STRESS TESTING

ENSURING A ROBUST QUEENSLAND RAIL CITYTRAIN NETWORK TIMETABLE

DATE
JUNE 2017

PREPARED BY
QUEENSLAND RAIL

QueenslandRail

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ENSURING A ROBUST QUEENSLAND RAIL CITYTRAIN NETWORK TIMETABLE

Queensland Rail is determined to ensure that Queenslanders can access the reliable, on-time rail services they expect and deserve. In his Commission of Inquiry report, Phillip Strachan, now Chair of Queensland Rail, recommended that the sustainability of the current timetable be assessed to *"ensure the provision of stable services and sufficient training capacity to facilitate the long-term return to desired service levels"*.

Over the past few months, Queensland Rail has been undertaking this stress testing process, along with developing a range of forecasting and modelling tools to ensure accurate and timely knowledge of train crew supply and demand in the medium to long-term.

Following rigorous stress testing, Queensland Rail's analysis at this time has confirmed the current timetable should remain in place. However, this analysis has identified key stress points for the timetable over the next 12 months which will require active management through contingency measures. The Citytrain Response Unit has conducted assurance activities on the data which underpins this analysis and supports Queensland Rail's conclusion.

TIMETABLE SUSTAINABILITY DECISION FRAMEWORK

This framework has been developed to support effective planning and creates a model that can be applied in a consistent and repeatable manner into the future.

FORECAST

Forecast five-year rolling traincrew demand and supply

ASSESS

Assess forecast and identify periods of timetable stress

PLAN

- Stress period — Contingency plan
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Develop contingency plans to mitigate periods of stress

Utilise predetermined service level/contingency options that have been agreed with TransLink

FORECAST

Conduct daily, weekly, and monthly reviews of the forward train crew demand and supply to identify and reassess stress periods and contingencies

Reassess identified stress periods at least eight weeks out from commencement and review and refine contingencies as required

COMMUNICATE AND IMPLEMENT

In conjunction with TransLink, communicate timetable changes to the public in a timely manner

Execute and implement contingency plans and manage through day of operations measures. Evaluate learnings post implementation

SUPPLY & DEMAND INFLUENCERS ON TIMETABLE SUSTAINABILITY

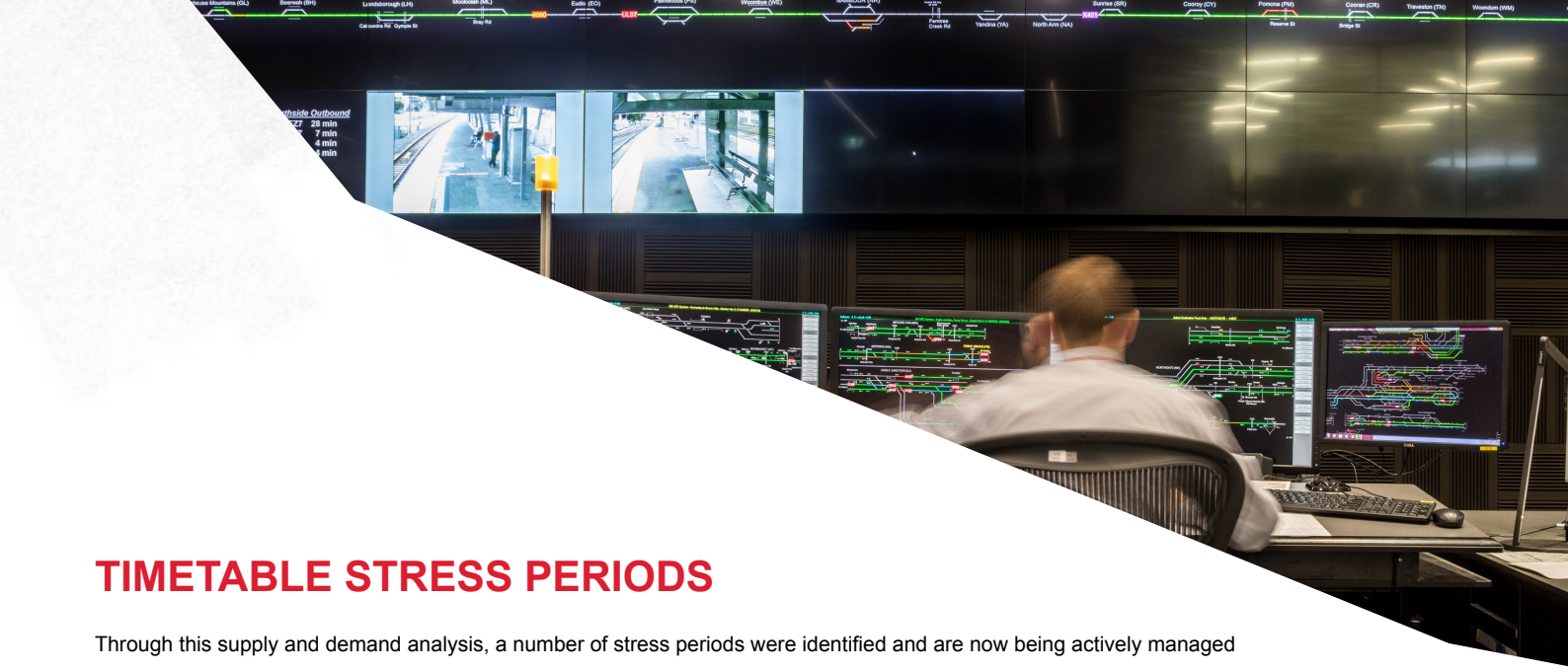
There are a range of supply and demand factors which influence the availability of train crew to deliver our services.

Train crew supply

- New train crew begin work
- Proactive train crew leave management
- Improved train crew fatigue management
- Productivity improvements

Train crew demand

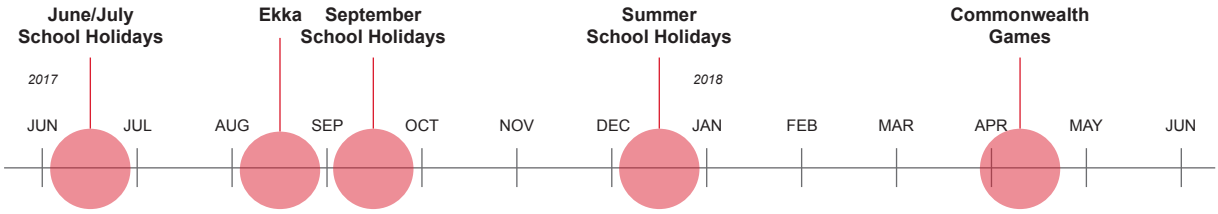
- Special events, for example – sporting events and the Ekka
- Work trains required for maintenance and project activity
- New Generation Rollingstock (NGR) fleet rollout
- Additional services required for Commonwealth Games
- Training requirements



TIMETABLE STRESS PERIODS

Through this supply and demand analysis, a number of stress periods were identified and are now being actively managed through contingency measures. Stress periods identified include school holiday periods, the roll-out of the New Generation Rollingstock (NGR) during 2017 and the 2018 Commonwealth Games. These periods exist while measures are being actively taken to increase the supply of drivers and guards.

Queensland Rail has been working for considerable time with the Department of Transport and Main Roads on an integrated public transport solution for the Gold Coast 2018 Commonwealth Games, given the expected demand levels and complexity of the service delivery requirements. When this work is finalised it will be formally communicated and travel advice will be available with good advance notice for customers to plan their games journey.



Contingency measures

There are a range of mitigation strategies Queensland Rail will use to effectively manage stress periods. At least eight weeks out from each stress period, these contingency options will be refined and developed into a robust plan to maintain service reliability. In the event that this is not possible, other measures may need to be taken such as timetable adjustments. In addition, as with all railways, operating services is a dynamic process which can require changes to maintain rail traffic flow as part of 'day of operations' management planning.

Other contingency measures include:

- Move, delay or cancel non-passenger services
- Actively manage planned leave levels
- Operate with built-in contingency levels of extra drivers and guards to operate passenger services in a last-minute shortfall situation
- Use train crew willing to work overtime, while we progress towards increasing train crew numbers and decreasing reliance on overtime
- Improved planning, which means Queensland Rail is now better managing rosters to ensure train crew do not reach compulsory fatigue break days at critical times in the roster, which increases train crew availability
- Implementing efficiency improvements
- Proactively implementing short-term timetable changes, ensuring highly patronised services and special events are protected, with an example being the Easter 2017 timetable alterations and the June/July school holidays.

JUNE/JULY SCHOOL HOLIDAY SERVICE CHANGES

A number of special sporting events occur in the June/July school holiday period, which require additional train services. This places pressure on resources and is a key stress point which is being actively managed.

An extensive analysis of all the possible mitigating measures to maintain the current timetable during this period has taken place. This work has demonstrated that to maintain the current timetable over this period would create an unacceptably high risk of service disruptions, potentially at peak times.

As a result, to maintain reliability and based on patronage levels, we are implementing a reduced timetable on three Sundays in the June/July holiday period (25 June, 2 July and 9 July).

Special services will operate to protect highly patronised services and transport passengers to and from key sporting events.

The high level of winter sporting events will require 86 extra trains over the June/July period for crowds in excess of 200,000 people across 10 events.

JUNE/JULY SPECIAL EVENTS

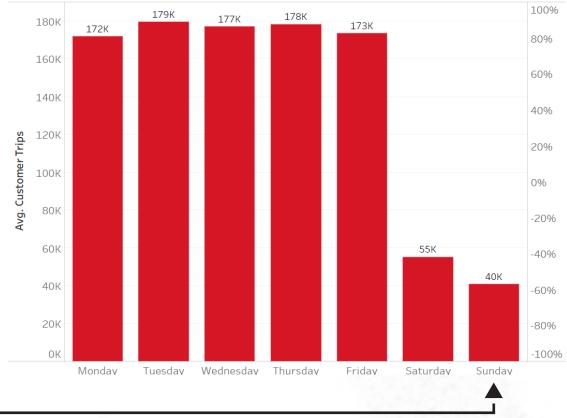
Queensland Rail is committed to providing extra train services to ensure people travelling to sporting events can get home safely.

DATE	EVENT	~ CROWD SIZE	APPROXIMATE ADDITIONAL SERVICES
24 June	Wallabies V Italy	~ 30,000	10
30 June	Broncos V Storm	~ 30,000	10
30 June	Titans V Dragons	~15,000	6
1 July	Suns V Nth Melb	~10,000	3
2 July	Boxing match - Pacquiao V Horn	~45,000 (TBC)	18
7 July	Reds V Brumbies	~17,000	2
12 July	State of Origin	~52,000	18
15 July	Suns V Collingwood	~15,000	3
15 July	Titans V Sharks	~15,000	6
20 July	Broncos V Bulldogs	~30,000	10

FAST FACTS

1. The current Citytrain timetable delivers more than 7800 services per week
2. Each week, more than 3400 train crew shifts are required
3. The Citytrain network covers more than 800 kilometres of track in South East Queensland
4. The fewest customers travel by train on Sundays

Average Customer Trips by Weekday in 2016



IMPROVED FORECASTING AND VISIBILITY

Queensland Rail has made significant improvements to increase visibility of short, medium and long-term train crew supply and demand. This means we have a much greater capacity to forecast potential stress periods in the timetable and actively manage them.

THEN

Queensland Rail has historically operated with a 58 hour maximum forward view for train crew rostering. With changes to the timetable or increased demand, Queensland Rail was not able to adequately plan for train crew shortfalls.

Following a recommendation from the Commission of Inquiry in February, Queensland Rail has developed mechanisms for forward forecasting to reduce the risk of service unreliability and improve delivery of our training schedule to boost the number of drivers and guards.

NOW

Eight-week train crew management plan

Queensland Rail is now undertaking detailed analysis which drills down into the shifts and movements of individual train crew as part of an eight-week train crew management plan. This model is being further developed and refined over time to ensure robust resource management. In addition, we have boosted our resources to consistently work in this area to ensure sufficient focus is maintained on this vital task.

Five-year rolling forecast

Queensland Rail has developed a long-term train crew demand and supply model. This supports Queensland Rail's workforce planning to target a healthy train crew supply level, increasing service levels for customers and managing our reliance on overtime to levels of comparable businesses.

This proprietary model applies science and rigour to better predict timetable stress points over a rolling five-year period. It provides a holistic forward view of train crew supply and demand using a variety of forecasting techniques. The outcome is much greater visibility, giving Queensland Rail the ability to accurately plan and manage resources.

This means that, for the first time, Queensland Rail is able to forecast stress periods in the timetable and work to reduce the risk of service unreliability while maintaining the training schedule required to boost driver and guard numbers.

NEXT STEPS

- **Continue to refine our forecasting techniques**
- **Develop detailed management plans for upcoming stress periods**
- **Work on further workplace efficiencies to improve productivity**
- **Continue work to recruit and train drivers and guards to boost train crew workforce**
- **Continue detailed design work to modernise and accelerate training programs**