



Goonyella System

Information Pack

Version 7.0
March 2017



Revision History

Issue 1 9 October 2000

Issue 2 1 June 2005

Issue 2.1 27 February 2007

Sectional run times altered to show only Reference Train.

Issue 3 September 2011

Issue 4 February 2012

Issue 5 April 2013

Issue 6 April 2014

Issue 6.1 August 2014

Review and inclusion of Lilyvale and Caval Ridge.

Issue 6.2 December 2014

Document review and re-release.

Issue 6.3 April 2015

Removal of Caval Ridge from reference, and addition of Hay Point second arrival road.

Issue 6.4 May 2015

Updated Section Run Times.

Issue 6.5 January 2016

Asset data adjusted to reflect upgrades.

Issue 6.6 July 2016

Updated notes for SRT.

Issue 7.0 March 2017

Format changed, new asset data added, removal of Section Running Times.

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Introduction

All railway operators wishing to operate in Queensland and on Aurizon Network Pty Ltd rail network require Accreditation under the Transport Infrastructure Act 1994 (Qld) and need to consider the following aspects of typical rail operations (note this is not an exhaustive list):

- Provisioning, stabling or stowing areas for Rolling stock
- Train crewing
- Safe working
- Training
- Route knowledge
- Environmental requirements
- Track standards
- Signalling and traction systems standards and constraints
- Safety training
- Management of risk
- Rolling stock registration and Train authorisation
- Legal issues as contained in Aurizon Network's Access Undertaking, Access Agreements and information contained in this pack.

Operators will be required to have Queensland Department of Transport and Main Roads accreditation, hold an Access Agreement with Aurizon Network and meet any conditions and precedents specified in the Access Agreement prior to commencing operations.

The Accreditation process requires applicants to demonstrate competence and capability to safely commence and maintain rail operations. The Accreditation process is managed by the Queensland Department of Transport and Main Roads, which is independent of Aurizon Network.

Contact details are:

Director of Rail Safety Regulation,
Land Transport and Safety Division
PO Box 673
Fortitude Valley QLD 4006.

Operators need to be aware of and comply with other general legislation such as but not limited to Workplace Health & Safety, Environmental legislation and Heritage legislation.

This information package is issued as an UNCONTROLLED DOCUMENT and is planned to be reviewed annually. It is on the onus of enquirer to ensure they are using the current version of this document and /or the latest information.

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If you would like further information, or feel that any information contained within this document is incorrect, please contact us via email at NAMSDDataStewards@aurizon.com.au

In this document the legal entity Aurizon Network Pty Ltd is referred to as Aurizon Network.

Definitions – see *APPENDIX A*

General Information

The Goonyella System is located in Central Queensland between the latitudes 21°18' S and 23°09' S and longitudes 147°31' E and 149°17' E.

The system services the Bowen Basin in Central Queensland and carries product to the ports at Hay Point and other destinations by way of connections to the North Coast Line at Yukan and the Central Line via Gregory to Burngrove (see Blackwater System Information Pack).

The Port of Hay Point consists of two separate coal terminals, the Dalrymple Bay Coal Terminal and the Hay Point Coal Terminal. Dual unloading balloons are located at Hay Point and Triple unloading balloons at Dalrymple Bay.

The Goonyella System is bi-directional duplicated track with crossovers between Dalrymple Junction (7.966 km) and Wotonga (174.021km) with the remainder of the track being duplication between Coppabella and Ingsan. The junction for the Peak Downs, Saraji, Norwich Park, Lake Vermont, German Creek and Oaky Creek line is at Coppabella (145.551 km), whilst the junction for the Blair Athol line is at Wotonga (174.020 km).

Balloon loops are located at Goonyella, Riverside, North Goonyella, Moorvale, Millennium, Carborough Downs and Isaac Plains.

There is a single line connection from Oaky Creek to Gregory linking the Goonyella System with the Blackwater System.

Access from the Goonyella System to the North Coast Line occurs at Yukan enabling product to travel to other destinations within the State.

The Goonyella System is electrified by an autotransformer system with the overhead line equipment operating at 25 000 volts, 50 Hertz, alternating supply (25 kV, 50 Hz, ac).

Descriptive distances within this document are route kilometres and are general only, for accurate distances refer to relevant Working Plan and Sections. The origin point (0.000 km) for the Goonyella System is the centre of the unloader on the inner balloon loop at Hay Point.

General Climate

The system is situated in central Queensland and in a generally warm to hot climate.

The following sub-sections specify general climatic parameters. For latest and more specific information, potential railway operators should consult The Australian Bureau of Meteorology at their Internet Website www.bom.gov.au.

Cyclones

Tropical lows, which develop from November to April, occasionally deepen to cause tropical cyclones. Tropical cyclones show great variation in behaviour. They foster high winds, heavy, flood-producing rainfall (especially when a cyclone moves over high ground), and coastal storm surges.

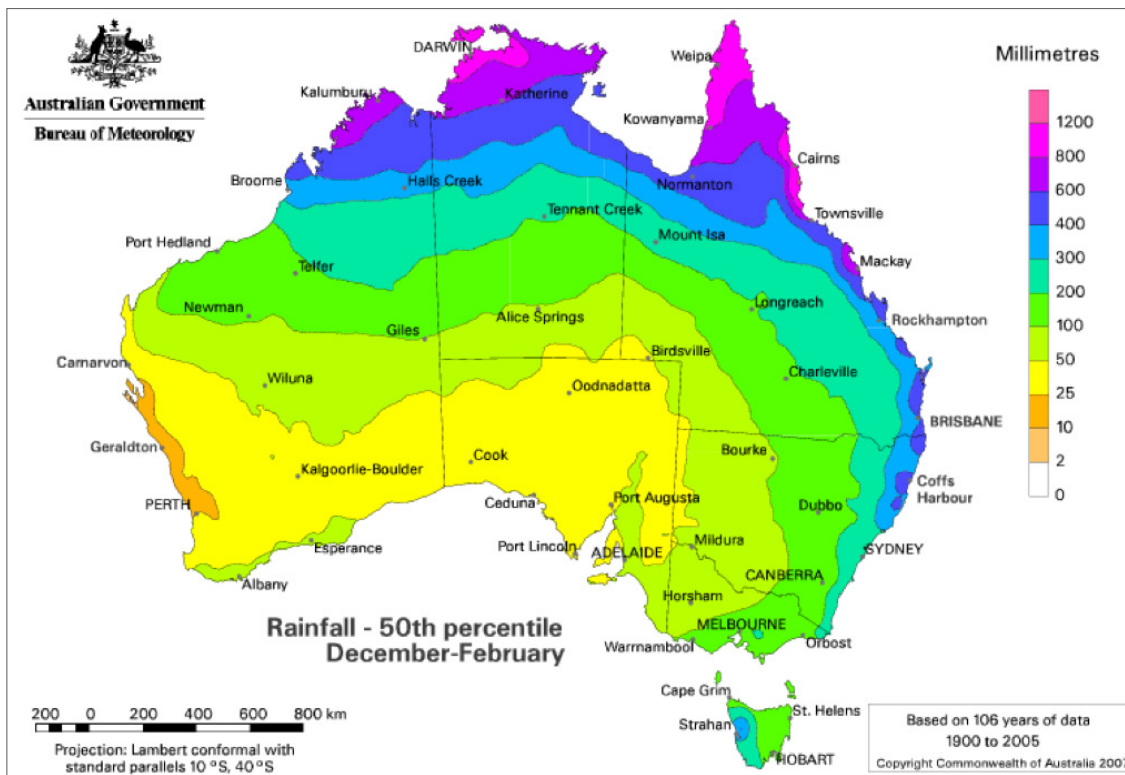
The high wind risk does not usually extend further inland than 50 km. Inland movement reduces the inflow of moisture and cyclone intensity declines, often within a few hours. Not all cyclones are severe.

Humidity

This region can experience prolonged periods of high humidity and potential railway operators should consider this when planning / designing rolling stock and machinery to operate on this rail system.

Rainfall

Highest rainfall occurs on the seaward side of the Great Dividing Range. However, at times in summer the inland extension of low-level moist airflow, in combination with intense surface heating, produces significant thunderstorm activity. Rainfall is mostly confined to the summer months in the northern tropics, where in excess of 90% of the annual total is recorded between November and April. In the north, rain is mostly associated with monsoonal troughs. The wet season in Queensland is predominantly from January to April when monthly rain falls of 400 mm or more can occur. Flooding of low lying areas is likely to occur during periods of extreme rainfall.

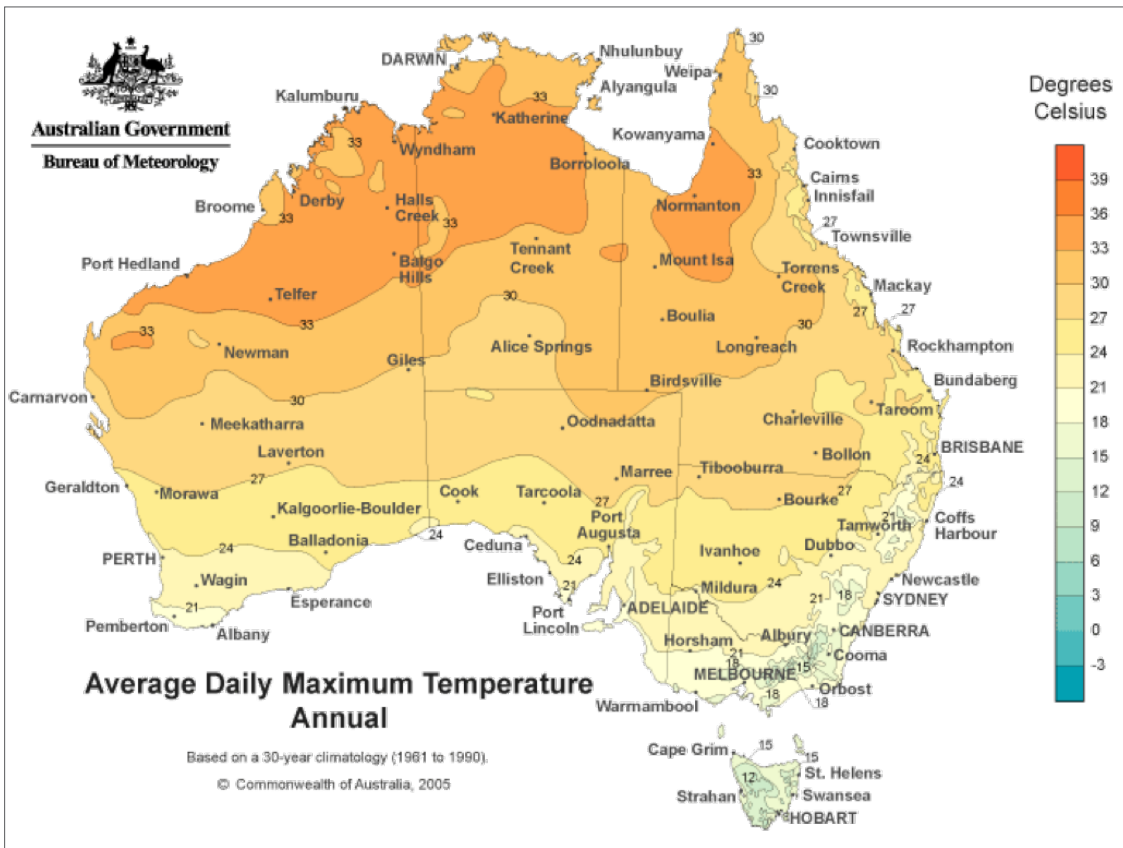


Information is available at the Bureau's website based on past rainfall totals and computer modelling for periods of up to about 3 months. It is important to check the latest information available from the Bureau prior to operating on the Aurizon Network.

Temperatures

The average annual values of the daytime maximum of the hottest (January) and night-time minimum of the coldest (July) months are indicated on the climatic maps.

During the period of peak temperature, it may be an operational requirement that Line Speed be reduced to minimise the risk of incident (refer Operational Constraints).



Description of the Railway

The track (1067 mm gauge) on the main trunk route from Hay Point to North Goonyella is generally 60 kg/m rail with concrete sleepers. Bridges allow the passage of 106 t (26.5 tal) wagons at 80 km/h.

Based on the improved asset intelligence provided as a result of the Network Asset Management System, the following new totals are provided for this system. The linear data is accurate to sub-meter distances.

Asset Type	Length / Total
Total Track	1021.319 km (Includes yards, sidings & passing loops)
Duplicated Track	182.773 km
Passing Loops	35.506 km (15 Passing Loops)
Sidings	10.535 km (34 Sidings)
Electrified Track	1014.842 km (Includes yards, sidings & passing loops)
Access Roads	669.079 km (Including Left and Right side of track)
Level Crossings	275 Crossings
Lubricators	33 Sites
Crew Change Facilities	130 Sites
Turnouts	424 Turnouts (Mainline & Yards)

Axle Loadings

Maximum axle load	Wheel configuration consistent with or otherwise generating a loading equivalent to
26.5 tal	M 270 / M 220

Basic Track Map

A basic track map is in *APPENDIX B*. If you require more information about the Goonyella System that is not included in this document then please contact us via our website www.aurizon.com.au and then click on the Contact Us link and then fill in your enquiry details.

Hay Point to Coppabella (144.5 km)

This section comprises uploading balloon loops at Hay Point and Dalrymple Bay, connecting via duplicated track to double track crossovers at 7.875 km, a distance of 4.438 km, then bi-directional double track to Coppabella.

There is a balloon loop at MacArthur (137.216km) and a spur at 127.475km that connects to South Walker Balloon Loop as well as Hail Creek Balloon Loop, all feed into the Goonyella System on this section.

Track structure is 53 kg/m and 60 kg/m rail on concrete sleepers.

The maximum permissible axle load is 26.5 tonnes.

The maximum speed for trains between the balloon loops at Hay Point / Dalrymple bay and Dalrymple Junction is 60 km/h. The section of track from Dalrymple Junction to Coppabella has a maximum speed of 80 km/h for block trains (26.5 tal) and 100 km/h for freight trains (20 tal).

The speed of loaded trains heading towards Yukan on either track is restricted to 40 km/h between 45.701 km and 36.219 km (Hatfield Range).

The maximum grade (not compensated for horizontal alignment) that an Up train - (westbound) will encounter is 1 in 45 (43 km) whilst for a Down train (eastbound) is 1 in 66 (26km).

Existing minimum nominal horizontal curve radii are as follows:

running line	300 m
balloon loop	200 m
siding and depots	140 m

Fencing along this corridor complements adjacent land usage and is maintained at the following standard, poor (40 %) and medium to good (60 %).

Dalrymple Bay

This section comprises three balloon loops at Dalrymple Bay, connecting via double track crossovers at 8.215 km (Dalrymple Junction) on the Hay Point to Coppabella corridor, then joining bi-directional double track to Coppabella.

Track structure is 53 kg/m and 60kg/m rail on concrete sleepers.

The maximum permissible axle loading is 26.5 tonnes.

This section of track caters for block trains with a maximum speed of 60 km/h in the balloon loops and 80km/hr on exit side to Dalrymple Junction.

The maximum grade (not compensated for horizontal alignment) that a Down train (eastbound) will encounter is 1 in 150 whilst for an Up train (westbound) is 1 in 302.

Existing minimum nominal horizontal curve radii are as follows:

running line	427 m
balloon loop	280 m
siding and depots	140 m

Fencing along this corridor complements adjacent land usage and is maintained at the following standard, poor (40 %) and medium to good (60 %).

South Walker Creek Branch (11.1 km)

This 11.1 km spur and balloon loop has its junction with the Goonyella Line at 127.475 km.

Track structure is 60 kg/m rail on concrete sleepers.

The maximum permissible axle loading is 26.5 tonnes.

This section of track caters for block trains with a maximum speed of 80 km/h.

The maximum grade (not compensated for horizontal alignment) that an Up train (northbound) will encounter is 1 in 66 (6.8 km) whilst for a Down train (southbound) is 1 in 105 (5 km).

Existing minimum nominal horizontal curve radii are as follows:

running line	550 m
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balloon loop	300 m
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siding and depots	140 m
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Fencing along this corridor complements adjacent land usage and is maintained at the following standard, poor (40 %) and medium to good (60 %).

Hail Creek Branch (46.7 km)

This 46.7 km spur and balloon loop has its junction with the South Walker spur at 6.326 km (Bidgerley Junction).

Track structure is 60 kg/m rail on concrete sleepers.

The maximum permissible axle loading is 26.5 tonnes.

This section of track caters for block trains with a maximum speed of 80 km/h.

The maximum grade (not compensated for horizontal alignment) that an Up train (northbound) will encounter is 1 in 100 (10 km & 33 km) whilst for a Down train (southbound) is 1 in 125 (35 km).

Existing minimum nominal horizontal curve radii are as follows:

running line	850 m
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balloon loop	300 m
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siding and depots	140 m
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Fencing along this corridor complements adjacent land usage and is maintained at the following standard, poor (40 %) and medium to good (60 %).

MacArthur Balloon Loop (5.1 km)

This balloon loop has its junction with the Goonyella line at 137.216 km.

Track structure is 60 kg/m rail on concrete sleepers.

The maximum permissible axle loading is 26.5 tonnes.

This section of track caters for block trains with a maximum speed of 50 km/h.

The maximum grade (not compensated for horizontal alignment) that an Up train (northbound) will encounter is 1 in 83 whilst a Down train (southbound) will encounter falling grades to the Goonyella Line.

Existing minimum nominal horizontal curve radii are as follows:

running line	300 m
balloon loop	300 m
siding and depots	140 m

Fencing along this corridor complements adjacent land usage and is maintained at the following standard, poor (40 %) and medium to good (60 %).

Coppabella to North Goonyella (72.7 km)

The bi-directional double track from east of Coppabella extends beyond Coppabella to Wotonga at 174.024 km, then reverts to single track and continues to the North Goonyella balloon loop at 213.754 km. There are balloon loops at Burton Coal, Carborough Downs, Isaac Plains, Moranbah North, Goonyella, Riverside and North Goonyella. The Blair Athol Mine railway junctions at Wotonga.

Track structure is predominantly 60 kg/m with 53 kg/m rail on concrete sleepers with some 47 kg/m rail on concrete sleepers.

The maximum permissible axle loading is 26.5 tonnes.

This section of track caters for block trains with a maximum speed of 80 km/h.

The maximum grade (not compensated for horizontal alignment) that an Up train (westbound) will encounter is 1 in 56 (173 km) whilst for a Down train (eastbound) the grade is 1 in 95 (153 km).

Existing minimum nominal horizontal curve radii are as follows:

running line	498 m
balloon loop	300 m
siding and depots	140 m

Fencing along this corridor complements adjacent land usage and is maintained at the following standard, poor (80 %) and medium to good (20 %).

Burton Balloon Loop (5.0 km)

This balloon loop has its junction with the Goonyella Line at 168.280 km and consists of a single track balloon loop.

Track structure is 53 kg/m rail on concrete sleepers.

The maximum permissible axle loading is 26.5 tonnes.

This section of track caters for block trains with a maximum speed of 50 km/h.

The maximum grade (not compensated for horizontal alignment) that an Up train (northbound) will encounter is 1 in 227 whilst for a Down train (southbound) the grades are falling to the Goonyella Line.

Existing minimum nominal horizontal curve radii are as follows:

running line	300 m
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balloon loop	300 m
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siding and depots	140 m
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Fencing along this corridor complements adjacent land usage and is maintained at the following standard, poor (80 %) and medium to good (20 %).

Moranbah North Balloon Loop (7.3 km)

This balloon loop has its junction with the Goonyella Line at 192.193 km and consists of a single track balloon loop.

Track structure is 60 kg/m rail on concrete sleepers.

The maximum permissible axle loading is 26.5 tonnes.

This section of track caters for block trains with a maximum speed of 50 km/h.

The maximum grade (not compensated for horizontal alignment) that an Up (westbound) train will encounter is 1 in 161 whilst for a Down train (eastbound) the maximum grade is 1 in 301.

Existing minimum nominal horizontal curve radii are as follows:

running line	300 m
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balloon loop	300 m
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siding and depots	140 m
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Fencing along this corridor complements adjacent land usage and is maintained at the following standard, poor (80 %) and medium to good (20 %).

Goonyella Balloon (5.1 km)

This balloon loop shares a section of the Goonyella Line between 195.155 km and 195.408 km with traffic from Riverside and Goonyella North and consists of a single track balloon loop.

Track structure is 53 kg/m rail on concrete sleepers.

The maximum permissible axle loading is 26.5 tonnes.

This section of track caters for block trains with a maximum speed of 25 km/h.

The maximum grade (not compensated for horizontal alignment) that an Up train (westbound) will encounter is 1 in 333 whilst for a Down train (eastbound) the grades are falling to the Goonyella Line.

Existing minimum nominal horizontal curve radii are as follows:

balloon loop	200 m
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siding and depots	140 m
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Fencing along this corridor complements adjacent land usage and is maintained at the following standard, poor (80 %) and medium to good (20 %).

Riverside Balloon (7.4 km)

This balloon loop shares section of the Goonyella Line between 197.784 km and 200.629 km with traffic from Goonyella North and consists of a single track balloon loop.

Track structure is predominantly 47 kg/m rail on concrete sleepers with some 53 kg/m rail on concrete sleepers.

The maximum permissible axle loading is 26.5 tonnes.

This section of track caters for block trains with a maximum speed of 50 km/h.

The maximum grade (not compensated for horizontal alignment) that an Up train (westbound) will encounter is 1 in 333 whilst for a Down train (eastbound) the grades are falling to the Goonyella Line.

Existing minimum nominal horizontal curve radii are as follows:

running line	800 m
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balloon loop	300 m
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siding and depots	140 m
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Fencing along this corridor complements adjacent land usage and is maintained at the following standard, poor (80 %) and medium to good (20 %).

Wotonga to Blair Athol Mine (108.2 km)

This 108.2 km spur junctions with the Goonyella Line at Wotonga (173.903 km) and includes balloon loops at Caval Ridge and Mount McLaren. The branch terminates in a balloon loop at Blair Athol Mine.

A junction at 103.596 km connects this railway to Clermont and Emerald.

Track structure is 53 kg/m rail on concrete sleepers.

The maximum permissible axle loading is 26.5 tonnes for block trains and 20 tonnes for freight trains.

This section of track caters for a maximum speed of 100 km/h and 80 km/hr for 26.5 tal.

The maximum grade (not compensated for horizontal alignment) that a Down train (northbound) will encounter is 1 in 100 (43km) whilst for an Up train (southbound) the maximum grade is 1 in 50 (20km).

Existing minimum nominal horizontal curve radii are as follows:

running line	1500 m
balloon loop	400 m
siding and depots	140 m

Fencing along this corridor complements adjacent land usage and is maintained at the following standard, poor (80 %) and medium to good (20 %).

Coppabella to Gregory Junction (164.8 km)

This 164.8 km connection joins the Goonyella System at Coppabella (145.551 km) with the Blackwater System at 60.978 km on the Gregory Line and includes balloon loops at Moorvale, Peak Downs, Saraji, Millennium, Lake Vermont Norwich Park, German Creek and Oaky Creek. There are passing loops on this section located at Red Mountain, Winchester, Peak Downs, Harrow, Saraji, Dysart, Stephens, Norwich Park, Bundoora, and Lilyvale. There are sidings located on this section at the following passing loops, as well as on most balloon loops; Ingsdon, Red Mountain, Peak Downs, Saraji, Dysart and Bundoora.

Track structure is 60 kg/m rail on concrete sleepers with the exception of Peak Downs to Saraji which is 53 kg/m rail on concrete.

The maximum permissible axle loading is 26.5 tonnes.

This section of track caters for a maximum speed of 80 km/h for block trains and 100 km/h for freight trains.

The maximum grade (not compensated for horizontal alignment) that a Down train (northbound) travelling between Oaky Creek and Coppabella will encounter is 1 in 100 whilst for an Up train (southbound) the maximum grade is 1 in 50.

Existing minimum nominal horizontal curve radii on the section Coppabella to Oaky Creek are as follows:

running line	402 m
siding and depots	140 m

The maximum grade (not compensated for horizontal alignment) that a southbound train travelling between Oaky Creek and Gregory Junction will encounter is 1 in 86 whilst for a northbound train the maximum grade is 1 in 99.

Existing minimum nominal horizontal curve radii are as follows:

running line	1200 m
siding and depots	140 m

Fencing along this corridor complements adjacent land usage and is maintained at the following standard, poor (80 %) and medium to good (20 %).

Moorvale Branch (6.1 km)

This 6.1 km spur and balloon loop has its junction with the Coppabella to Saraji section at 8.375 km.

Track structure is 60 kg/m rail on concrete sleepers.

The maximum permissible axle loading is 26.5 tonnes.

This section of track caters for block trains with a maximum speed of 80 km/h.

The maximum grade (not compensated for horizontal alignment) that an Up train (southbound) will encounter is 1 in 259 whilst for a Down train (northbound) is 1 in 183.

Existing minimum nominal horizontal curve radii are as follows:

running line	550 m
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balloon loop	300 m
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siding and depots	140 m
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Fencing along this corridor complements adjacent land usage and is maintained at the following standard, good (100 %).

Millennium Balloon (6.6 km)

This balloon loop has its junction with the Coppabella to Saraji section at 16.532 km.

Track structure is 60 kg/m rail on concrete sleepers.

The maximum permissible axle loading is 26.5 tonnes.

This section of track caters for block trains with a maximum speed of 50 km/h.

The maximum grade (not compensated for horizontal alignment) that an Up and down train will encounter is 1 in 85.

Existing minimum nominal horizontal curve radii are as follows:

running line	550 m
--------------	-------

balloon loop	300 m
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siding and depots	300 m
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Fencing along this corridor complements adjacent land usage and is maintained at the following standard, poor (80 %) and medium to good (20 %).

Peak Downs Balloon (5.6 km)

This single track balloon loop has its junction with the Coppabella to Oaky Creek Line at 43.652 km.

Track structure is 47 kg/m rail on concrete sleepers.

The maximum permissible axle loading is 26.5 tonnes.

This section of track caters for block trains with a maximum speed of 25 km/h.

The maximum grade (not compensated for horizontal alignment) that an Up train will encounter is 1 in 86 whilst for a Down train the grades are falling to the Coppabella Oaky Creek Line.

Existing minimum nominal horizontal curve radii are as follows:

running line	300 m
balloon loop	200 m
siding and depots	140 m

Fencing along this corridor complements adjacent land usage and is maintained at the following standard, poor (80 %) and medium to good (20 %).

Saraji Balloon (5.5 km)

This single track balloon loop has its junction with the Coppabella to Oaky Creek Line at 64.798 km.

Track structure is 47 kg/m rail on concrete sleepers.

The maximum permissible axle loading is 26.5 tonnes.

This section of track caters for block trains with a maximum speed of 25 km/h.

The maximum grade (not compensated for horizontal alignment) that an Up train will encounter is 1 in 194 whilst for a Down train the grades are falling to the Coppabella Oaky Creek Line.

Existing minimum nominal horizontal curve radii are as follows:

balloon loop	300 m
siding and depots	140 m

Fencing along this corridor complements adjacent land usage and is maintained at the following standard, poor (80 %) and medium to good (20 %).

Lake Vermont (16.4 km)

This single track balloon loop connects to the Coppabella to Oaky Creek Line via an angle at the 85.698 km and 87.017 km.

Track structure is 60 kg/m rail on concrete sleepers.

The maximum permissible axle loading is 26.5 tonnes.

This section of track caters for block trains with a maximum speed of 60 km/h.

The maximum grade (not compensated for horizontal alignment) that an Up train will encounter is 1 in 114 whilst for a Down train the grade is 1 in 110.

Existing minimum nominal horizontal curve radii are as follows:

running line	550 m
balloon loop	300 m
siding and depots	300 m

Fencing along this corridor complements adjacent land usage and is maintained at the following standard, medium (25 %) and good (75 %).

Norwich Park Balloon (4.4 km)

This single track balloon loop has its junction with the Coppabella to Oaky Creek Line at 108.024 km.

Track structure is 47 kg/m rail on concrete sleepers.

The maximum permissible axle loading is 26.5 tonnes.

This section of track caters for block trains with a maximum speed of 25 km/h.

The maximum grade (not compensated for horizontal alignment) that an Up train will encounter is 1 in 83 whilst for a Down train the grades are falling to the Coppabella Oaky Creek Line..

Existing minimum nominal horizontal curve radii are as follows:

balloon loop	300 m
siding and depots	140 m

Fencing along this corridor complements adjacent land usage and is maintained at the following standard, poor (80 %) and medium to good (20 %).

German Creek Balloon (6.7 km)

This single track balloon loop has its junction with the Coppabella to Oaky Creek Line at 129.695 km.

Track structure is 47 kg/m rail on concrete sleepers.

The maximum permissible axle loading is 26.5 tonnes.

This section of track caters for block trains with a maximum speed of 25 km/h.

The maximum grade (not compensated for horizontal alignment) that an Up train will encounter is 1 in 272 whilst for a Down train the grade is 1 in 145.

Existing minimum nominal horizontal curve radii are as follows:

running line	700 m
balloon loop	300 m
siding and depots	300 m

This balloon loop has a southern connection, radius 270 m that permits trains from German Creek to travel south to Gregory Junction which is the connection with the Blackwater System.

Fencing along this corridor complements adjacent land usage and is maintained at the following standard, poor (80 %) and medium to good (20 %).

Oaky Creek Balloon (6.1 km)

This single track balloon loop has its junction with the Coppabella to Oaky Creek Line at 148.824 km.

Track structure is 47 kg/m rail on concrete sleepers.

The maximum permissible axle loading is 26.5 tonnes.

This section of track caters for block trains with a maximum speed of 50 km/h.

The maximum grade (not compensated for horizontal alignment) that an Up train will encounter is 1 in 301 whilst for a Down train the grade is 1 in 158.

Existing minimum nominal horizontal curve radii are as follows:

running line	1000 m
balloon loop	300 m
siding and depots	140 m

This balloon loop has a southern connection, radius 230 m that permits trains from Oaky Creek to travel south to Gregory Junction which is the connection with the Blackwater System

Fencing along this corridor complements adjacent land usage and is maintained at the following standard, poor (80 %) and medium to good (20 %).

Minimum nominal horizontal radius for new track or upgrade existing tracks is as follows:

running line	2170 m	160 km/h running
	1662 m	140 km/h running
	1221 m	120 km/h running
	848 m	100 km/h running
	542 m	80 km/h running

balloon loop 300 m minimum radius

siding and depots 300 m minimum radius

Description of the Track

The track on this system is a mix of 60 kg/m, 53 kg/m, 47 kg/m on concrete sleepers on the main line and balloons with 41 kg/m on timber sleepers in some yards on crushed rock ballast. The rails are continuously welded except where glued insulated joints are used for train detection using track circuits.

Speeds through the curved leg of turnouts are governed by the angle of that turnout i.e.

1 in 12	25 km/h
1 in 12 (tangential)	40 km/h
1 in 16	50 km/h
1 in 25	80 km/h

In general, curves (with the exception of turnout curves) are transitioned.

For more information on Working Plan and Section drawings, please contact us via our website www.aurizon.com.au and then click on the Contact Us link and then fill in your enquiry details.

Overhead Line Equipment

The Goonyella System is electrified by an autotransformer system with the overhead line equipment operating at 25 000 volts, 50 Hertz, alternating supply (25 kV, 50 Hz, ac). Distribution is via a contact wire suspended from a catenary wire and these two wires are held in place by supporting structures to maintain ideal pantograph/contact wire interaction.

Typically, the autotransformer system also uses a 25 kV AC feeder wire run on the back of the supporting structure which is used for voltage support throughout the electrified network.

The dual wire distribution system is automatically tensioned to maintain a constant wire tension and requires a pantograph uplift force of 80 N 3 10 N for smooth sparkless current collection.

The contact wire height may vary from 4400 mm to 5850 mm above rail level.

Typically in the Goonyella System, the traction system uses both rails for return current.

Operational Constraints – Infrastructure

During the summer months of high temperatures, hot weather precautions for track stability are observed to reduce the risk of incident in accordance with Aurizon Network Service's Safety and Security Standard SAF/STD/0075/CIV/NET Hot Weather Precautions for Track Stability, namely:

Air Temperature 38°C and above

On timber sleepered track, restrict EMU's to 80 km/h and all other trains to 60 km/h[#]

On concrete sleepered track, restrict all trains to 120 km/h

Air Temperature 40°C and above

On timber sleepered track, restrict EMU's to 60 km/h and all other trains to 40 km/h[#]

On concrete sleepered track, restrict all trains to 60 km/h

[#]Steel sleepered track and timber sleepered track with interspersed steel sleepers shall be regarded as equivalent to timber sleepered track for track stability.

Speed restrictions may also be put in place after maintenance activities in accordance with Aurizon Network Safety Standards.

The extent of restriction will depend upon the type of maintenance activity and risk of track misalignments.

Force Majeure Events will also see the imposition of speed restrictions, the extent and severity of the restrictions being dependent on the event.

Operational Constraints - Rolling Stock

All new rolling stock requires to be accepted via the Rolling Stock Authorisation Process. Rolling stock which conforms with Drawing Nos. 2236, 2237 and 2238 may operate in an unrestricted manner on main lines providing all other conditions of railing are met.

For rolling stock to conform with drawing numbers 2236, 2237 and 2238 the static rolling stock profile must be within the diagram. As well as the static component, dynamic effects need to be considered and these effects are contained within the Rolling Stock Interface Standard - SAF/STD/0145/INF/NET.

Rolling stock not conforming to these drawings may be accepted via the Rolling stock Authorisation Process and may be operated subject to constraints / limitations imposed as a result of the Authorisation Process.

Rolling stock conforming to A2-37328 is permitted to run on the Goonyella System providing all other conditions of railing are met.

Potential railway operators should ensure that they have the latest revision of these drawings before the planning and construction of rolling stock.

Trackside Detection Equipment

Dragging Equipment Detectors (DED)

Dragging equipment detectors are placed at strategic locations along the route to give early warning of rolling stock defects and minimise the effect of any derailment incident.

Operators are required to stop immediately if advised of a dragging equipment detection by the train controller.

Locations are as follows:

Hay Point

Balloon - 2 tracks

4.240 km - 1 track

Dalrymple Bay

Balloon (0.047 km) - 3 tracks

Praguelands - Coppabella - North Goonyella

10.648 km - 2 tracks

16.680 km - 2 tracks

27.707 km - 2 tracks

35.725 km - 2 tracks

44.595 km - 2 tracks

54.874 km - 2 tracks

66.570 km - 2 tracks

81.760 km - 2 tracks

92.422 km - 2 tracks

104.325km - 2 tracks

114.496 km - 2 tracks

126.648 km - 2 tracks

130.668 km - 2 tracks

135.360 km - 2 tracks

139.365 km - 2 tracks

154.184 km - 2 tracks

160.735 km - 1 track

184.838 km - 1 track

197.738 km - 1 track

207.000 km	- 1 track
5.056 km	- 1 track (Mrnbh North Balloon)
198.323 km	- 1 track (Goonyella Balloon)
203.560 km	- 1 track (Riverside Balloon)
217.221 km	- 1 track (North Gnylla Balloon)

Coppabella - Gregory

5.550 km	- 2 tracks
16.400 km	- 1 track
17.100 km	- 1 track
28.500 km	- 1 track
42.102 km	- 1 track
53.021 km	- 1 track
67.560 km	- 1 track
77.280 km	- 1 track
78.400 km	- 1 track
88.097 km	- 1 track
91.976 km	- 1 track
115.400 km	- 1 track
138.000 km	- 1 track
47.087 km	- 1 track (Peak Dwns Balloon)
68.159 km	- 1 track (Saraji Balloon)
111.231 km	- 1 track (Norwich Prk Balloon)
134.327 km	- 1 track (German Crk Balloon)

Wotonga - Blair Athol

8.562 km	- 1 track
28.715 km	- 1 track
45.000 km	- 1 track
55.550 km	- 1 track
65.962 km	- 1 track (Boorgoon Balloon)

76.458 km	- 1 track (Kinrola Balloon)
94.490 km	- 1 track
108.300 km	- 1 track

Hot Box / Hot Wheel Detectors (HBD/HWD)

Hot Box / Hot Wheel Detectors are located at the following locations:

Hay Point - North Goonyella

33.987 km	- 2 tracks (HWD)
76.780 km	- 2 tracks (HBD)
123.027 km	- 2 tracks (HBD/HWD)
150.620 km	- 2 tracks (HBD/HWD)
173.837 km	- 1 track (HBD)

Coppabella - Gregory Junction

5.227 km	- 1 track (HBD/HWD)
30.017 km	- 1 track (HBD)
53.040 km	- 1 track (HBD)
94.200 km	- 1 track (HBD)
115.400 km	- 1 track (HBD)

Wotonga - Blair Athol Mine

44.567 km	- 1 track (HBD)
76.400 km	- 1 track (HBD)

Wheel Impact Detectors

Flat wheel detection equipment operates on the Goonyella Line west of Waitara at 102.324 km.

Axle Counters

At some locations in Remote Controlled Signalling (RCS) Territory an axle counter system has been provided to detect occupancy of a section of track.

An axle counter at each end of a section determines whether an axle is entering or leaving the section and counts the number of axles passing the counter in each direction. By keeping an accurate count of axles into the section, then the number of axles out of the section, the system can determine if the section is occupied or not.

Weighbridges

In general weighbridges are located on balloon loop immediately after the loadout station for the purpose of overload detection.

On the Goonyella System weighbridges are located at:

North Goonyella

Goonyella

Riverside

Burton

Blair Athol Mine

Peak Downs

Saraji

Norwich Park

German Creek

Oaky Creek

Hail Creek

South Walker

Macarthur

Moranbah North

Moorvale

Carborough Downs

Isaac Plains

Millennium

Lake Vermont

The maximum permitted speed of trains over weigh-in-motion weighbridges is 10 km/h.

Train weigh data will be available to operators for their trains.

Information Systems

ViziRail is an Operational Information System developed specifically to meet business and regulatory requirements relative to managing operations on the Aurizon network. It provides valuable information regarding train performance, rail maintenance activities and network incident data.

This integrated scheduling and network monitoring tool provides Aurizon with a source of network information and is used within all Network Planning, Yard and Control Centres operated by Aurizon.

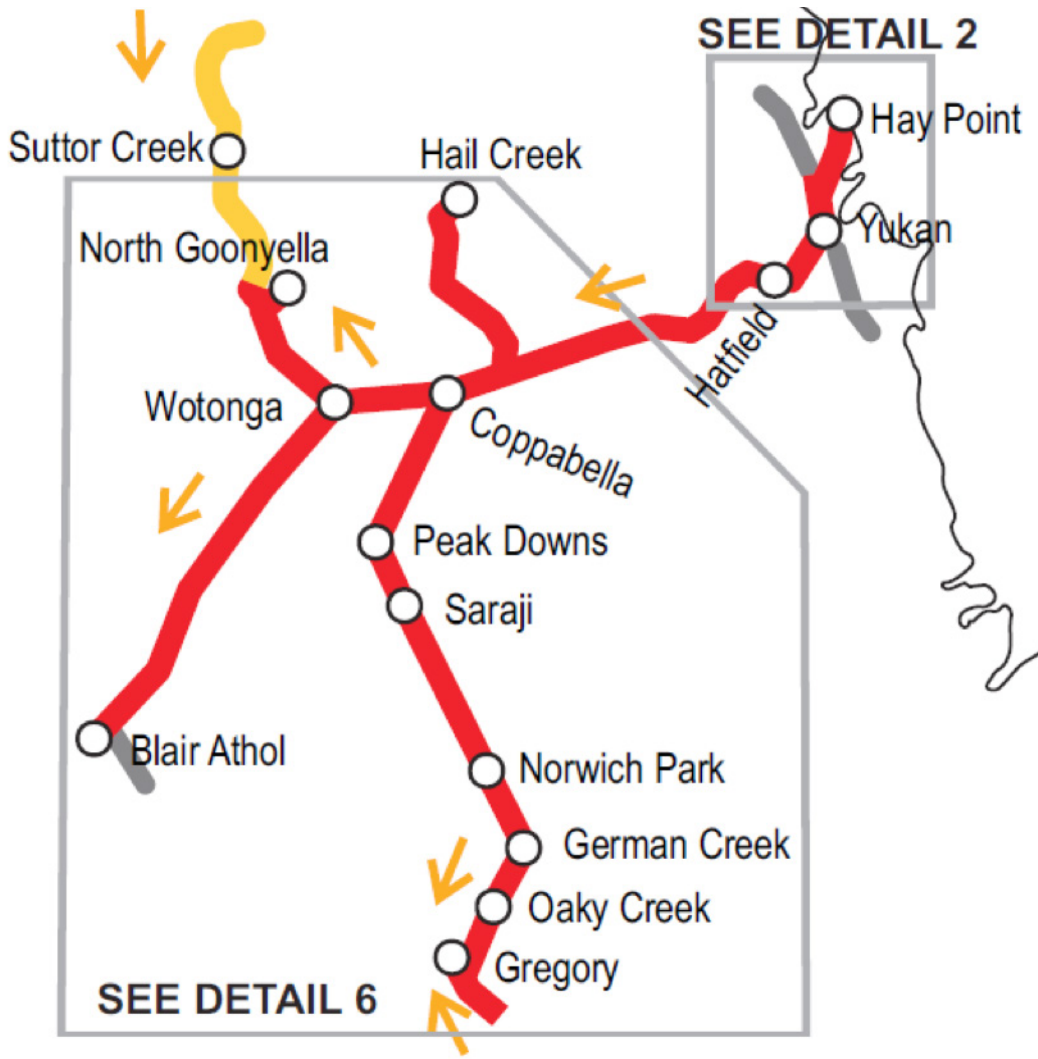
The integrated modules within ViziRail include:

- LTP - Long Term Planning module where timetable specific train templates are created and maintained. This module also includes the ability to generate scenario's for 'what if' analysis.
- STP - The Short Term Planning of trains including the ability to plan around train constraints and add ad hoc services
- Possessions - Planned infrastructure maintenance for the network, including actual data relating to activities that occur on day of operation
- Speed Restrictions - The capture of network speed restrictions, including when the restriction is imposed and lifted.
- Planning Graphs + Train Control Diagrams - A visual and interactive representation of a geographical area, these graphs display all train services, possessions and speed restrictions within the selected time frame. Ggraphs can be accessed in LTP or STP mode.
- Train Notices - Advice provided to stakeholders about activities on the network such as vehicle authority to travel, speed restrictions and possessions.
- Incidents - Capturing the events relating to incidents on the network, with the ability to provide advice to Aurizon management and customers as required
- ATR - Actual Train Running captures all day of operation events for a train, including delays, cancellations and terminations which can be linked to incidents as required
- BLD - Train Consists are linked to trains on day of operation and includes rollingstock validation, dangerous goods advice and data relating to the actual weight and length of trains.

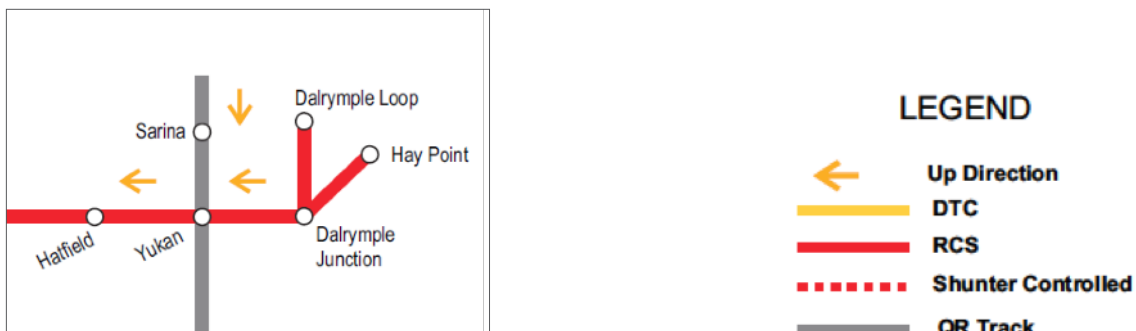
Operational Systems and Train Control

The Goonyella system is operated by Remote Control Signalling (RCS), with train movements controlled from Rockhampton.

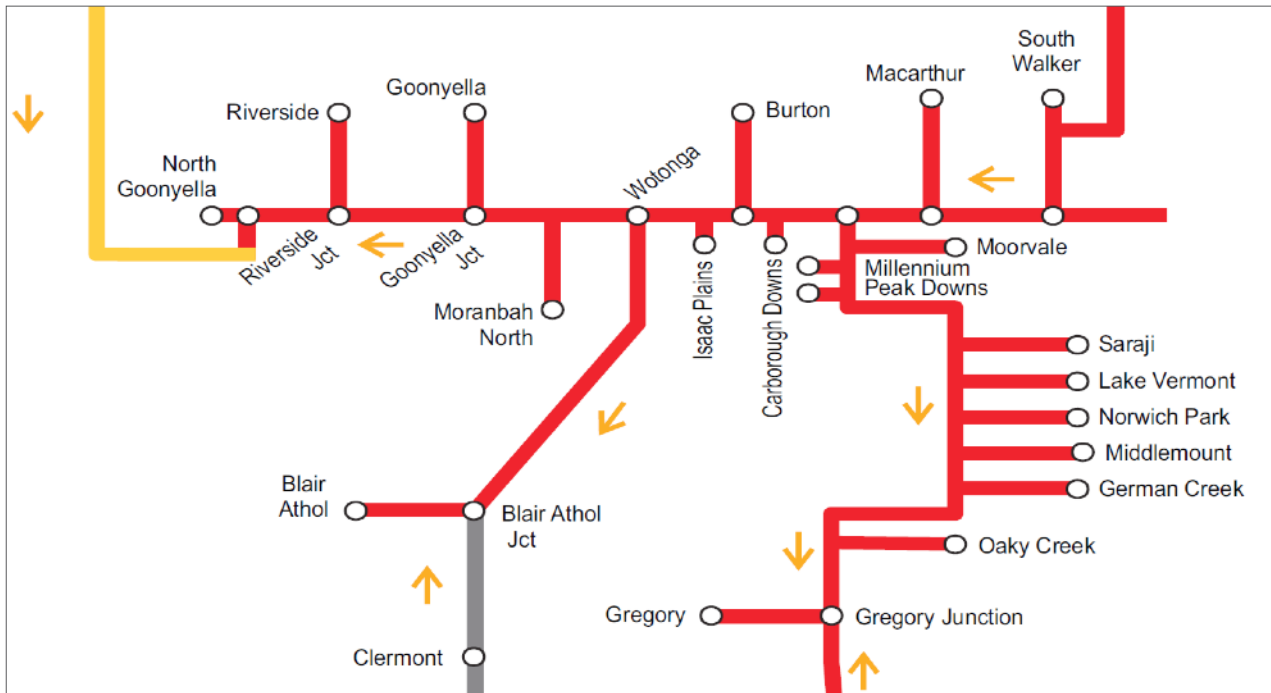
Train Control map:








Detail 2:



Detail 6:



LEGEND

-  **Up Direction**
-  **DTC**
-  **RCS**
-  **Shunter Controlled**
-  **QR Track**

Communications

Communications on the Goonyella System between Driver and Controller is via a UHF radio system (Train Control Radio - TCR) utilising a number of Aurizon Network channels and frequencies. Tranceivers “auto” switch channels to suit geographical location. Frequency specification and coverage details are available as part of the “Access Enquiry Process”.

Access to the Maintenance Supervisory Radio System (MSR) can be gained by using Aurizon Network telephone extensions depending on location or UHF radio system utilising QR channels.

In addition, all current locomotives (including Multiple Units and Miscellaneous Vehicles such as Rail Motors) carry and all units new to the system will be required to carry a UHF radio operating on QR Channel 1. This provides on-board and wayside communications including end to end, train to train and train to track gangs over a distance on average of 8 - 10 km.

Communications on board locomotives must conform to Aurizon Network Safety and Security Standard SAF/STD/0014/TEL/NET - Mobile Voice Radio Communications Systems.

Incident Recovery Time and Management

Historically it is anticipated that on the Goonyella System a minor incident could result in disruption to services for 6 hours and a major incident for 2 days. Incident recovery is dependent on the nature, severity and location of each unique incident that may occur on this system.

Rail / Road Interfaces

Operators on the Goonyella System will encounter 275 Rail / Road Interfaces categorised as follows:

Public (with Active Flashing Light/Boom Gate Control)	-	9
Public (with Passive Control - Signs)	-	13
Occupation (Private Access with Active Control)	-	5
Occupation (Private Access with Passive Control)	-	224
Aurizon Network Maintenance	-	28

These are located as follows:

	Public		Occupation		Maintenance
	Active	Passive	Active	Passive	Passive
Goonyella Line	4	2	4	96	19
Coppabella - Gregory Jct.	3	9	1	72	8
Wotonga - Blair Athol Mine	2	2	0	56	1

Rail Operations and the Environment

All railway operators are required to comply with all relevant State, Federal and Local Legislation and Laws, current at the time, relating to the management and protection of the Environment.

Aurizon Network currently has a number of licences and/or approvals for activities undertaken at either Aurizon Network facilities or on the Aurizon Network corridor. Aurizon Network's licences and approvals fall under two main areas:

1. Fixed Locations;

Aurizon Network has a number of licences for activities managed by its operational Business Groups in particular locations, such as refuelling locations.

2. Itinerant or Varied Locations;

Aurizon Network also has a number of licences for activities that occur at more than one location, such as maintenance activities.

Railway operators will need to ascertain with the Department of Environment and Heritage Protection or Other Regulatory Body their responsibilities in regard to obtaining an Environmental Authority (ies) for the type of operation proposed.

Copies of all Environmental Authorities administered in Queensland are available upon request from the Department of Environment and Heritage Protection.

Environmental Noise

The Transport Infrastructure Act recognises a railway as a beneficial asset, which is necessary for the community's environmental, social and economic well-being.

Queensland Rails Code of Practice for Railway Noise Management ("the Noise Code") nominates "planning levels" for railway noise which may be used as a guide in deciding a reasonable noise level for the activity. The Noise Code recognises, however, those levels may not be appropriate for an existing railway. It envisages that it may be reasonable to apply the levels only in the long term to allow time to progressively reduce any significantly adverse effects on the environmental values from its operation.

The long term planning levels are:

The long term planning levels are:

LAeq (24 hour)	65dBA
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LAmx	87dBA
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They are to be assessed one (1) metre in front of the most exposed part of the building facade of an affected noise sensitive place.

(Note: the Noise Code is a industry code approved by State Minister for Environment under Section 5478 of Environment Protection Act)

Code of Practice for Railway Noise Management

Noise is recognised as a form of environmental nuisance in the Environment Protection Act. Aurizon Network intends to meet its general environmental duty with respect to noise by implementing the Noise Code.

The purpose of the Noise Code is to provide a means by which Aurizon Network can demonstrate it is taking reasonable and practicable measures to minimise unreasonable interference with the acoustic amenity of neighbouring noise-sensitive communities from Aurizon Network's railway activities.

The Noise Code is a self imposed set of rules for carrying out all Aurizon Network railway activities.

It is not intended to manage the noise impacts of a third party's operational activities. It is to be made available to third parties operating trains on Aurizon Network infrastructure to the extent that its terms are reasonably applicable to those operators. It is expected that all Rail Operators will abide by the Code.

Wheel Squeal & Flanging

Wheel Squeal is caused by friction forces between the top of rail and wheel interface.

Whereas, flanging noise is predominantly caused by friction forces between the side of rail and wheel interface. Continuous or sustained wheel squeal produced primarily on the low rail side, is distinct from discontinuous "flanging noise" that is produced on the high rail side. Continuous wheel squeal is of a high level, and Aurizon Network experience is that it may cause significant community reaction, while flanging noise is of a lower level and is more accepted by the community.

Generally, tighter radius curves (i.e. under 300 metre radius) when associated with a number of rolling stock factors that promote wheel squeal, may result in squeal being produced. Rolling stock factors that may promote wheel squeal include:

- Higher wheel hardness
- Stiff primary suspensions
- High centre plate friction
- Worn wheel treads
- Misaligned axles
- Unmatched wheel tread diameters, and
- Incorrectly adjusted sidebearers

Noise Complaints

Aurizon Network is corporately committed to act towards its neighbours in a considerable and reasonable manner. This good neighbour commitment assumes a reasonable degree of tolerance from neighbours and a commitment by Aurizon Network to take action where appropriate.

Where Aurizon Network receives complaints about noise from railway activities for which Aurizon Network may be responsible, Aurizon Network responds to those complaints and maintains records of those complaints in accordance with its Environmental Management System (EMS).

Where available, generic data will be supplied on request to a third party operator who is proposing operations within a defined network. That data will indicate those areas where Aurizon Network has received prior complaints relating to its train operations. It will be made available when a third party operator is undertaking the development of its Environmental Investigation and Risk Management Report as part of its Access Agreement conditions.

Third Party Requirements

Any railway operator obtaining access to Aurizon Network network shall be required to commission an environmental investigation of the proposed operations. This investigation will be conducted by a suitably qualified person, reasonably acceptable to both parties.

In response to the findings of such an investigation, the operator shall produce an Environmental Investigation and Risk Management Report that identifies the risks of Environmental Harm associated with the operation and provides proposed controls to address the risks. This shall be reviewed by, and agreed with, Aurizon Network.

In addition, the operator shall have in place an EMS, which, amongst other things, has regard for the issues, risk and control measures identified in the Environmental Investigation and Risk Management Report. Further details on requirements for environmental issues can be found in Aurizon Network Access Undertaking.

Aurizon Network has determined that it holds no EMS documentation that, without disclosure to a third party operator, would either:

- Compromise or restrict a third party's operations or increase or place at risk the environmental performance of the third party operator or itself, and
- Limit or restrict the abilities of a third party operator to develop such documentation that would not be reasonably expected of the operator to develop on its own behalf, commensurate with the size and subsequent environmental risks of the proposed operations and the organisational resources available to it, to undertake such operations.

Any EMS documentation (wholly or partially) identified as specifically relating to the control of corridor infrastructure (below rail) environmental issues, will be made available to the operator to assist in formulating appropriate and consistent operational (above rail) controls within their Environmental Investigation and Risk Management Report and EMS.

Coal Dust Mitigation

Network is corporately committed to reducing its operational impact on the communities and environment it operates through.

Coal dust is recognised as a form of environmental nuisance in the Environmental Protection Act 1994.

Aurizon Network has developed a Coal Dust Management Plan with the participants of the Central Queensland coal supply chain. This plan has been approved by the Department of Environment and Resource Management and includes dust mitigation methods which must be adhered to:

Mines

Mine loading methodologies at each loadout must deliver a veneered 'garden bed profile' to the wagon surface (e.g. edge of loaded coal 100mm below cant rail, levelled top, loading methodology to maximum volume [taking into consideration axle load] and minimises coal spillage outside the wage.

Install a veneering spray station at the mine loadout, spray the loaded coal surface with approved veneer and integrate veneering with loading methodology.

Mines and operators are to ensure their direct employment and contract loaders adhere to the changing loading requirements.

Ports

Export and domestic unloading facilities must ensure all wagons are fully unloaded and a clean wagon is presented to the rail corridor. A wagon cleaning facility or some other dust mitigation means should be implemented to reduce hang up coal and parasitic coal.

Maximum Train Length

The maximum length of trains is determined by:

- requirements for crossing/passing other trains
- requirements for braking performance of the train
- capacity of the route
- drawgear capacity
- train handling
- requirements for road/pedestrian access across the track

Where it is necessary for a train to cross, pass or be passed by another train, the maximum train length allowable shall be such that the comparison train length (including allowance for stretching and train handling) is not longer than the crossing loop length.

Variations of train length for a particular train configuration is possible and would need to be negotiated as part of access agreement negotiations.

Rolling Stock Braking Rate

Signal design parameters and train braking characteristics will be compared during the development of the Interface Risk Management Plan.

Future Infrastructure Improvements

Future improvements planned for the system as funding becomes available include:-

Current committed projects:

Rail Upgrade

Formation Strengthening

Network improvements identified but yet to be committed/funded have been broken into broad categories:

Maintain Reliability and Efficiency

Power Supply Equipment Replacement

Increase Capacity

Infrastructure Management and Access

Not all mainline, sidings, yards, load and unloading facilities that connect to Aurizon Network owned track is owned and managed by Aurizon Network.

Third party access to non Aurizon Network managed infrastructure is by commercial arrangement with the relevant party.

For more defined ownership of track please email - access.services@aurizon.com.au or visit our website www.aurizon.com.au and then click on the Contact Us link and then fill in your enquiry details.

APPENDIX A - Definitions (State wide)

Access Agreement

The agreement between Aurizon Network and a Railway Operator detailing all terms and conditions applicable to the operation of the Railway Operator's trains on the Aurizon Network.

Access Undertaking

A document approved by the Queensland Competition Authority (QCA) in accordance with the QCA Act 1997 (Q) that sets out principles for negotiating access to Aurizon Network's declared services.

Accreditation

Accreditation in accordance with part 4, Chapter 6 of the Transport Infrastructure Act 1994 (Queensland) and "Accredited" has a similar meaning.

ATP (Automatic Train Protection)

Automatic Train Protection is a computer controlled system designed to make sure the train

- does not exceed the current speed limit
- does not exceed the limit of authority generated by the interlocking (and usually indicated by a signal at STOP)
- does not make unreasonable train movements during shunting, when stationary, or at start up

AWS (Automatic Warning System)

Automatic Warning System is designed to

- provide an in-cab visible and audible indication of the aspect displayed in the next signal
- prompt and warn the train driver of a RESTRICTED signal aspect displayed in the next signal
- stop the train if the driver fails to acknowledge the AWS alarm of a RESTRICTED signal aspect

Axle Counters

At some locations in Remote Controlled Signalling (RCS) Territory an axle counter system has been provided to detect occupancy of a section of track.

An axle counter at each end of a section determines whether an axle is entering or leaving the section and counts the number of axles passing the counter in each direction. By keeping an accurate count of axles into the section, then the number of axles out of the section, the system can determine if the section is occupied or not.

Block Train

A train consisting entirely of similar classes of wagons of axle loads over 12.2 tonnes marshalled together for a certain class of traffic. The definition is also extended to cover trains in which 12 or more such wagons loaded to more than 12.2 tonnes gross per axle are included within a length of 315 metres or less of the train.

Comparison Train Length

Static train length and 2% of static train length (train handling allowance) + 125mm per vehicle (for coupler and draw gear tolerances).

Crossing Loop Length

The maximum length in metres of the train which can be accommodated in the loop to allow normal operation of the signalling systems for crossing or passing movements.

Daily Train Plan (DTP)

Collectively, the scheduled times for all Train Services operating on Aurizon Network's Rail Infrastructure and any Planned Possession on a particular day.

Declared Services

Services declared as available for access by third party operators in accordance with the QCA Act 1997 (Q).

Declared Infrastructure

Infrastructure declared as available for access by third party operators in accordance with the QCA Act 1997 (Q).

Design Neutral Temperature

The rail temperature at which the track is designed to be stress free as defined in Aurizon Network's Civil Engineering Track Standards Part 2 (CETS 2).

Direct Traffic Control (DTC)

Direct Traffic Control (DTC) is an absolute block safeworking system used to control the movement of trains in non-signalled territory.

Central to DTC is an on-board DTC computer which displays authorities stored in its database. The relevant authority is activated by the train crew following an exchange of codes between the crew and the controller. Codes are exchanged verbally using the train control radio.

The procedures governing the operation of DTC are detailed in Aurizon Network's Safety Management System Standard saf/std/0041/swk/net "Direct Traffic Control Manual".

Dragging Equipment Detectors (DED)

A mechanism positioned on sections of track to detect any dragging equipment on train.

Dragging Equipment Detectors Alarm (DED Alarm)

Part of the Aurizon Network System which advises the Train Controller either by a computer prompt message that a D.E.D. has been activated and the train driver by a recorded voice message.

Electromagnetic Compatibility (EMC)

The ability of an equipment or system to function satisfactorily in its electromagnetic environment without introducing intolerable electromagnetic disturbances to anything in that environment.

EPP (Noise)

Environmental Protection (Noise) Policy 1997; Subordinate Legislation to the Queensland Environmental Protection Act 1994.

FMS

Freight Management System (FMS), a mainframe computer based application that monitors overall train performance.

Force Majeure Event

Means any cause, event or circumstance, or combination of causes, events or circumstances, which is beyond the reasonable control of the Party affected thereby and which by the exercise of due diligence such Party is not reasonably able to prevent or overcome, including but not limited to, results of abnormal weather conditions, act of God, breakdown of any facilities or machinery or unavailability of essential equipment, strikes or other industrial dispute.

Hot Wheel & Bearing Detectors (HWD/HBD)

Heat sensors located at strategic locations on the system that identify abnormal temperatures in wheels and wheel bearings as the train passes over, transmits a signal to the train control panel that necessitates an inspection of the suspect wagon and remedial action

KP

Kilometre Post

Line Code

Line Code, a unique alpha-numeric identifier applied to a section of track on the network and usually run from junction point to junction point. Each numeric identifier is unique and can be further rolled up into Corridors using the alpha identifier.

LSC

Line Section Code, a unique alpha-numeric identifier applied to a section of the network.

LWR

Long welded rail. Rail that has mechanical rail joints spaced at intervals between 110m and 220m.

Master Train Plan (MTP)

Collectively, the scheduled times as advised by Aurizon Network from time to time for all Train Services operating on Aurizon Network's Rail Infrastructure where such scheduled times remain unchanged from week to week, and any Planned Possessions.

Nominal Rail Size

Rail sizes 20, 31 and 41 kg/m are all nominal rail sizes used to group together a range of rail types and sizes originally designated in the imperial unit "lb/yd". The term "nominal" is used in recognition of the variation in the dimensions, mass and engineering properties of the rails in this category.

Railway Operator

A person who has, or is seeking, Access from Aurizon Network to operate Train Services on the Rail Infrastructure and who is, or who will become, Accredited in respect of those Train Services.

Red-Boarded Line

A line with a stop board attached to the rail preventing traffic entering the section

Remote Controlled Signalling (RCS)

A system of safeworking where train movements are governed by aspects displayed in Colour Light Signals which are controlled from a remote location and by the passage of trains. Some colour light signals and points may be released by the Train Controller to be operated from a local area by using:

- a local control panel;
- an electrically released shunting frame;
- a zone released shunting system, or
- emergency push buttons.

Railway Operators trains are expected to meet existing signalling standards to ensure track circuits and other signalling equipment operate safely and effectively - in particular Aurizon Network's Safety Management System SAF/STD/0006/SIG/NET "Principles for the Signalling of Trains" must be complied with.

Remote Train Overview Application (RTOA)

A PC based system providing real time operational information, gathering information on train running and rail network status for immediate and continuously updated display and historical analysis.

Rolling stock Authorisation Process

The process for determining and validating rolling stock compliance and registration as detailed in Aurizon Network's Safety and Security Standard SAF/STD/0068/RSK/NET - Rolling stock Compliance, Validations and Registration.

Being a multi-tier client-server application, different levels of access/security ensure confidentiality of an Operator's train performance statistics.

Standard Train

The predominant type of train operating on the line/system.

SWR

Short welded rail. Rail that has mechanical rail joints spaced at intervals less than 110m.

Train Authorisation

The process for acceptance of a train configuration whose rolling stock is registered under Aurizon Network's Safety Management System SAF/STD/0068/RSK/NET - Rolling stock Validation, Acceptance and Registration.

Unit Train

A train composed entirely of the one class and one draw gear classification of rolling stock.

Universal Traffic Control (UTC)

A PC based train control supervisory system that provides the means to remotely control train movements over a large area and provide management and train users with real time train related information.

ViziRail

A fully integrated scheduling, possession planning, monitoring and reporting tool for managing the Aurizon Network's below-rail network.

ViziRail also supports the provision of all QCA and Queensland Transport (QT) reporting requirements.

Weather Monitoring System (WMS)

Remote weather monitoring stations providing critical information regarding temperature, rainfall and stream levels.

Wheel Impact Load Detector (WILD)

In track monitoring system to identify wheel flats.

YCS

Yard Control System (YCS), a mainframe computer based application that monitors overall location and status of approved rolling stock.

