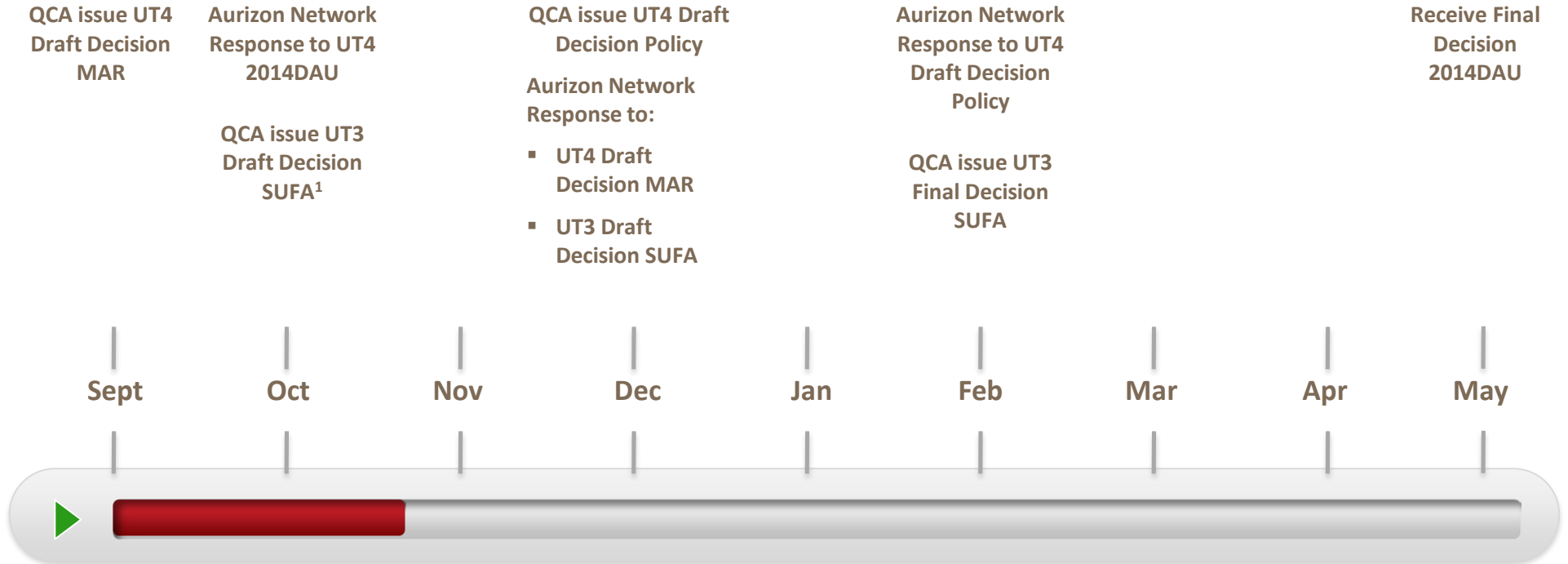
- QCA determines Aurizon Network's access pricing based on the estimated value of the RAB
- RAB value of A\$4.5bn (excluding assets subject to access facilitation deeds¹) as at June 30, 2013, was approved by the QCA on August 29, 2014
- Value of the RAB determined by:
 - Opening balance
 - Add inflation
 - Add capex
 - Less depreciation
- UT4 and Standard User Funding Agreement (SUFA) seek to include a pre-approval mechanism for capital investment:
 - Improves timing of assets into the RAB
 - Certainty of capital expenditure approval
 - SUFA pre-approval will assist third party financing options

Aurizon Network's RAB¹ over time (A\$bn)



UT4 Timeline

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Aurizon Network is working closely with the QCA and Industry to co-ordinate timing and activities to preserve the final determination timetable

QCA MAR Draft Decision

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2014 Draft Access Undertaking (DAU) Position		QCA Proposal
Maximum Allowable Revenue (MAR)	<ul style="list-style-type: none"> Headline DAU MAR submitted in April 2013 - \$4.78bn Headline DAU MAR revised in December 2013 - \$4.67B (due to updated forecasts) 	<ul style="list-style-type: none"> A MAR of \$3.88bn ('proposed MAR') which includes UT3 capital expenditure carryover account adjustments
Return on Capital (WACC)	<ul style="list-style-type: none"> 8.18% for UT4 (UT3 was 9.96%) Cost of equity of 10.15% Cost of debt of 6.56% 	<ul style="list-style-type: none"> A post-tax nominal (vanilla) WACC of 7.17% Cost of equity of 8.41% Cost of debt of 6.15%
Maintenance	<ul style="list-style-type: none"> \$1.07bn maintenance cost allowance including allowance for corporate overheads 	<ul style="list-style-type: none"> A \$738m maintenance cost allowance, including: <ul style="list-style-type: none"> Reductions to ballast undercutting Reductions to indirect costs and corporate overheads Transfer of corporate overheads to operating expense Other maintenance activity direct costs largely approved
OPEX	<ul style="list-style-type: none"> \$899m OPEX based on a combination of stand alone costs; benchmarking and reference to actual costs \$307m Traction costs included in OPEX OPEX balance excluding traction is \$592m 	<ul style="list-style-type: none"> A 15.4% decrease in operating cost allowance to \$761m Corporate Overhead reduction represents 61% of proposed decrease \$307m Traction costs retained based on further review OPEX balance excluding traction is \$454m
Return of Capital (Depreciation)	<ul style="list-style-type: none"> Depreciation allowance ranged from \$270m in FY14 increasing to \$349m in FY17 Proposed to apply weighted average mine life (WAML) policy to all assets 	<ul style="list-style-type: none"> Depreciation allowance ranged from \$271m in FY14 increasing to \$369m in FY17 Rejected WAML approach

Beyond UT4

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Stakeholder Engagement

- Strengthen stakeholder engagement focus to build trust and credibility
 - Miners
 - Operators
 - Legislators

Costing Processes

- Engagement of transparent cost build up processes for both maintenance and opex
- Transition to full standalone bottom up cost build

Rail Regulatory Reform

- Rail regulatory reform in conjunction with stakeholders, for example:
 - Short term transfer mechanisms to increase utilisation in the short term
 - Review Take or Pay arrangements
 - Realistic risk-reward incentive mechanisms to improve throughput, reduce costs and encourage investment from broad funding pool

UT5

- Work with stakeholders before lodgement to reduce timeframes
- Provide greater alignment with stakeholder needs

Capital Expenditure and WIRP

Pam Bains – VP Network Finance

Network's capital expenditure

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Major Growth Projects	Completion / Estimated Completion ¹	Construction Period (years)	Total Capital (\$m)	Capacity Increment (mtpa)	Notes
GAPE	January 2012	2.0	1,100	33	On time, on budget
WIRP ²	March 2015 / December 2015	4.0	858	27	On track, on budget
Hay Point (second road) ¹	April 2014	1.5	121	11	On track, under budget
Rolleston Electrification ²	December 2014	1.5	163	N/A ³	On track, under budget

Capex (\$m)	FY2014	FY2015 – FY2017 Expected	Projected
Growth	336	~400 ⁴	No major projects committed beyond the above at this date
Sustaining	259	~800 ⁵	~ 250 - 300 ⁵ p.a.
Total	595	~1,200	~ 250 - 300 ⁵ p.a.

- Network has strong capability in delivering major projects on time and on budget
- Capital expenditure to decline with no new growth projects committed at this point in time

1. Completion of Aurizon Network works
2. Current Estimate – Project currently under construction
3. Electrification works only – No increased capacity
4. The majority of this expenditure is on existing projects such as WIRP, GAPE and Rolleston
5. Excludes Rail Renewals

WIRP Fast Facts

- Wiggins Island Rail Project (WIRP) Stage 1 will facilitate transport of 27mtpa of coal to the new Wiggins Island Coal Export Terminal (WICET)
- 33% increase in export tonnage transported in the Blackwater and Moura systems (81mtpa to 108mtpa)
- \$858m investment in new and upgraded infrastructure in the Blackwater and Moura systems
- The Scope of Works has been divided into 6 segments (see following slide)



Customer	Mine	Below Rail
Aquila	Washpool	1.6
Bandanna	Springsure Creek	4.0
Caledon	Cook	4.0
Cockatoo	Baralaba	3.0
Northern Energy	Customer	0.5
Wesfarmers	Curragh	1.5
Yancoal	Yarrabee	1.5
Glencore	Rolleston	10.9
TOTAL STAGE 1¹		27 Mtpa

WIRP Project Status

- WIRP1 is currently being delivered on time and within budget with three of six stages already complete

Segment	Scope	Delivery Status	
Segment 1 – WICET Balloon Loop	Construction of a 13km single rail loop	Aurizon Network works completed in May 2014	✓
Segment 2 – NCL Segment	Construction of a WICET Spur line, Aldoga Holding Road and 2 Kabra Holding Roads	Expected completion in October 2015	●
Segment 3 – Moura East	Upgrades to the Moura Line up to the Moura mine spur line	Commissioned in August 2013	✓
Segment 4 – Blackwater Duplications	Duplication of 7 single line sections of the Blackwater system	3 of the 7 duplications commissioned Remaining 4 duplications expected to be commissioned October 2015	●
Segment 5 – Bauhinia North	Upgrades to the Bauhinia branch line	Commissioned in May 2014	✓
Segment 8 – Moura West	Upgrades to the Moura corridor between the 180km and 186km mark on the Moura line	Expected to be commissioned by March 2015	●

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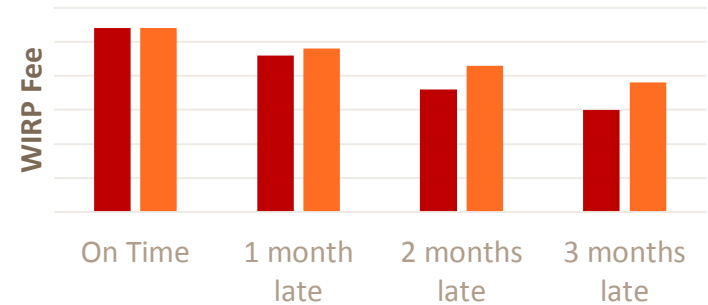
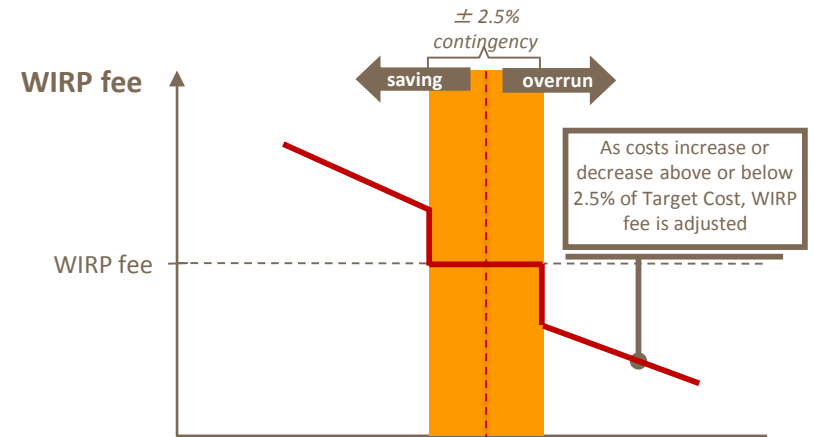
WIRP Returns

Regulated Returns

- WIRP regulated returns are recovered under the Access Agreements that Network must enter into with each WIRP customer or the WIRP customer's haulage provider
- It is proposed in UT4 that WIRP infrastructure be included in the Blackwater and Moura asset bases (RAB) – this is on the basis that its inclusion will bring the Reference Tariffs down

WIRP Fee

- WIRP Fee is a non-regulated return for 19.5 years and is subject to adjustment predicated on Network's performance against time and budget
- WIRP fee is not impacted by forecast volumes BUT there are adjustments if Network fails to deliver capacity
- Appropriate security in place to mitigate credit exposure



Impact of Delays

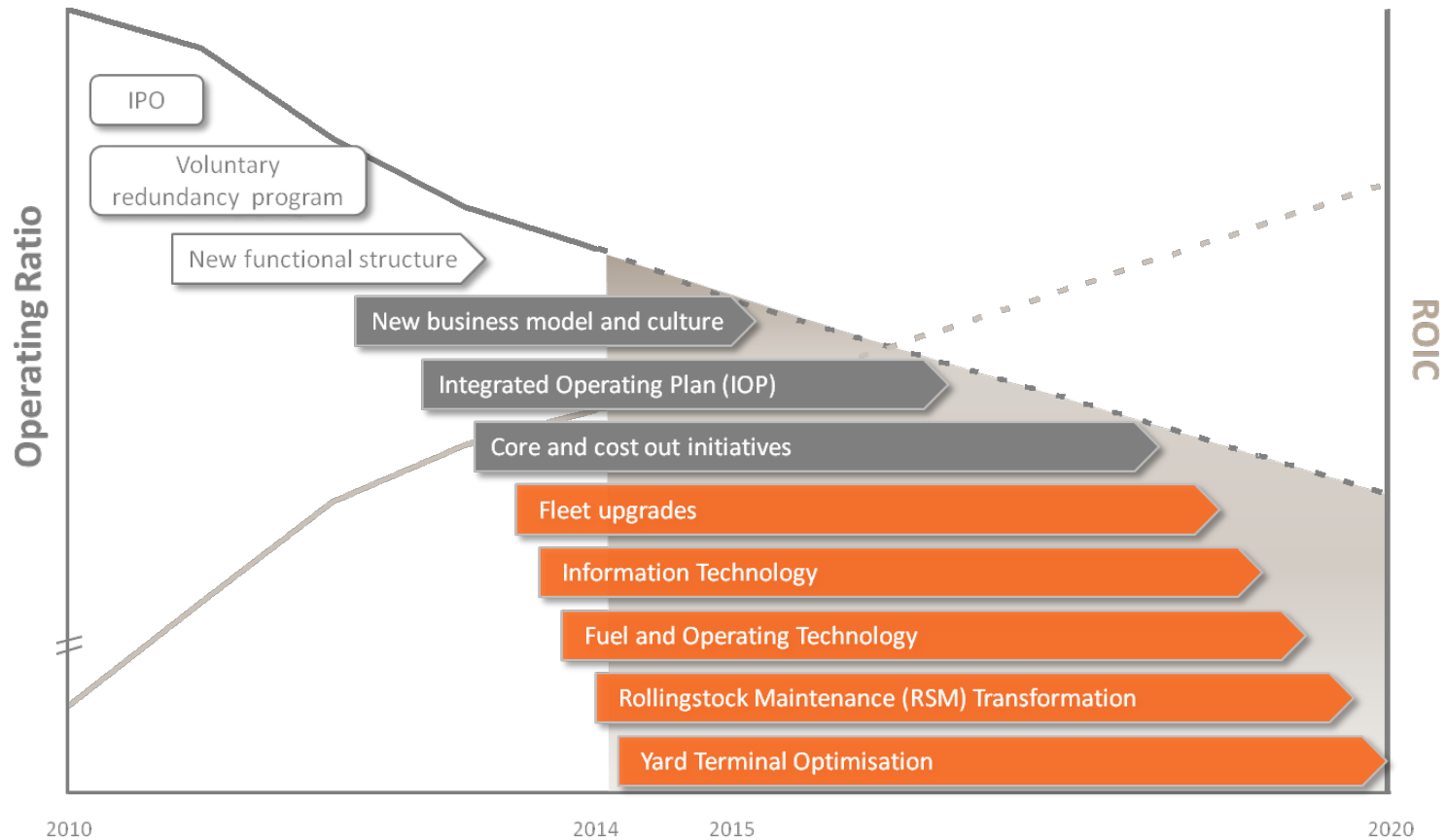
■ 1st Milestone Date ■ 2nd Milestone Date

Above Rail Operations

Mike Franczak – EVP Operations

A range of identified operational improvements will drive margins and ROIC past near term annual targets

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Transformational capital is a critical component of the multi year spend and improvement plan

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Transformational



- Information technology (FMT¹)
- Fuel and operating technology
- Rollingstock Maintenance transformation
- Yard terminal optimisation

~\$300M

Renewal



Upgrading

- Fleet upgrades
 - Improved fleet ratios (i.e. 3 AC electrics for 5 DC electrics)
 - Lease replacements
 - Fleet modernisation and standardisation

~\$250M



Basic

- Rollingstock overhauls
- Facility and yard investment

~\$250M

Growth



- Fleet expansion
- Facilities expansion

~\$300M

Operations capital spend over the next three years

Benefits of transformational capital to drive annualised run rate of ~\$60m by FY18. Average payback within 5 years



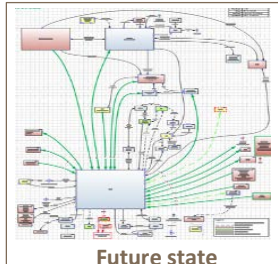
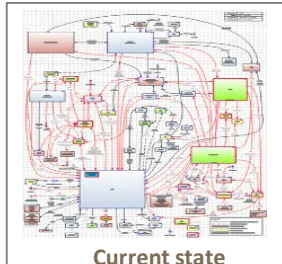
1. FMT = Freight Management Transformation
 Note: Capital figures shown are for FY15 – FY17 and exclude capitalised interest

FMT- Technology is helping Aurizon re-engineer its contract to cash process to drive leading edge improvements

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What is FMT?

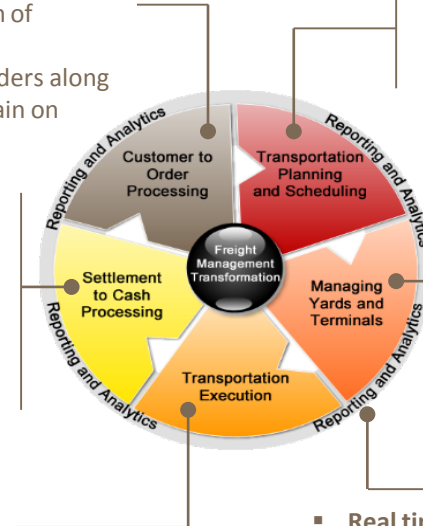
- A **world class** 'Transportation Management Solution' with end to end visibility across the supply chain
- Will replace 18 legacy systems with a single integrated platform
 - Existing systems are end of life, expensive to maintain and in critical need of replacement



- Introduces a streamlined order-execution process across the nation (single source of truth)
 - Will standardise business processes across the business
- Initial roll out in North-West Queensland is currently scheduled for mid 2015
 - Full national roll out is anticipated in 2016

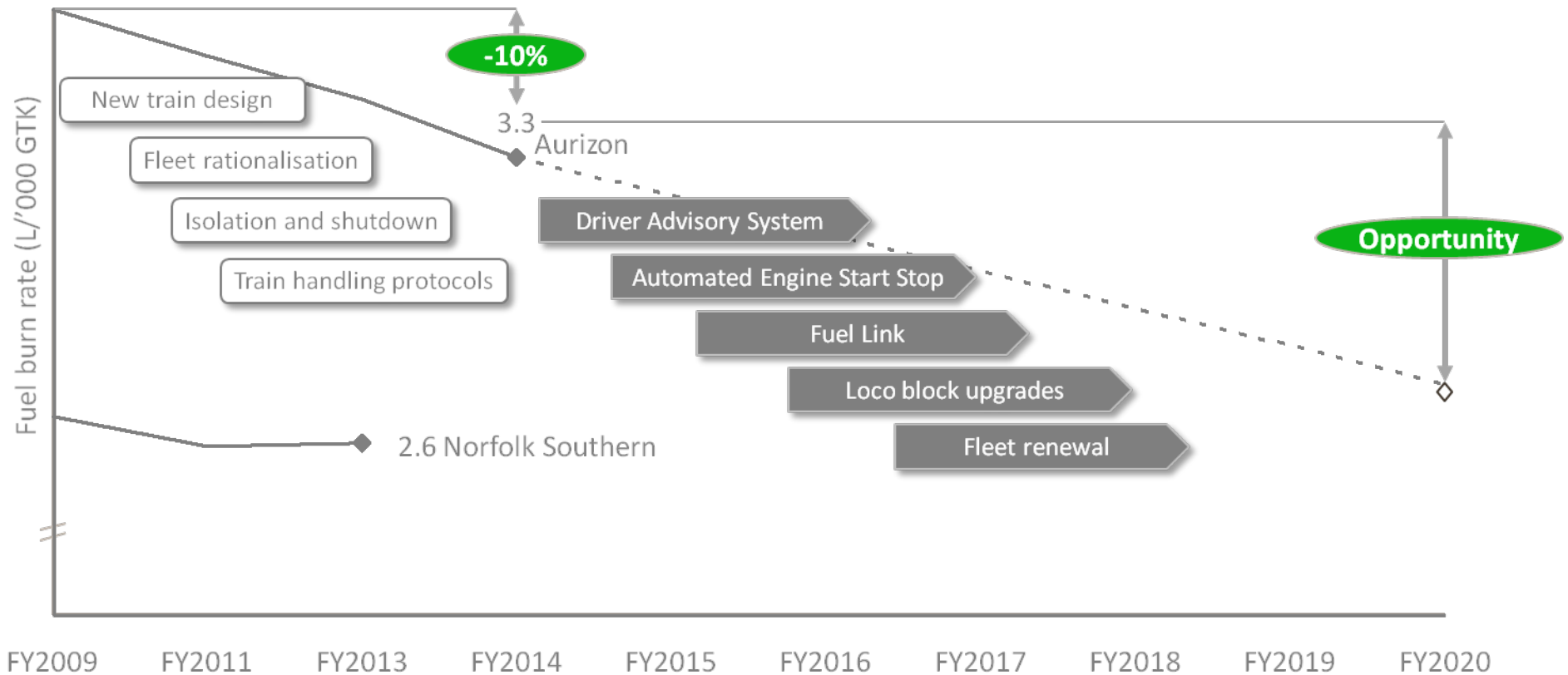
Benefits of FMT

- **Self-service customer portal**
 - Standard business processes resulting in a rationalisation of resources
 - Visibility of orders along the supply chain on demand
- **Simplified settlement to cash process**
 - Improved revenue quality
 - Standardised and timely billing process
- **Real time data on performance and status of services**
 - Ability to prioritise services based on operational data to maximise financial gain
 - Ability to accurately estimate delivery and pick up times
- **Nationwide view of services, performance and plans**
 - Schedules available in advance
 - Improved operational planning (reduction in turnaround time, fewer shifts and fewer labour hours)
- **Improved yard and terminal productivity**
 - Enhanced planning and scheduling
 - Elimination of manual processes
- **Real time reporting and analytics nationwide**
 - Standard suite of reports supporting more informed decision making and increasing operational efficiencies
 - Assist Aurizon to meet customer demand



Aurizon will continue to improve fuel consumption towards Class 1 levels

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Four key initiatives will drive consumption rates to class 1 levels

Driver Advisory System (DAS)



What is it?

- On-board technology that provides real time information to drivers
- DAS currently equipped to 99% of lead locos in Queensland fleet

Benefits

- Safety and fuel benefits by maintaining correct speed profile for set section run times
- Better handling of trains with more awareness of fuel consumption

Locomotive Block Upgrade



What is it?

- Retrofitting proven technologies to existing locomotive fleet

Benefits

- Improvements in fuel usage and maintenance by smoother brake and throttle use
- Provides accurate information of consists

Fuel Link



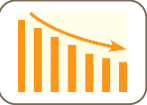
What is it?

- Live data on locomotives enabling better performance management
 - Notch
 - Speed
 - Fuel levels

Benefits

- Standardisation of driver methodology
- Improves driver fuel awareness
- Compliance to engineering directives
- Reduces fuelling events

Auto Engine Start Stop (AESS)



What is it?

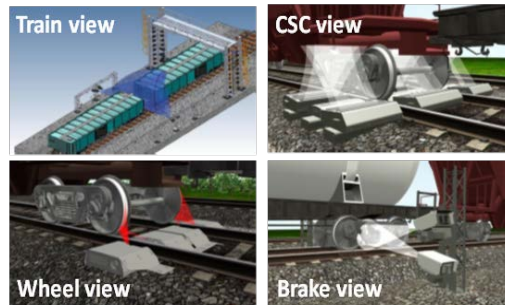
- Automatic shut down of a locomotive when a predetermined idle time has been exceeded

Benefits

- Reduced idling when not in use
- Reduced fuel consumption
- Safety enhancements

Key initiatives in the Rollingstock Maintenance transformation are underway

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- Facilities rationalisation
 - Policies and practices
 - Materials reduction
 - Labour reduction
 - In train repair
 - Focus on reliability and availability
-
- 3 wheel shops to 1 highly automated shop in Qld
 - ~\$10m per annum opex savings
 - 159 wheels per annum per FTE to 500 wheels per annum per FTE
-
- More productive workforce – finders become fixers
 - Maintenance regime changes from reactive, prescriptive to predictive and condition-based
 - Improved safety, productivity, capacity and unit costs

Let's have a look...

Equipment condition monitoring changes the way we work and improves service, safety and productivity

Condition monitoring key facts

- RSM currently executes a time based maintenance program
 - Rollingstock must be stopped and physically examined
 - Maintenance issues are only identified during these physical examinations

- Condition monitoring technology will automatically inspect Rollingstock each cycle and predict when component failures will occur
 - Maintenance and on train repairs will be driven through predictive analysis
 - Maintenance resources are better utilised to improve service and quality



Physical Inspections



- Reduces the requirement for physical inspections of wagons

Materials



- Improves component utilisation, and reduces associated footprint

Assets



- Improves asset reliability and availability

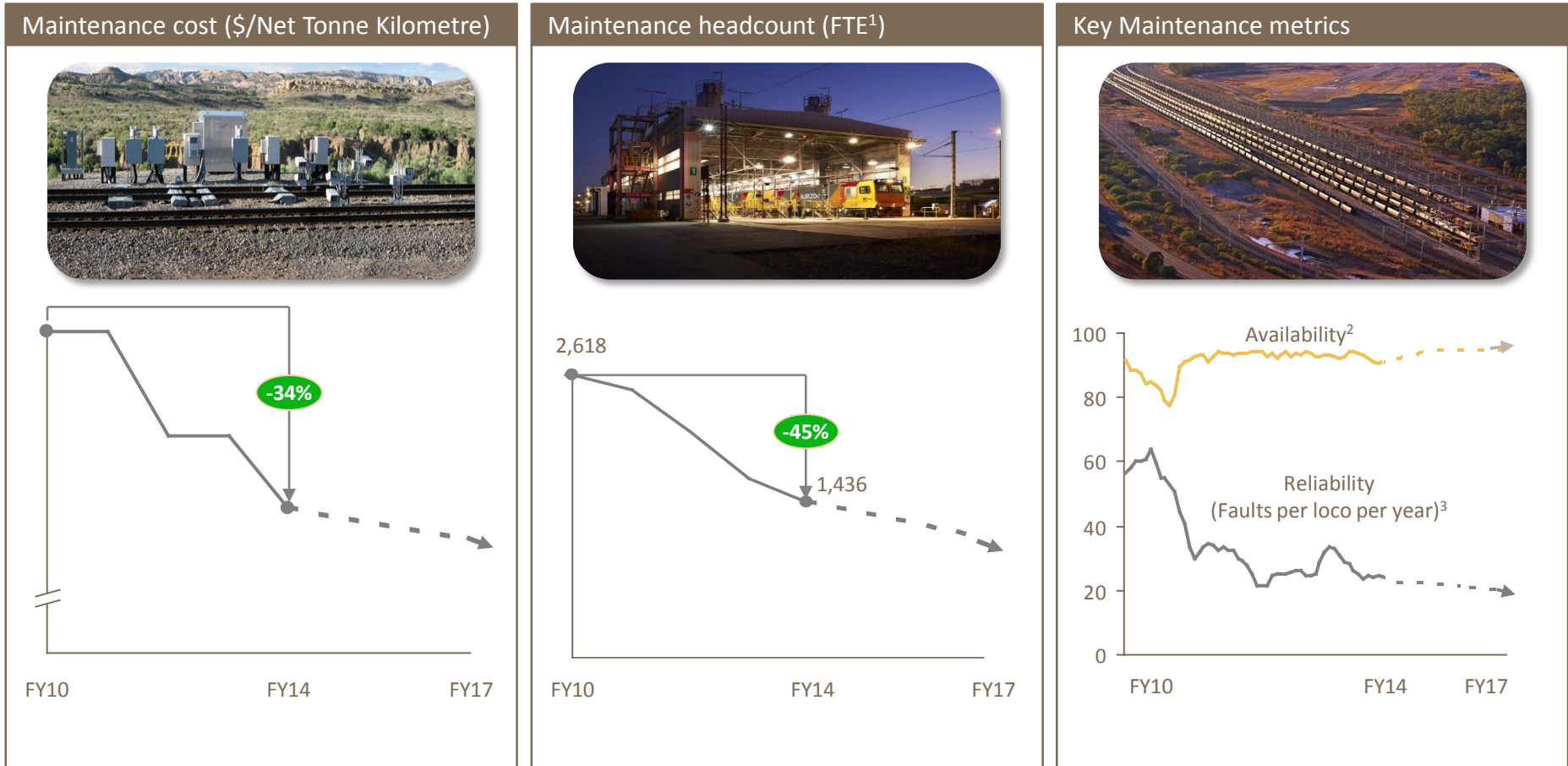
In service failures



- Reduces likelihood of in service failures and improves customer service

Investment in Rollingstock Maintenance transformation to drive improvement in core metrics

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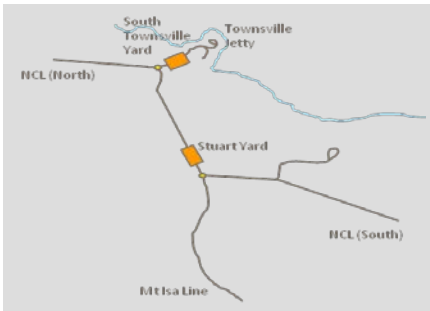
1. FTE = Full Time Equivalent

2. Availability metric reference left axis in whole numbers. Is illustrative of a specific locomotive class (3700/3800s) in Goonyella and Blackwater systems

3. Reliability metric reference left axis in %. Is illustrative of a specific locomotive class (3700/3800s) in Goonyella and Blackwater systems

Targeted capital investment in our IOP and reduced terminal footprint delivers improved value

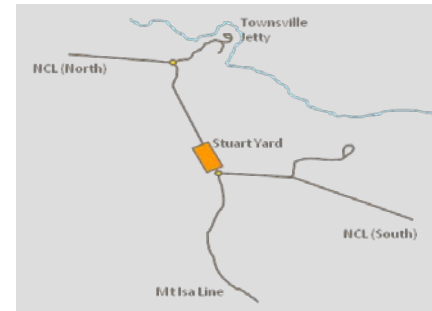
Capital requirement to maintain **current state** with minimal benefit



Requirements

- Significant maintenance spend to continue operations ✘
 - Renewal of expiring track, turnouts and hardstand
 - On going treatment of landfill and drainage
- Limited ability for growth ✘
- Minimal technology improvements ✘
- Short trains, excessive shunting ✘

Additional investment will enable step change in improvement for **future state**



Outcomes of consolidation

- Provides operational benefits - reduce shunting, transfers between yards ✔
- Ability to run longer trains ✔
- Supports future growth ✔
- Reduced dwell time ✔
- Improved productivity via technology improvements ✔
- Reduced network access costs ✔

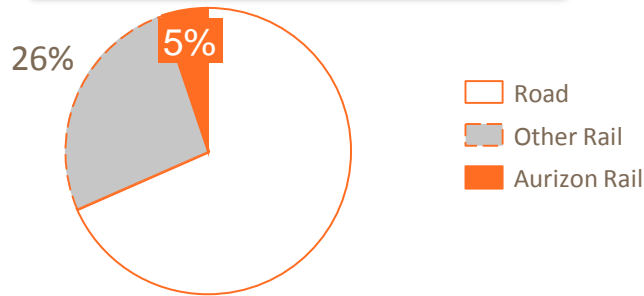
The IOP and other programs are improving unit costs and capacity in our Intermodal business

Aurizon Intermodal business



- National reach
- Example:
 - With a **flat cost base** and **reduced assets**, the Integrated Operating Plan (IOP) is delivering:
 - Reduced Sydney – Perth transit times (-20%)
 - Increased North – South services (+20%)
- Creates capacity to facilitate growth opportunities

Intermodal market



Total market size¹ ~\$8.84B

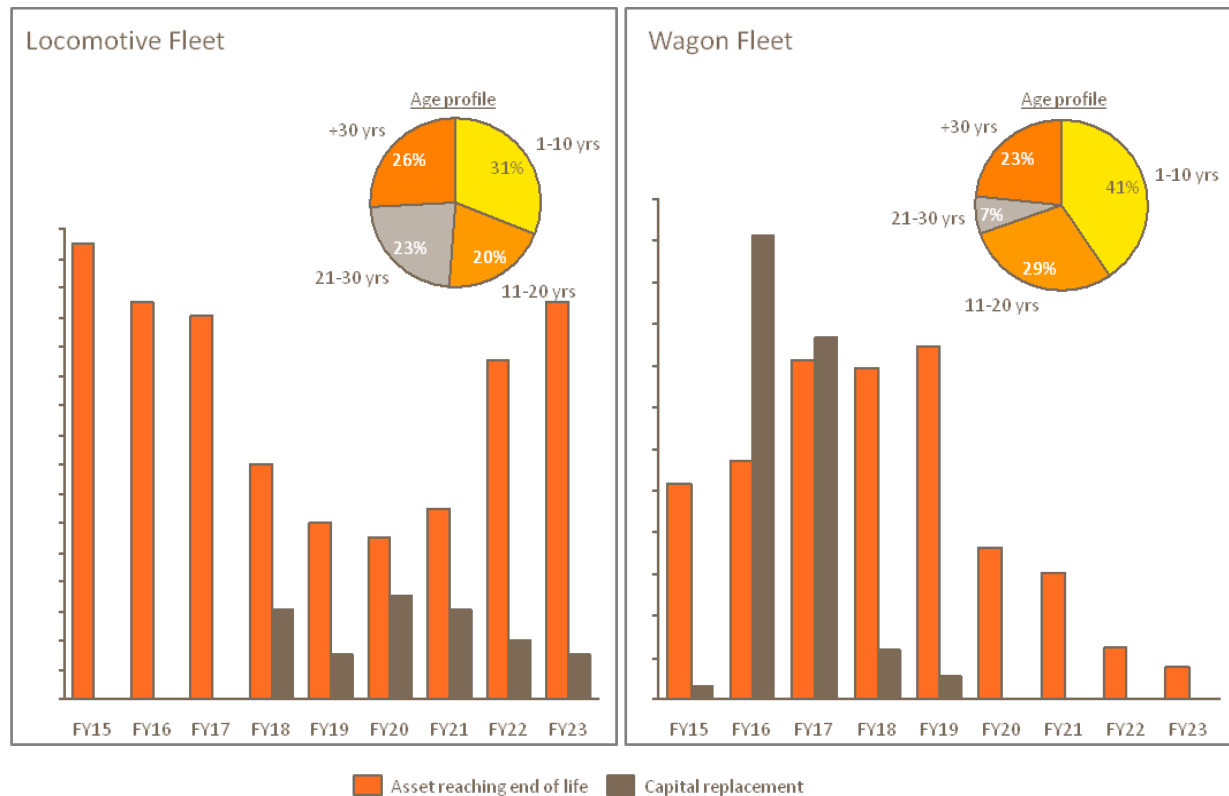
- Aurizon to drive further improvements in unit costs and capacity through:
 - Freight Management Transformation (FMT)
 - Rollingstock Maintenance transformation
 - Fuel
 - Terminal improvements

1. Based on road and rail modes of Intermodal freight transport; excludes sea freight

IOP, fleet modernisation and standardisation will lower basic replacement requirements below attrition rate

Aurizon's fleet retirement and replacement profile

Insights



- Aurizon's fleet has an age profile that requires overhaul or replacement in the upcoming years
- Operational efficiencies driven by the IOP have lowered replacement requirements below attrition rate
- Overhaul and fleet replacement will drive significant operational benefits through modernisation, standardisation, improved HP per tonne and lower maintenance requirements
- Aurizon will continue to assess investment decisions subject to returns and commercial arrangements including evaluation of life extensions, overhaul or replacement

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Q&A



Investor Briefing – Driving Value

Day 1 – 27 October 2014



Investor Briefing – Driving Value

Day 2 – 28 October 2014

Agenda

1

Performance of Aurizon Network Operations

VP Network Operations – Clay McDonald

2

Network Planning, Scheduling and Execution

GM Network Operations, Central Queensland Coal Network – Sarah Dixon

3

Control Centre Tour

Control Centre Manager – Darryl Johnson

About Aurizon Network

- Controls, manages, operates and maintains the fixed rail infrastructure “below rail” assets of the Central Queensland Coal Network (CQCN)
- CQCN is regulated by the Queensland Competition Authority (QCA)
- Regulatory framework is designed to provide OPEN access to accredited rail operators
- Facts and figures in this presentation relate to all “accredited rail operators and not just Aurizon”



Performance of Aurizon's Network Operations

Clay McDonald – VP Network Operations

Central Queensland Coal Network Fast Facts

Assets	Blackwater	Moura	Goonyella	Newlands	CQCN
Track (km)	1,110	260	980	320	2,670km
Electrified track	965	0	980	0	1,945km
Rail	2,220	520	1,960	640	5,340km
Turnouts	512	45	353	81	975 T/O
Culverts	1,600	450	1,100	593	3,743
Bridges	154	37	63	32	286
Sleepers	1.83	0.43	1.62	0.53	4.4 million



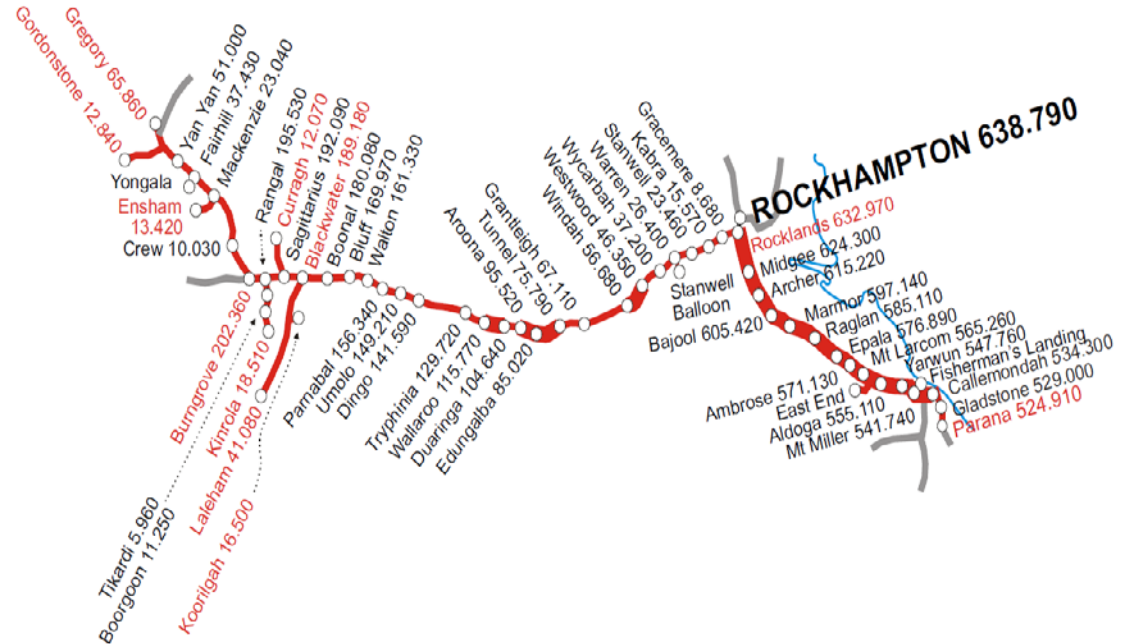
Blackwater system overview

System consists of:

- 14 mines
- 2 export coal terminals
- 4 domestic unload locations
- 335 kilometres (208 miles) of single line track
- 242 kilometres (150 miles) of duplicated track

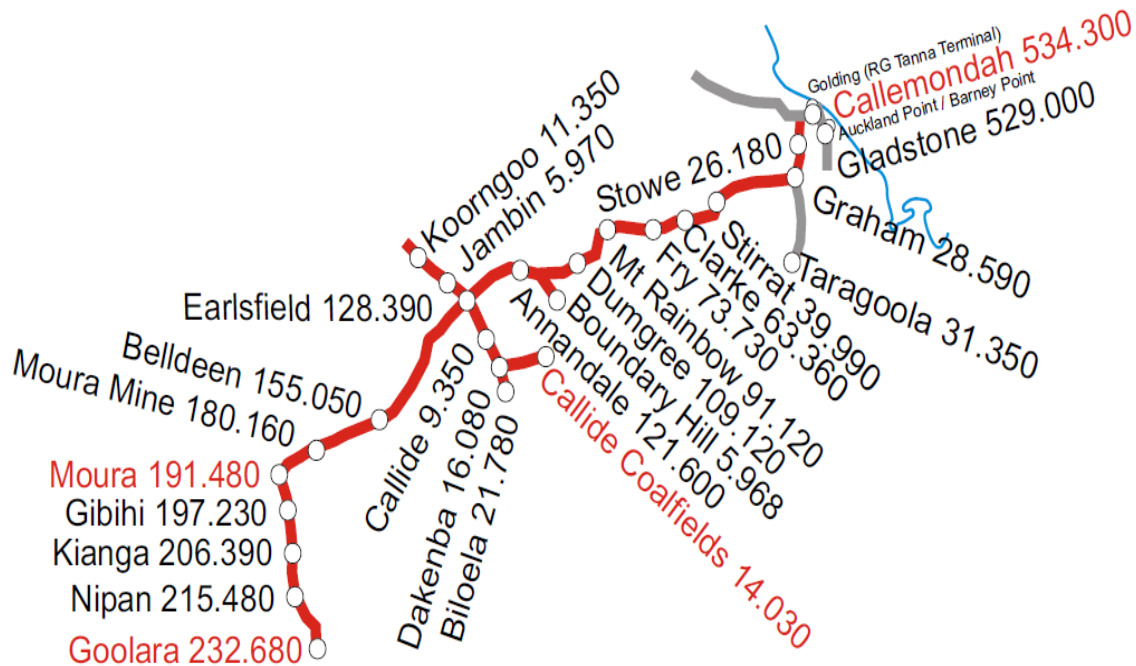
Average train size is 4 locomotives and 99 wagons hauling 8,040 tonnes of coal

From FY2010 to FY2014, average payload increased in Blackwater by 7% with longer train consists a key contributor to this.



	WEEKLY TRAINS	WEEKLY TONNES	WEEKLY CYCLE TIME
FY2014 AVERAGE	157	1.27	25.78
FYTD2015 AVERAGE	154	1.24	26.08
RECORD	177	1.45	23.03

Moura system overview



System consists of:

- 4 mines
- 2 export coal terminals
- 4 domestic unload locations
- 266 kilometres (165 miles) of single line track

Average train size is 3 locomotives and 83 wagons hauling 6,000 tonnes of coal

From FY2010 to FY2014 average payload increased by 27% in Moura

	WEEKLY TRAINS	WEEKLY TONNES	WEEKLY CYCLE TIME
FY2014 AVERAGE	38	0.23	16.94
FYTD2015 AVERAGE	41	0.25	17.01
RECORD	64	0.35	15.04

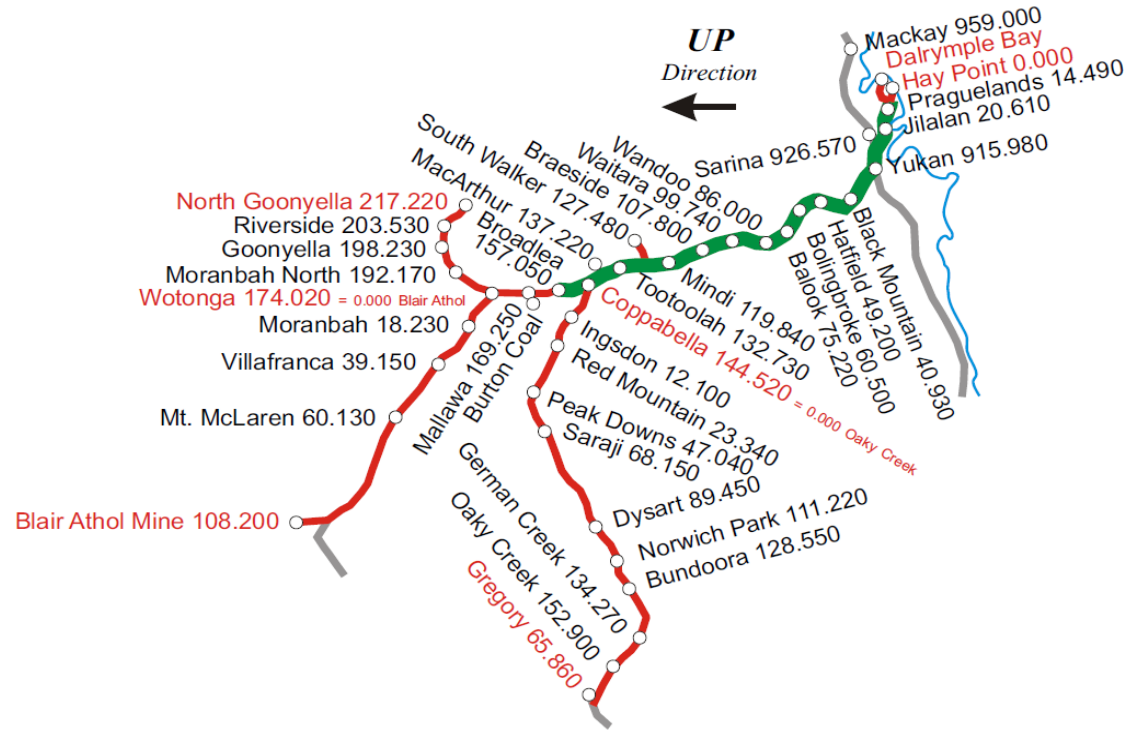
Goonyella system overview

System consists of:

- 20 mines
- 2 export coal terminals
- 1 domestic unload location
- 634 kilometres (394 miles) of duplicated track

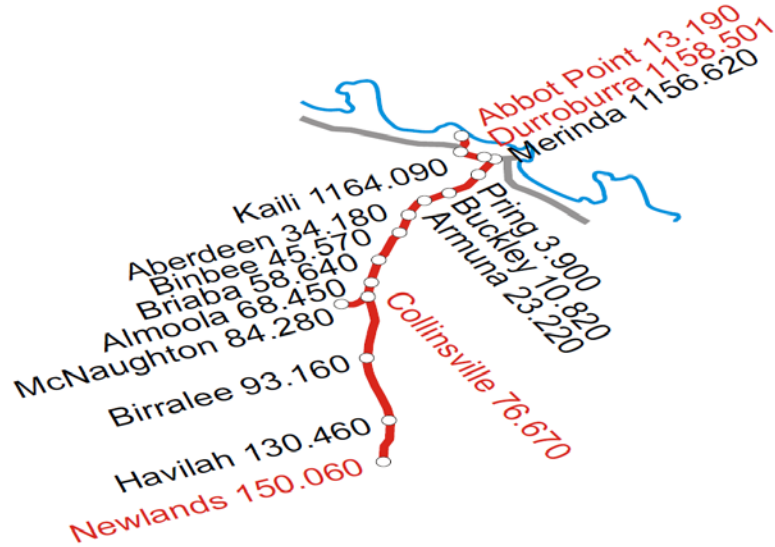
Average train size is 3 locomotives and 120 wagons hauling 9,820 tonnes of coal

From FY2010 to FY2014 average payload increased by 2% in Goonyella



	WEEKLY TRAINS	WEEKLY TONNES	WEEKLY CYCLE TIME
FY2014 AVERAGE	214	2.10	18.67
FYTD2015 AVERAGE	217	2.15	18.27
RECORD	268	2.63	16.61

Newlands system overview



System consists of:

- 4 mines
- 1 export coal terminal
- 3 domestic unload locations
- 187 kilometres (116 miles) of single line track
- Includes Goonyella to Abbott Point Expansion (GAPE)

Average train size is 3 locomotives and 81 wagons hauling 6,500 tonnes of coal

From FY2010 to FY2014 average payload increased by 35% in Newlands, excluding GAPE.

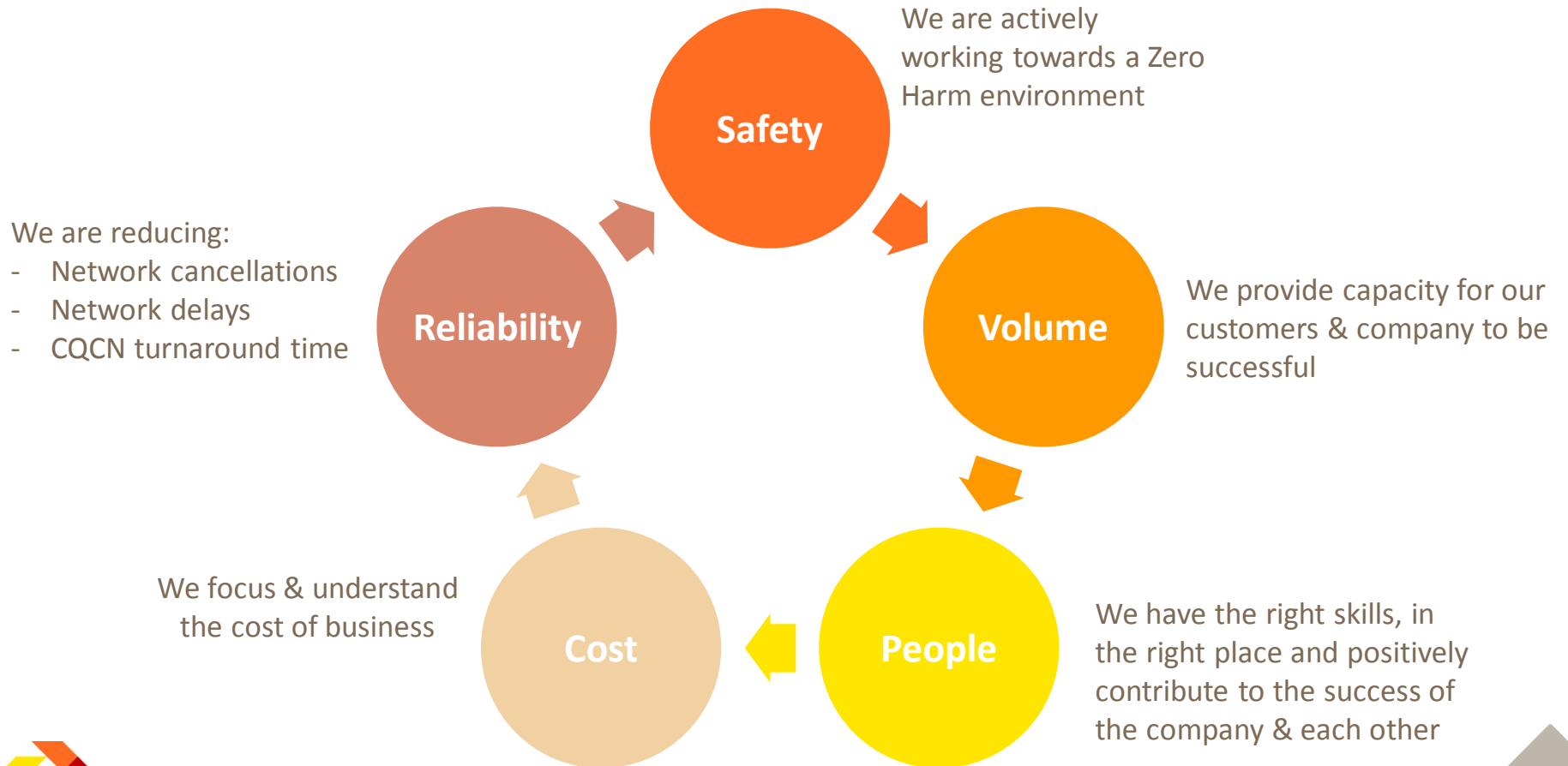
	WEEKLY TRAINS	WEEKLY TONNES	WEEKLY CYCLE TIME
FY2014 AVERAGE	71	0.46	18.57
FYTD2015 AVERAGE	92	0.59	18.77
RECORD	98	0.64	15.08

Network Operations on a page

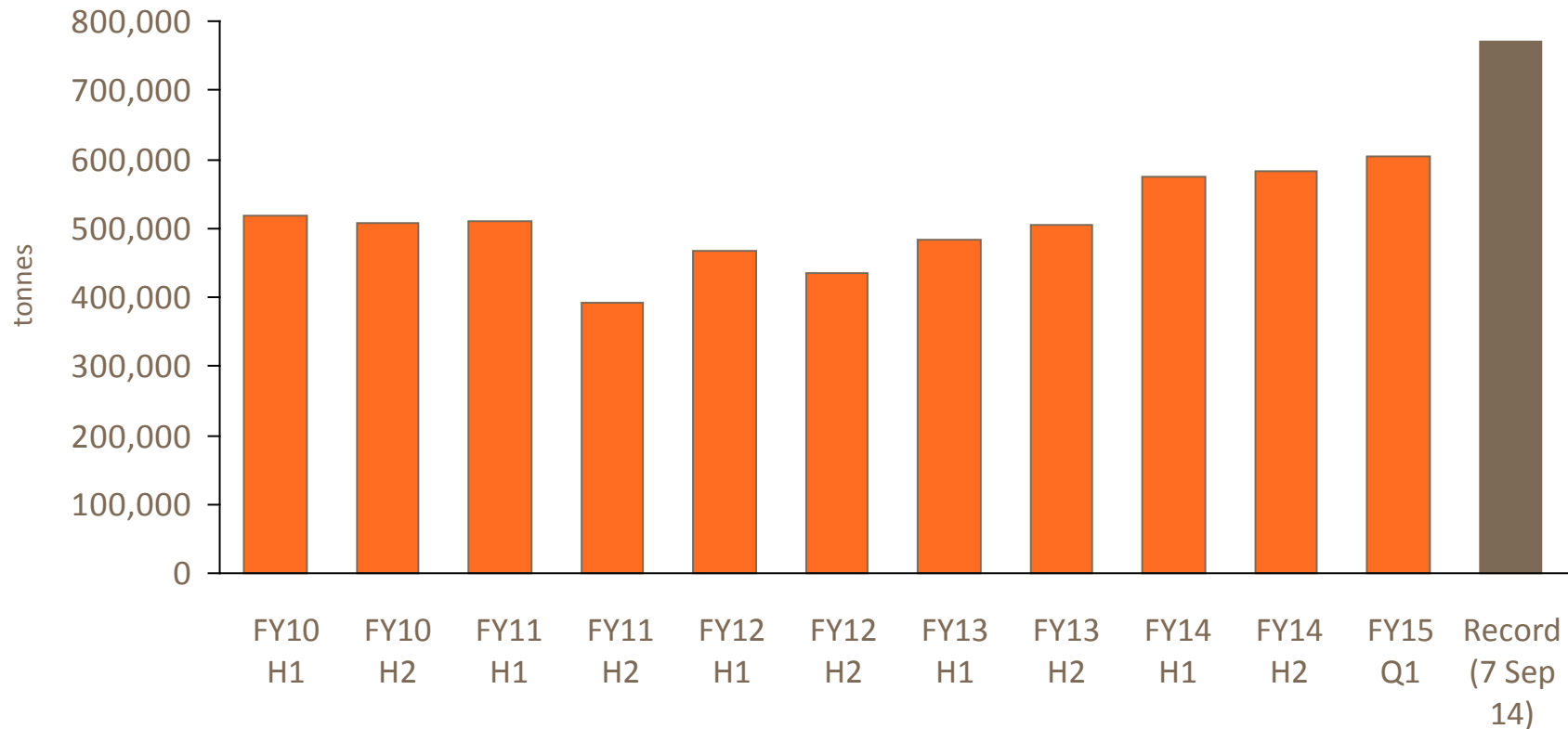
Teams	Responsibilities	KPIs	Projects and Initiatives	Value Add
Asset Management	<ul style="list-style-type: none"> Maintenance and Renewals Assurance Strategy for Civil, Signals, Telecoms and Electrical assets 	<ul style="list-style-type: none"> Delays > 15 mins Capital program 	<ul style="list-style-type: none"> Network Asset Management System (NAMS) Track Recording Vehicle (TRV) 	Increased Network Utilisation
Maintenance	<ul style="list-style-type: none"> Infrastructure, Signals, Traction, Control and Communications Systems Extreme weather preparation Preventative maintenance 	<ul style="list-style-type: none"> Maintenance \$ per NTK Cancellations Speed restrictions 	<ul style="list-style-type: none"> Track Access System (TAS) Electric Lubricators Remote Monitoring Devices Mechanisation 	Increased Network Availability
Plant	<ul style="list-style-type: none"> Resurfacing Ballast Cleaning Maintenance of Plant 	<ul style="list-style-type: none"> SPADs² Derailments Scope & Cost 	<ul style="list-style-type: none"> Fleet Replacement Program Off-Track Initiatives Ballast Veneering Ballast Recycling 	Unlocking Network Capacity
Planning	<ul style="list-style-type: none"> Strategic system planning System planning principles Closure optimisation 	<ul style="list-style-type: none"> Utilisation of Capacity 	<ul style="list-style-type: none"> Possession Assessment and Capacity Evaluator (PACE) Adjacent Maintenance Activities 	Ongoing Cost Efficiencies
CQCQ Operations³	<ul style="list-style-type: none"> Control Centre management Critical capacity planning Scheduling of access paths Performance analysis 	<ul style="list-style-type: none"> Scheduled to Completed Services % Velocity 	<ul style="list-style-type: none"> Advanced Planning and Execution System (APEX) Optimal Mine-Port Scheduling 	

Network Operations Key Focus Areas

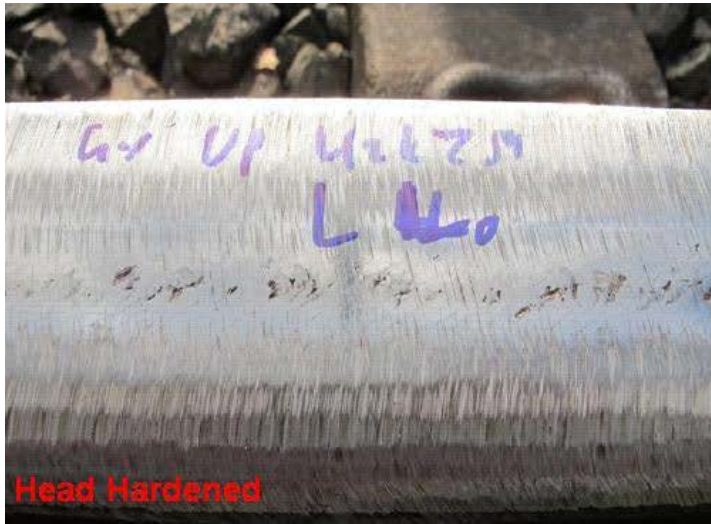
Deliver maximum system through-put at the lowest total cost of operation both safely & sustainably



Focusing on Improving the Run Rate¹



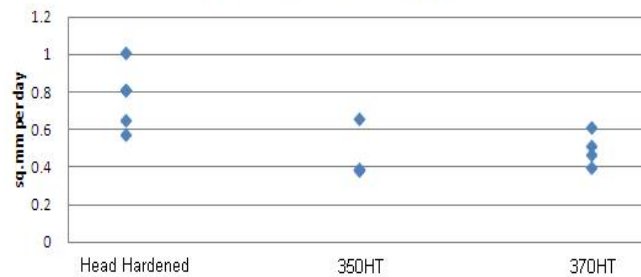
Less wear, longer life – New Rail



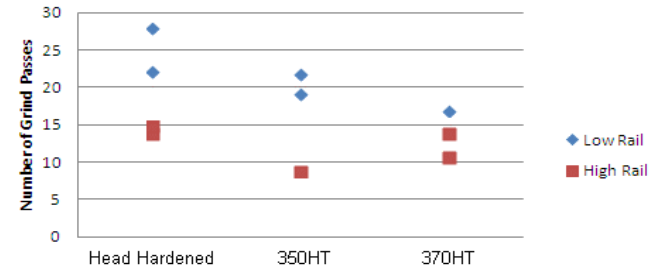
Network expects to achieve a 15% reduction in the total cost of ownership of its rail assets in Central Queensland as a result of the superior performance of the new rail



Area Loss Wear Rate



Grinding Effort Required



Innovative sleeper design

Traditional Timber and Concrete Sleepers

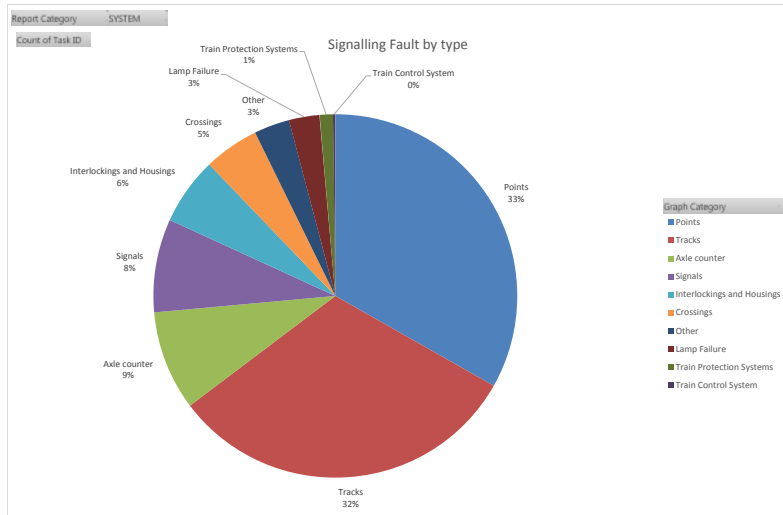


- Allows like-for-like replacement of timber turnouts
- Improved total cost of ownership:
 - Greater service life
 - Lower maintenance requirements
 - Stronger and more consistent engineering properties
 - Easier to procure for turnout lengths required
 - Manufactured to exact dimensions required
 - Can be drilled and cut like timber allowing existing fixings to be used
 - Lighter than concrete allowing simpler and safer lifting plans

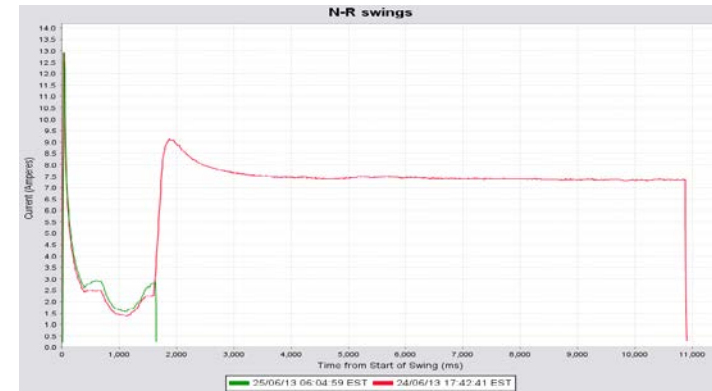
Composite Sleepers



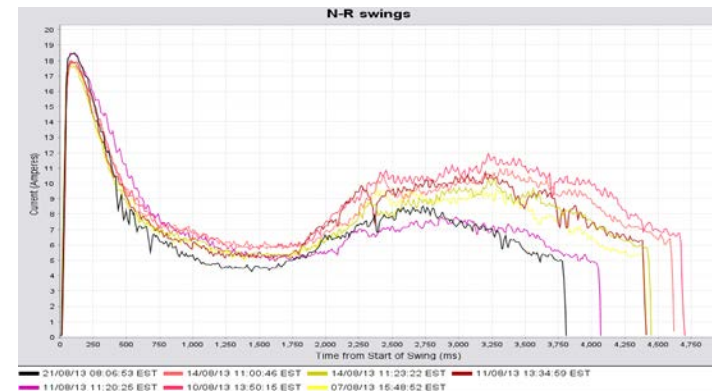
Remote Points Monitoring



JB11C SNX current draw - Red (stone in rodding), Green (stone removed)



Several current draw events from BR8A points showing bad ballast conditions



Operational Technology – Supersite Program

- Site to include:
 - Wheel impact detectors
 - Inline weighing system
 - Hot and cold bearing detectors
 - Pantograph monitor
 - Below rail predictive equipment



Supersite Location

WILD (Wheel Impact Load Detector Client Screen) ->

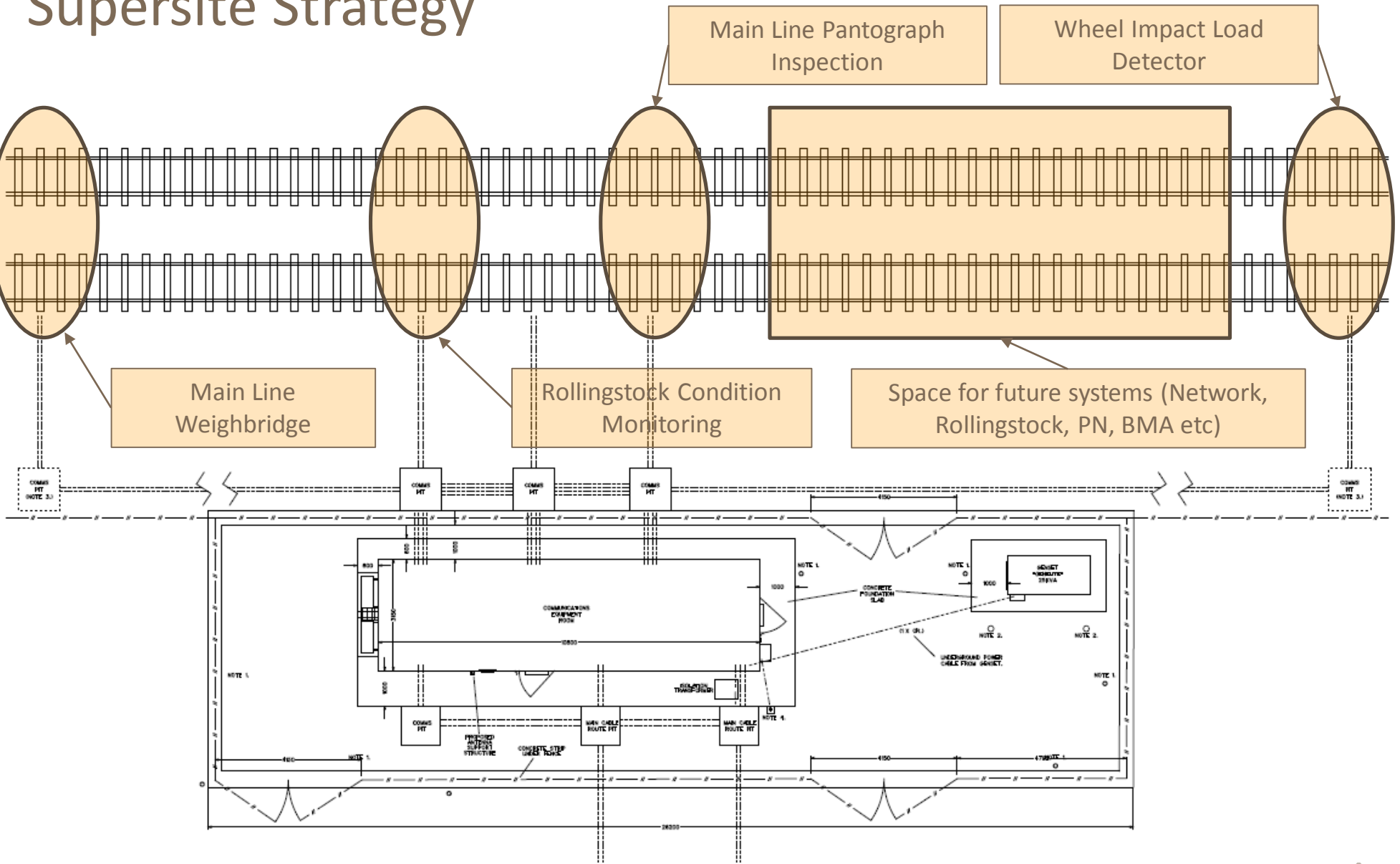
ROCKHAMPTON FCC

Site Status
 Witsonga Down HBD/HWD, km 173.8
 Line: Gyrovelia Line
 Type: PhoenixMB
 ID: 10.3.2
 System: OK
 HBD 1, HBD 2, HWD 1, HWD 2, RC1, RC2, RC3, RC4
 Ambient Temperature: 29.00 °C Cabinet Temperature: 29.00 °C
 Block: Set out of service

Recent Train List

AI	ET	Arrival	Departure	Lead Vehicle	Location	Direction	Total Axles	Total Vehicles	Average Speed	Level
		2014-07-25 14:59:43	2014-07-25 15:01:15	QDEL 4129	Briaba HBD/HWD	Up	346	85	57.50 km/h	1.0
		2014-07-25 15:46:33	2014-07-25 15:47:52	QDEL 4103	Briaba HBD/HWD	Down	346	85	68.00 km/h	1.0
		2014-07-25 16:04:49	2014-07-25 16:05:58	LOCO 8345	Eaglefield Creek HBD/HWD	Down	346	85	77.50 km/h	1.0
		2014-07-25 16:10:30	2014-07-25 16:12:07	QDEL 4129	Cocklehat HBD/HWD	Up	346	85	65.00 km/h	1.0
		2014-07-25 16:21:20	2014-07-25 16:21:29	Unknown	Witsonga Up HBD/HWD	Down	4	1	65.00 km/h	1.0
		2014-07-25 16:29:01	2014-07-25 16:29:13	Unknown	Witsonga Down HBD/HWD	Up	4	1	23.00 km/h	1.0
		2014-07-25 16:44:05	2014-07-25 16:44:12	Unknown	Witsonga Up HBD/HWD	Down	4	1	63.00 km/h	1.0
		2014-07-25 16:45:42	2014-07-25 16:48:08	LOCO 8345	Leichhardt Range HBD/HWD	Down	346	85	62.50 km/h	1.0
		2014-07-25 16:41:51	2014-07-25 16:53:43	DEF 3965	Witsonga Up HBD/HWD	Up	514	977	70.50 km/h	2.0
		2014-07-25 17:26:48	2014-07-25 17:29:07	QDEL 4116	Cocklehat HBD/HWD	Down	346	85	40.00 km/h	1.0
		2014-07-25 17:52:25	2014-07-25 17:53:41	QDEL 4106	Briaba HBD/HWD	Up	354	87	69.00 km/h	1.0
		2014-07-25 18:38:19	2014-07-25 18:38:32	LOCO 7103	Witsonga Down HBD/HWD	Down	498	123	65.00 km/h	1.0

Supersite Strategy



Improved mechanisation – leading to velocity improvements



Network Planning, Scheduling & Execution

Advanced Planning and Execution System (APEX)

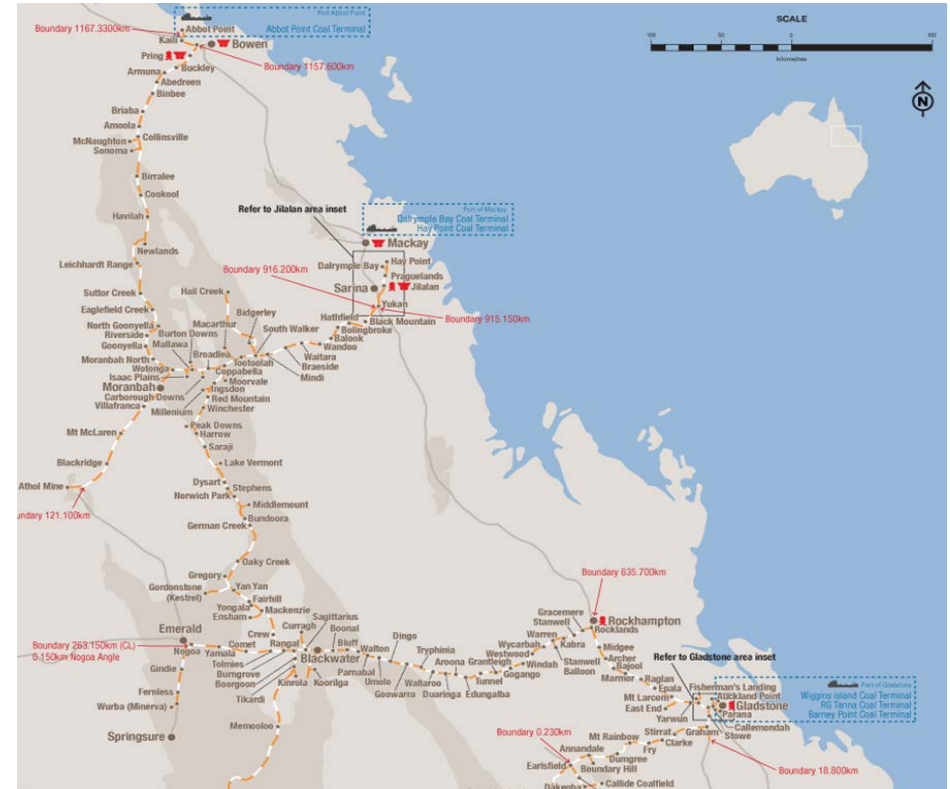
Sarah Dixon – GM Network Operations CQCN

Presentation outline

- 1 Managing Australia's largest export rail network
- 2 Network Operations CQCN on a page
- 3 Network Operations CQCN strategy and vision
- 4 Network Operations CQCN activities 7 outcomes
- 5 Planning and scheduling
- 6 Day of Operations
- 7 Business systems and improvement
- 8 Recent transformation
- 9 APEX: Implementing tool to provide benefits for the entire coal supply chain

Managing Australia's largest export rail network

- Managing track access to 2,700km of rail network with 1,800kms of overhead equipment
- Loading at 44 mines
- Delivering to 5 export coal terminals and 7 domestic customers
- Communicating with 6 Rail Operators
- 5 year tonnage profiles showing continued growth
- Customers actively seeking opportunities to improve their supply chain outcomes
- Increased complexity (greater mine/ port combinations) and volumes
- Reducing windows for maintenance and renewals



A growing and increasingly complex supply chain requires investment in people, processes and tools.

Network Operations CQCN on a page

Teams	Responsibilities	KPIs	Transformation	Value Add
Planning & Scheduling	<ul style="list-style-type: none"> 4 x 6 month Closure Calendar and Capacity Forecast Alignment of maintenance activities across supply chain Scheduling of services 	<ul style="list-style-type: none"> Utilisation of capacity 	<ul style="list-style-type: none"> Planning Reset Process Review APEX¹ Planning & Scheduling module 	Increased Network Utilisation
Day of Operations (DOO)	<ul style="list-style-type: none"> Execution of plan in live run Safeworking standards for train operations Incident management for CQCN 	<ul style="list-style-type: none"> DOO losses Cancellations 	<ul style="list-style-type: none"> Business Execution Rules Simulator APEX Movement Planner Foundation and Advanced modules 	Improved Performance to Plan
Business Systems	<ul style="list-style-type: none"> Performance review and monitoring for CQCN Opportunity identification Implementation of operational improvements 	<ul style="list-style-type: none"> Average System Velocity 	<ul style="list-style-type: none"> CQCN Supply Chain Transformation Program APEX Business Objects reporting tool 	Unlocking Network Capacity
Business Improvement	<ul style="list-style-type: none"> Internal transformation and continuous improvement Customer and Stakeholder communications for Network Operations 	<ul style="list-style-type: none"> Customer satisfaction 	<ul style="list-style-type: none"> Network Operations CQCN Business Improvement Program 	Ongoing Cost Efficiencies



Network Operations CQCN Strategy & Vision

Network Operations CQCN Vision for FY16 is that we are valued partners in our supply chains through:



World class results that are mutually beneficial



Profitable growth by being efficient and agile in the way we deliver and predictable in what we deliver



Seamless contribution so our customers can focus on their core business as they trust us to deliver



ONE team both internally and externally, with intuitive ways to work together



A position of family to work with trust, community and resilience as we look out for each other

To achieve this vision, we consistently act in line with our five Golden Rules:



Network Operations CQCN Activities & Outcomes

Capacity Planning

Tactical Planning

Short Term
Planning

Scheduling

Day of
Operations (DOO)

Performance
Review

Main activities for Network Operations CQCN:

- Critical Asset Activity and Capacity Planning (with respect to long term capital programs, network maintenance, port availability, operator and producer requirements)
- Scheduling access paths in response to Rail Operator requested services
- Train Control Operations in live run
- Network Performance Analysis and Supply Chain facilitation
- Communication of Network Operations events and outcomes to Customers and wider Supply Chain Stakeholders



Outcomes achieved:

- Improved alignment of maintenance activities across Supply Chain service providers
- Reduced capacity impact from planned maintenance and renewals
- Improved delivery to plan and reduced day of operations losses
- Continued management of supply chain improvement programs across CQCN
- Increased engagement with Rail Operators to identify and implement opportunities to improve velocity and volume throughput

Planning & Scheduling

Team size:

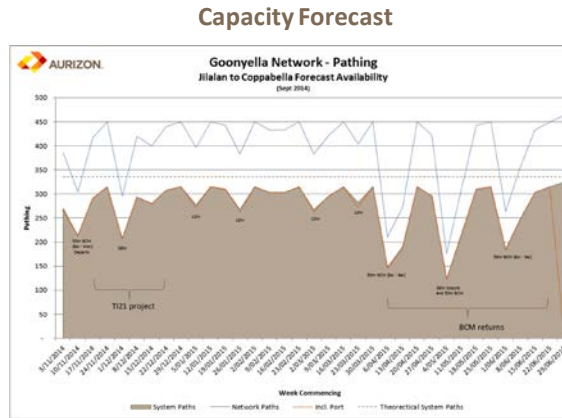
- 23 staff in Mackay and Rockhampton

Planning Horizons:

- Long term (1 - 2yrs);
- Tactical (6mths - 21days); and
- Short term (21 day, 7 day, 48 hrs & 24 hrs)

Main Activities:

- Balancing track possession bids from Network Growth, Renewal & Maintenance Infrastructure Programs with demand forecasts from customers
- Providing pathing availability to Rail Operators
- Optimising throughput and minimising variation through System Rules
- Negotiation process for contested pathing (Access Undertaking Schedule G)
- Producing Train Diagrams that consider crossings, crew changes, loading, unloading, stows, dwells
- Review of Plan effectiveness with Day of Operations to identify areas for improvement



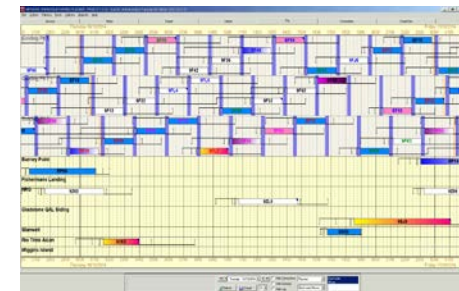
Weekly Path Availability

Scheduling Summary WC 22/09/2014 Version 1
Closed 15/09/2014

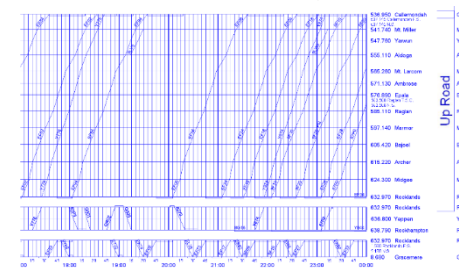
Loaded Path Availability - District of Gympie 22/09/2014

Path Name	Key Time	Arr. Date	End	Start	End	Start	End	Start	End	Start	End
W001	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W002	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W003	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W004	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W005	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W006	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W007	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W008	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W009	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W010	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W011	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W012	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W013	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W014	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W015	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W016	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W017	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W018	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W019	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W020	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W021	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W022	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W023	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W024	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W025	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W026	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W027	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W028	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W029	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W030	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W031	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W032	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W033	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W034	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W035	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W036	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W037	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W038	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W039	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W040	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W041	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W042	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W043	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W044	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W045	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W046	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W047	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W048	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W049	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00
W050	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00	1:00

Network Operations Pathing Planner



Train Control Diagram



Day of Operations

Team size:

- 108 staff in 24/7 live run environment of Network CQCN Control Centre, based in Rockhampton
- 18 staff in Jilalan, Callemondah and Gladstone yards
- 7 staff based across CQCN

Main activities:

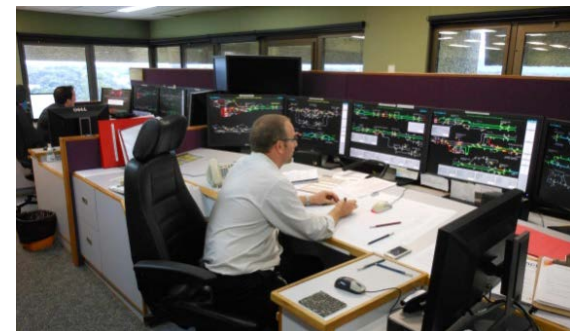
- Managing train movements and track access and possessions to plan
- Ensuring safeworking standards are enacted through live run
- Managing electrical overhead network across Goonyella and Blackwater
- Providing telemetry and signalling incident response through Fault Coordination Centre
- Managing train movements through yards
- Coordinating recovery efforts from incidents on CQCN
- Undertaking Incident Commander role in line with Aurizon Network's Crisis Management Plan
- Working with other supply chain stakeholders to identify recovery to plan in live run



Fault Control Centre



Area Controller



Consolidated Control Centre

Business Systems and Business Improvement

Team size:

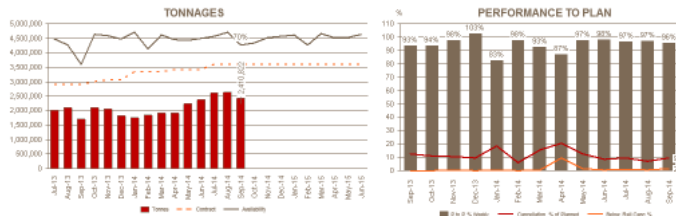
- 16 staff across Brisbane, Rockhampton and Mackay

Main activities:

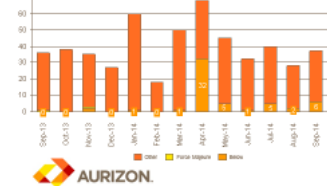
- Analysing and reporting on performance across CQCN
- Identifying opportunities to improve volume throughput or increase velocity
- Implementing change through disciplined project and program management approach
- Clear communication to customers and wider CQCN supply chain stakeholders
- Facilitating external Supply Chain forums and Improvement Programs across Supply Chain service providers

System Performance Report

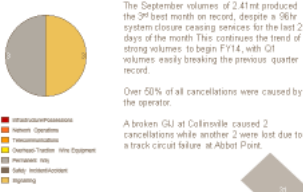
NEWLANDS - Performance



CANCELLATIONS



BELOW RAIL



Supply Chain Improvement Initiatives Report

CCCSC 81mtpa Progress Report



Project	Objective	Start Date	End Date	Start %	Progress	Issues/Risks
Waterford Harbour	Waterford Harbour Phase 2 & 3	NOV	3/30/2013	100%	●●●●●	●●●●●
Waterford Harbour	Waterford Harbour Phase 2 & 3	NOV	3/30/2013	100%	●●●●●	●●●●●
Waterford Harbour	Waterford Harbour Phase 2 & 3	NOV	3/30/2013	100%	●●●●●	●●●●●
Waterford Harbour	Waterford Harbour Phase 2 & 3	NOV	3/30/2013	100%	●●●●●	●●●●●
Waterford Harbour	Waterford Harbour Phase 2 & 3	NOV	3/30/2013	100%	●●●●●	●●●●●
Waterford Harbour	Waterford Harbour Phase 2 & 3	NOV	3/30/2013	100%	●●●●●	●●●●●
Waterford Harbour	Waterford Harbour Phase 2 & 3	NOV	3/30/2013	100%	●●●●●	●●●●●
Waterford Harbour	Waterford Harbour Phase 2 & 3	NOV	3/30/2013	100%	●●●●●	●●●●●
Waterford Harbour	Waterford Harbour Phase 2 & 3	NOV	3/30/2013	100%	●●●●●	●●●●●
Waterford Harbour	Waterford Harbour Phase 2 & 3	NOV	3/30/2013	100%	●●●●●	●●●●●



Stakeholder Communications



Central Queensland Coal Network Supersites Update

A foundation element for Aurizon Network's active management of the infrastructure asset is our increased monitoring of the interface between our asset and those of all operators on the Central Queensland Coal Network. To provide consistent and continuous as well as timely information, Aurizon Network has committed to establish 'Together' as each of the four systems within CQCN.

In determining the location of each System's Supersites, Aurizon Network considered:

- Locations where traffic would be monitored at an early stage of its loaded cycle;
- Impact on train movements to ensure no reduction in system capacity;
- Where currently implemented equipment is located; and
- Supporting infrastructure such as sidings to accommodate detachment of wagons, if required.

Table 1: Summary details for CQCN Supersites

System	Location	Start Equipment	Supporting Infrastructure
Waterford	W. Side of Waterford	Waterford Unit Detector (already installed)	Waterford Unit Detector (already installed)
Waterford	Between W. Side and S. Side of Waterford	Waterford Unit Detector	Waterford Unit Detector
Waterford	Waterford	Waterford Unit Detector	Waterford Unit Detector
Waterford	Waterford	Waterford Unit Detector	Waterford Unit Detector

Given the traffic in each of the systems, the supersites have been prioritized for implementation, with lower equipment identified. Currently plans look to have this information available to the Rail Operators through a web application as well as being provided in real time to Aurizon Network's consolidated CQCN Control Centre in Rockhampton to ensure any responsive actions are undertaken in a timely manner. Other supply chain stakeholders may also be able to access some of this information.

Figure 1: Timeline for implementation of CQCN Supersites



Initial equipment at each supersite will support monitoring of wheel impact forces to identify possible flat wheels as well as alarms for overboard bogies and compliance to Standard 71. For Goonyella and Blackwater Supersites the Asset Manager is looking into a system that could analyse the photograph to determine if carbon wear is at a critical level, to actively manage the risk of air-erosion of the canopy area, as well as providing images to the Operators of their assets.

Network Operations CQCN Transformation

Recent Transformation Activities

- Consolidation of Mackay and Rockhampton based Control Centres to form CQCN Control Centre in Rockhampton (2011)
- Consolidation of Network Operations North and South to form Network Operations CQCN with restructure of leadership, planning and business system teams (2013)
- Implementation of consistent planning tools across CQCN (2014)
- Review of Business Execution Rules and implementation across all Rail Operators and Ports (2014)
- KPI reporting to Rail Operators and Supply Chain Forums implementation (2014)

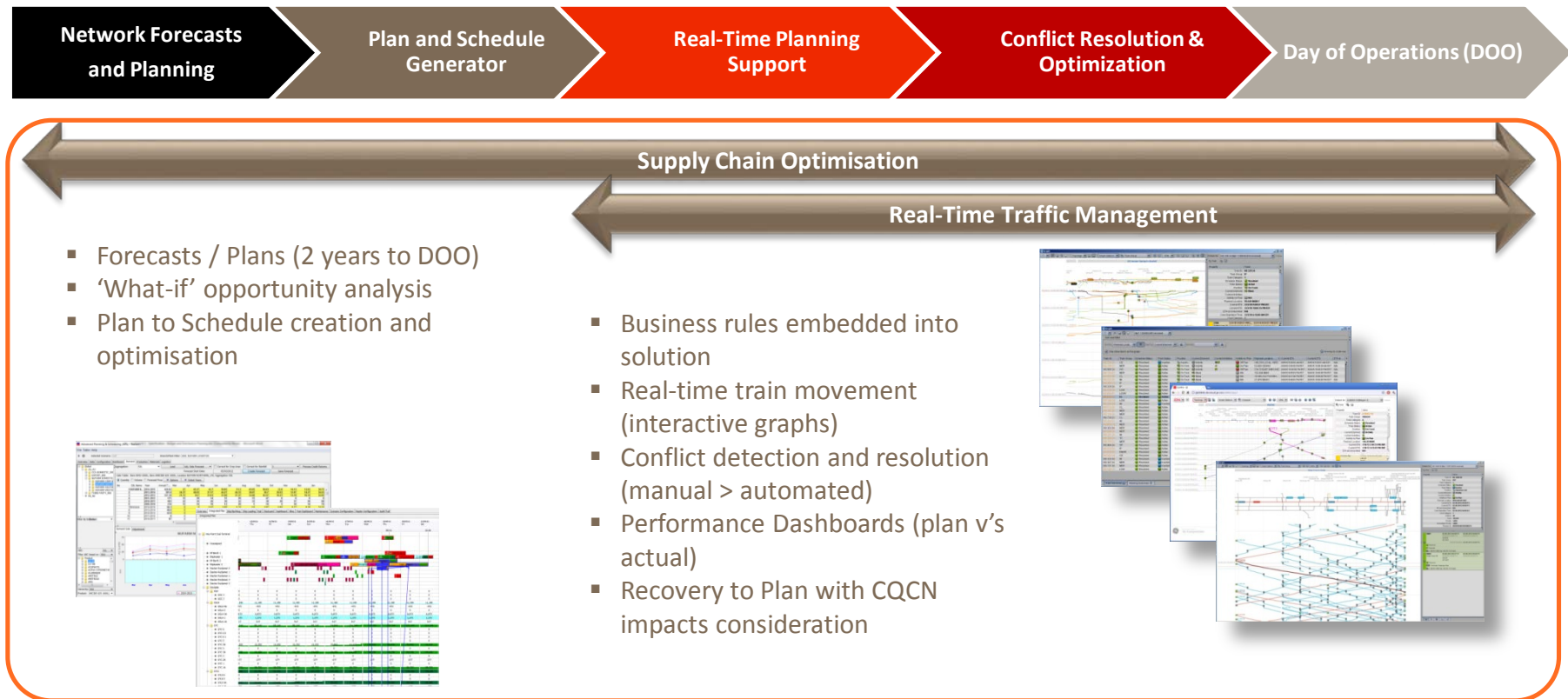


Remaining Business Need

- Support planning and execution with increasing complexity
 - More mine to port combinations
 - Increased volumes
- Better utilisation of capacity and existing asset
 - More trains, maintenance and track activity
- Further reduce Day of Operation losses through decision making with full system view vs individual sections
- Replace manual processes and legacy in-house systems
- Provide integrated solution from long term planning, to scheduling and day of operations
- Platform for 'auto routing'

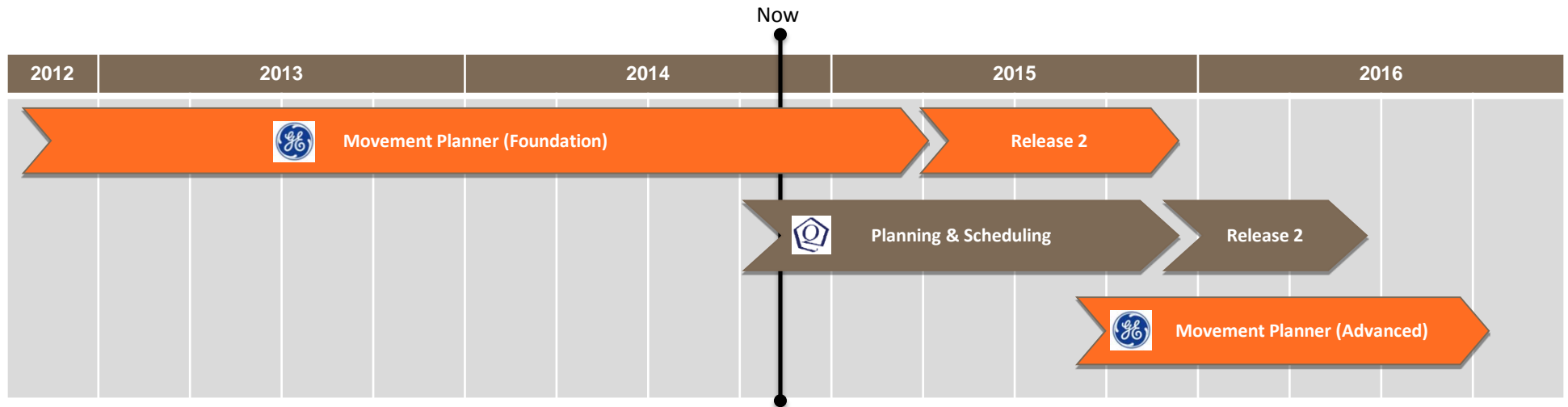
APEX – Advanced Planning and Execution

APEX is a transformational tool integrating industry proven technologies into a single solution to optimise planning, scheduling and day of operations for the Central Queensland Coal Network



Norfolk Southern (US Class 1 railroad company) introduced real time Day of Operations management software in 2012 using the same technology as APEX. They are now seeing increases in train velocity (10.1% increase), improved adherence to schedule (from 62 min late to 25 min early) and reduced crew expiration (57% reduction).

APEX delivered in three phases...



Movement Planner (Foundation)

- Electronic time-distance graphs
- Decision Support for recovery and management of variations
- Improved performance to plan
- Real time integration of scheduling and execution

Planning & Scheduling

- Network plan and schedule optimization
- Improved forecast accuracy
- Scenario modelling / 'what if' analysis
- Customer web portal

Movement Planner (Advanced)

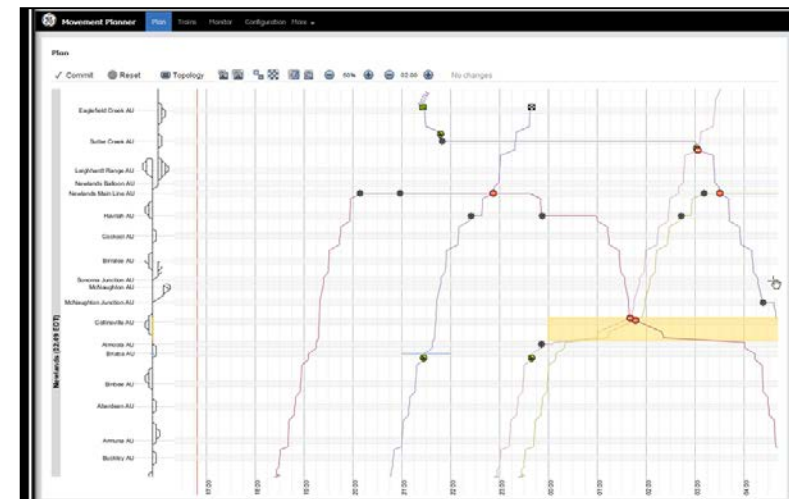
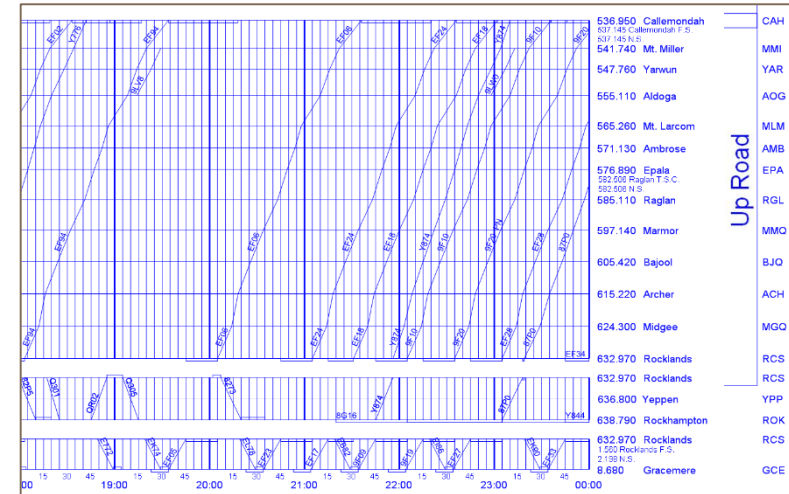
- Automated conflict resolution/ problem solving
- Improved decision support capability and responsiveness
- Consistent, reliable and repeatable execution

Total Budget: \$32.3m Spend to Date: \$11.5m
Full cost will be included in the Regulated Asset Base

Visible change from APEX

- Paper Train Control diagrams are currently used by Network Controllers
- These are created through manual manipulation of templates to find a 'best fit' for services requested by Rail Operators
- APEX will replace paper diagrams with electronic interactive train graphs
- These have a 12 hour forward view and will flow any live run changes across all impacted boards within the Control Centre in real time
- The Quintiq planning and scheduling system will create the 'Schedule' which feeds into GE's Movement Planner Day of Operations engine
- In future, this will be able to review the schedule and re-optimize the plan if required

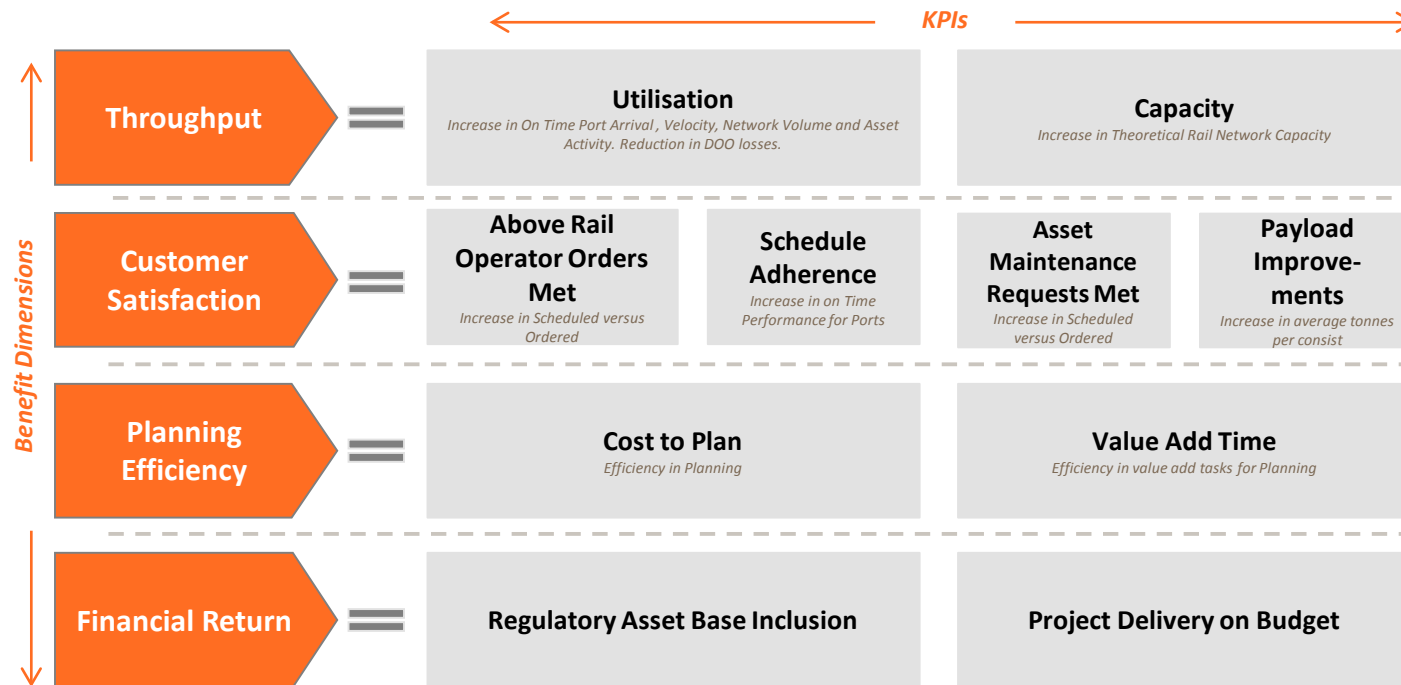
Paper Train Diagrams currently used



APEX Electronic Interactive Train Graphs

Benefits & opportunities for the entire coal supply chain

APEX integrates across Network long term planning to scheduling and day of operations execution to provide throughput, customer satisfaction & planning efficiency benefits.



Control Centre Tour

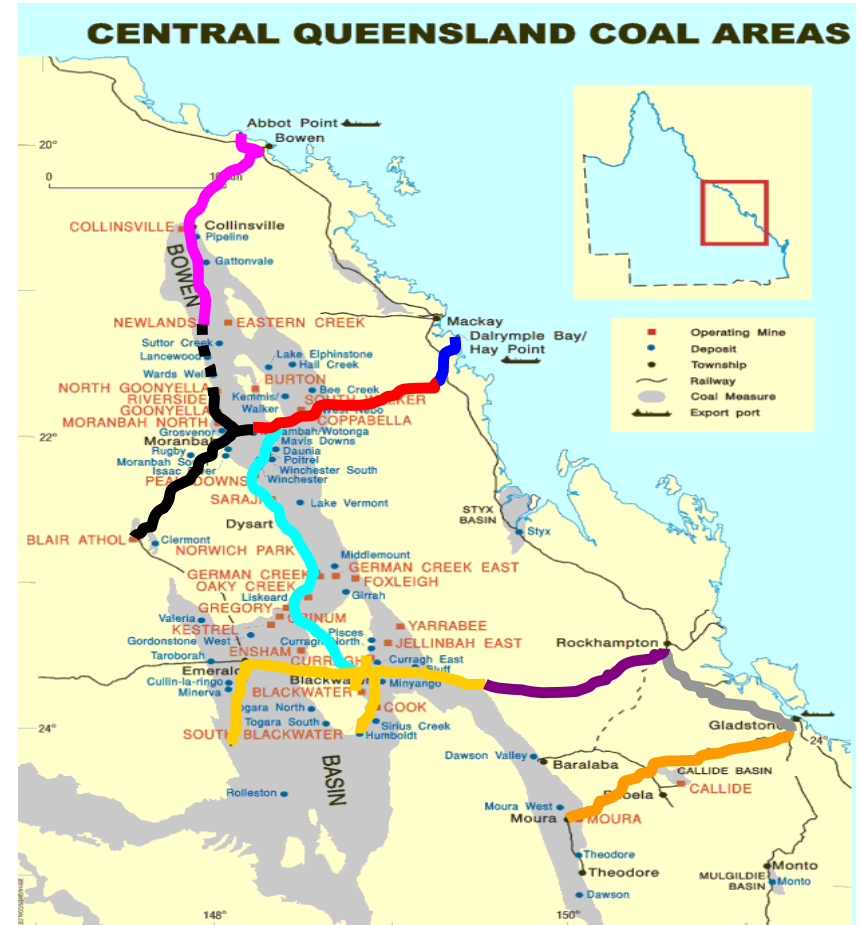
Darryl Johnson – Control Centre Manager

Presentation outline

- 1 Network Day of Operations
- 2 Network Operations CQCN Control Centre
- 3 Network Controller Training

Network Day of Operations

- Managing 2,700km of network with 1,800kms of overhead equipment
- Loading at 44 mines
- Delivering to 5 export coal terminals and 7 domestic customers
- Communicating with 6 Rail Operators
- 9 x Control Boards in consolidated Control Centre
 - Newlands
 - Goonyella (West, Far West, Ports, Gregory)
 - Blackwater (South, Near West, West)
 - Moura
- 3 x Area Controller teams based at key CQCN Yards
 - Jilalan
 - Callemondah
 - Gladstone
- 2 x Electrical Control Boards
 - Goonyella
 - Newlands
- 1 x Fault Coordination Centre



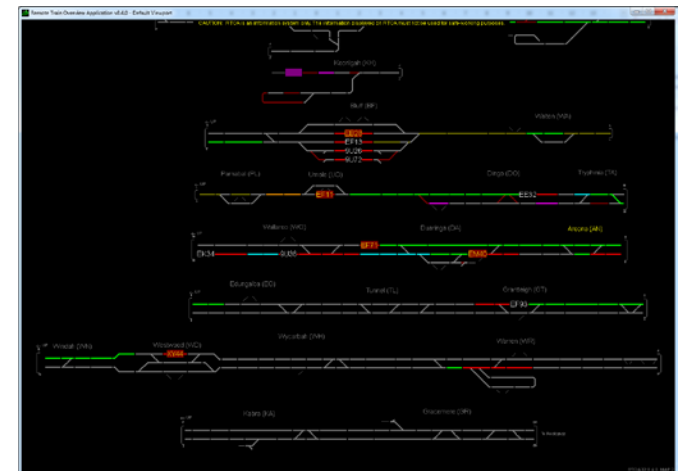
The coloured lines on the map show the geographic areas managed by each Control Board in the consolidated Control Centre

Network Consolidated CQCN Control Centre

- Manage the interface between coal and freight trains, high and low speed passenger trains, livestock, level crossings, occupational crossings and maintenance works
- Direct the movement of trains and maintenance rollingstock across the network
- Network Control plays a critical role in ensuring operations on CQCN are safe and efficient, with a focus on recovery to plan
- Consistent outcomes achieved through Business Execution Rules
- Regulatory obligations met through Schedule G Traffic Management Decision Making Matrix
- Emergency Response/Coordination in line with Network Crisis Management Handbook
- Provide Day of Operations Customer Interface for Network Operations
- System tools used include:
 - Network Operations Pathing Planner (NOPP)
 - PortVu
 - Vizirail
 - Universal Train Control (UTC)
 - Direct Train Control (DTC)
 - Remote Train Overview Application (RTOA) and
 - Systems Control and Data Acquisition (SCADA)



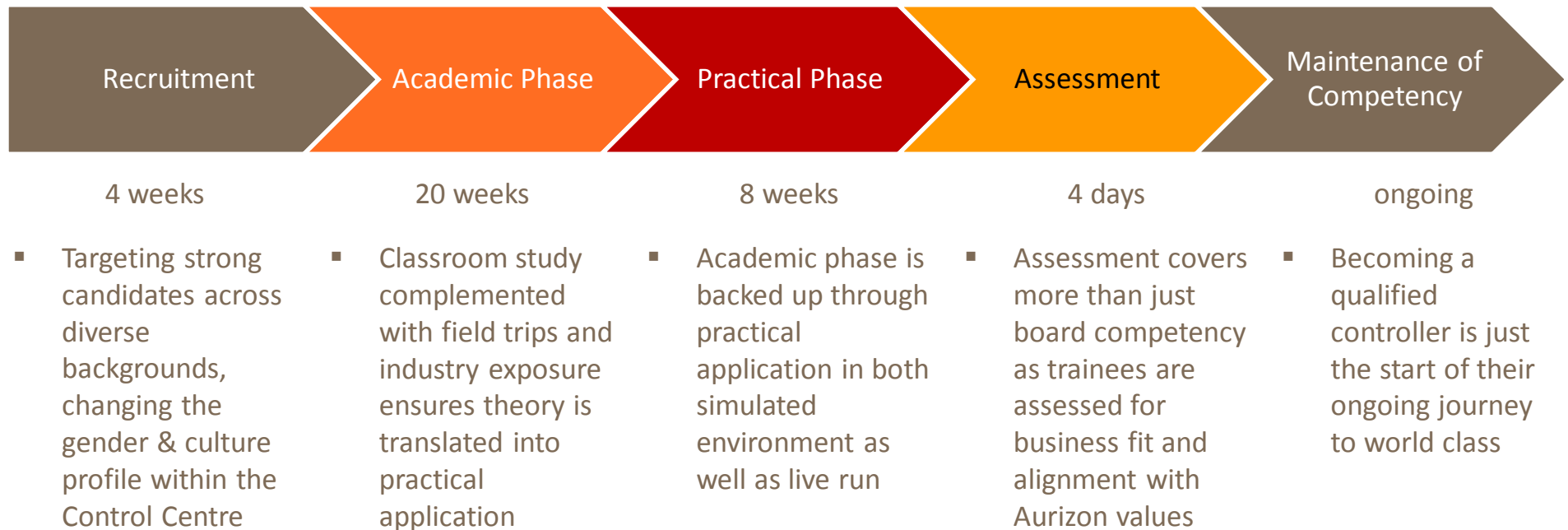
Train Controller with RTOA screens



Network Controller Training

- Network Control needs to perform highly skilled and safety critical work that carries with it a high level of responsibility
- The transformation of the Network Controller Training Programme has delivered increased safety and production performance

Five key training and assessing phases





Investor Briefing – Driving Value

Day 2 – 28 October 2014