

Victorian Interstate Infrastructure Lease KPI Report
2nd Quarter 2017/2018 (Oct-Dec)

ARTC



TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	3
A. PERFORMANCE AGAINST KPI BENCHMARKS.....	3
B. PERFORMANCE AGAINST KPI TARGETS.....	3
C. ADDITIONAL SUPPORTING MEASURES	4
1. PERFORMANCE AGAINST KPI'S.....	5
1.1. Track Geometry Targets	5
1.2. Total Transit Time Delay Targets	7
1.3. Transverse Rail Defect Target.....	11
1.4. Bridge Target	12
1.5. Track Capability	12
2. ADDITIONAL SUPPORTING MEASURES	13
2.1. Average Track Quality Index (TQI).....	13
2.2. Sleepers Replaced.....	14
2.3. Timber Deck Bridges	15
2.4. Monthly Signal Failure Analysis	15
2.5. Broken Rails.....	15
2.6. New Permanent Speed Restrictions	16
2.7. Track Recording Car Geometry Faults	17

Executive Summary

In accordance with the Victorian Interstate Infrastructure Lease, this document presents the KPI Report under the lease covering the period October 2017 to December 2017.

A. Performance against KPI Benchmarks

All lease KPI Benchmarks have been met during the reporting period.

Note: KPI Benchmarks are the Lease Targets and the KPI Targets are the Aspirational Goals.

B. Performance against KPI Targets

Track Geometry Targets

The track geometry quality KPI Targets for top, twist, line and gauge were met for all of the 8 targets during the reporting period, for both KPI Regions.

Total Transit Time Delay Targets

The KPI Target was met for both loco-hauled passenger and XPT trains during the reporting period, for both KPI Regions.

Transverse Defect Target

The KPI Target for the number of reported transverse defects was met for the reporting period, for both KPI Regions.

Bridge Target

The KPI Target for the number of bridges with speed or capability restrictions was met for the reporting period, for both KPI Regions.

Track Capability

The Maximum Axle Load for XPT between Melbourne and Albury is at 19 TAL, slightly under the KPI Target of 20 TAL. The KPI Targets for maximum speed and axle load capacity were met during the reporting period, for Melbourne Wolseley.

C. Additional Supporting Measures

Average Track Quality Index (TQI) on KPI Network

TQI data from the latest recorded run has been provided for each track section.

Sleepers Replaced on KPI Network

168 sleepers (Timber – 42; Steel – 0; Concrete – 126; Composite - 0) were installed during the reporting period. Details have been provided for each track section.

Timber Deck Bridges

A total of 46 bridges have timber decking that has been in service for 20 years or more.

Monthly Signal Failure Analysis

The Victorian Department of Transport have been granted access to ARTC's SIMS database and review the signal failure trends as required.

Broken Rails

The total number of broken rails as at the end of the reporting period has been shown for each KPI Region.

New Permanent Speed Restrictions

There have been no changes to the permanent speed restrictions during the reporting period.

Track Recording Car Geometry Fault data

Track recording car geometry fault data provided since Q1 2011/12.

1. Performance against KPI's

1.1. Track Geometry Targets

Track geometry quality KPI Results for top, twist, line and gauge are provided below for each KPI Region.

The KPI Targets for track geometry quality have all been met.

Measure	KPI Target (Aspirational) Melbourne - Albury	KPI Benchmark (Lease Target) Melbourne - Albury	KPI Result Oct 17 to Dec 17
Top	11.5	18.4	9.1
Twist	7.3	11.7	5.3
Line	7.9	12.6	5.0
Gauge	10.5	16.8	2.9

Measure	KPI Target (Aspirational) Melbourne - Wolseley	KPI Benchmark (Lease Target) Melbourne – Wolseley	KPI Result Oct 17 to Dec 17
Top	11.2	17.9	7.7
Twist	6.9	11.0	4.6
Line	7.6	12.2	4.8
Gauge	6.5	10.4	3.2

TQI data provided is from the latest recorded run.

Figure 1: Melbourne-Albury Track Quality Index

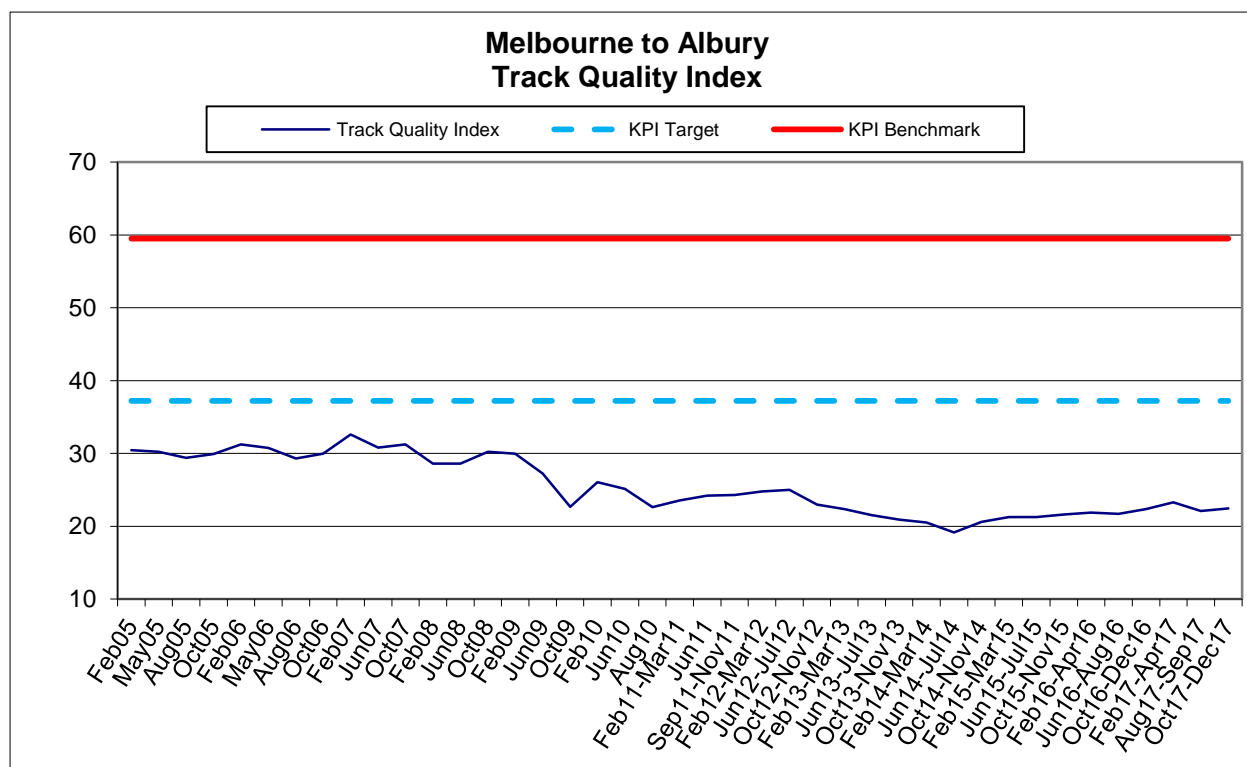
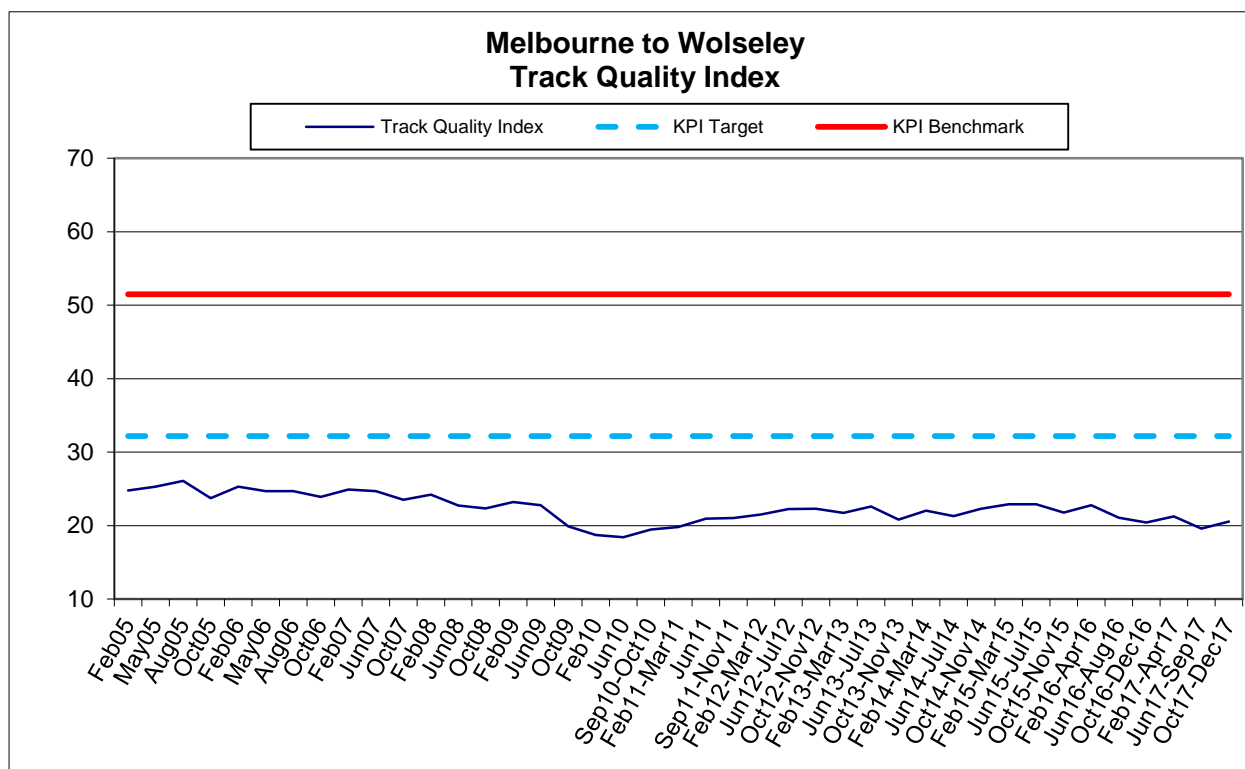


Figure 2: Melbourne-Wolseley Track Quality Index



1.2. Total Transit Time Delay Targets

KPI Results for time loss resulting from temporary speed restrictions are provided below for each KPI Region.

The KPI Target was met for both loco-hauled passenger and XPT trains between Melbourne and Wolseley and between Melbourne and Albury.

Measure Transit Time Delay (mins/trip)	KPI Target (Aspirational)	KPI Benchmark (Lease Target)	KPI Result (Loco-hauled Passenger 115 km/h) Oct 17 to Dec 17	KPI Result (XPT 130 km/h) Oct 17 to Dec 17	Result (Super Freighter 115 km/h) Oct 17 to Dec 17
Melbourne – Albury	20	30	5.0	7.3	11.1
Melbourne – Wolseley	40	80	16.5	N/A	30.5

The KPI Target and Benchmark above, do not apply to Super Freighters and that the result for Super Freighters is added for information purposes only.

Figures 3-9 show the longer term trends for time loss due to temporary speed restrictions in each KPI Region.

Figure 3: Melbourne to Albury Transit Time Delay for Loco Hauled Passenger trains

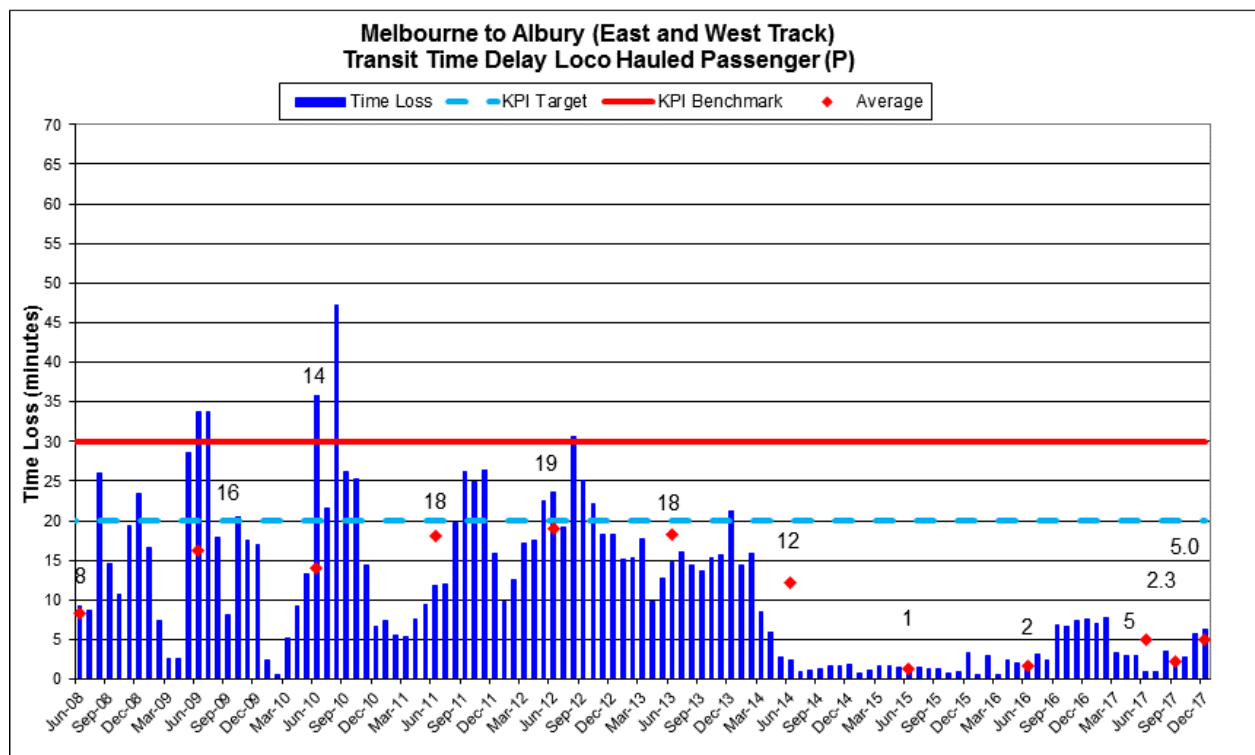


Figure 4: Melbourne to Albury Transit Time Delay for XPT trains

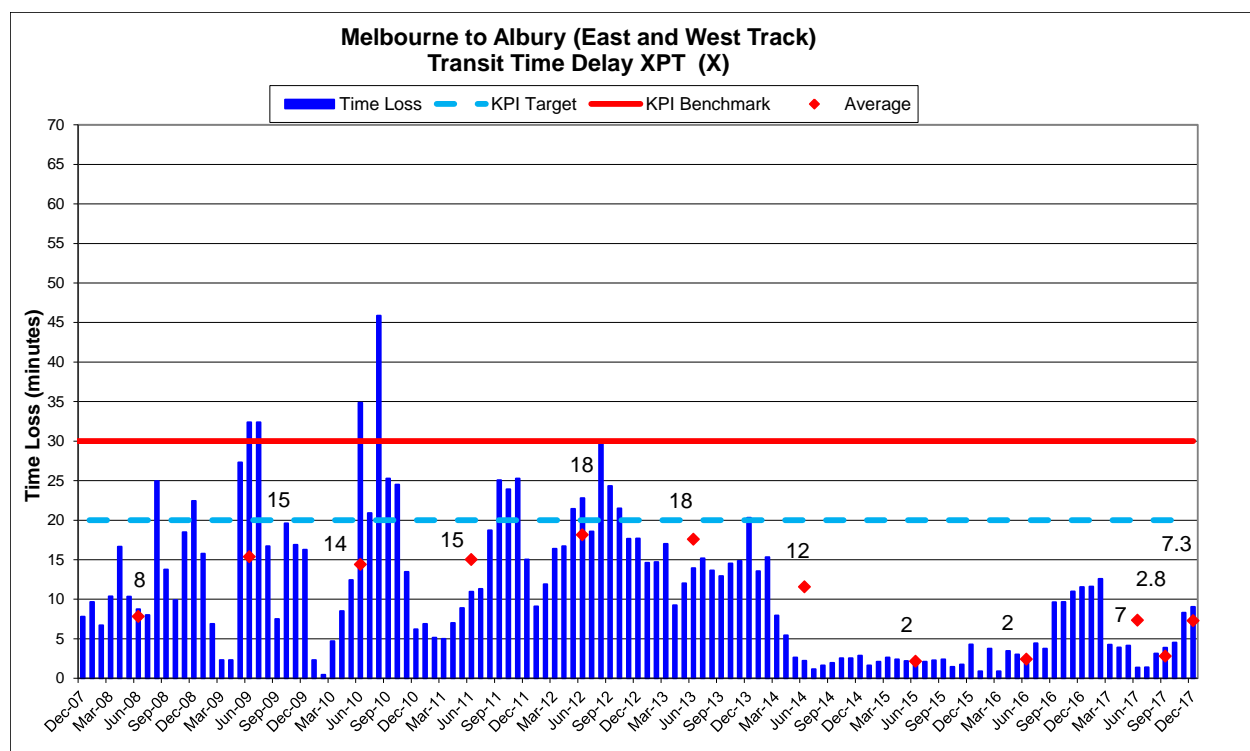


Figure 5: Melbourne to Albury Transit Time Delay (via East Track) for Loco Hauled Passenger trains

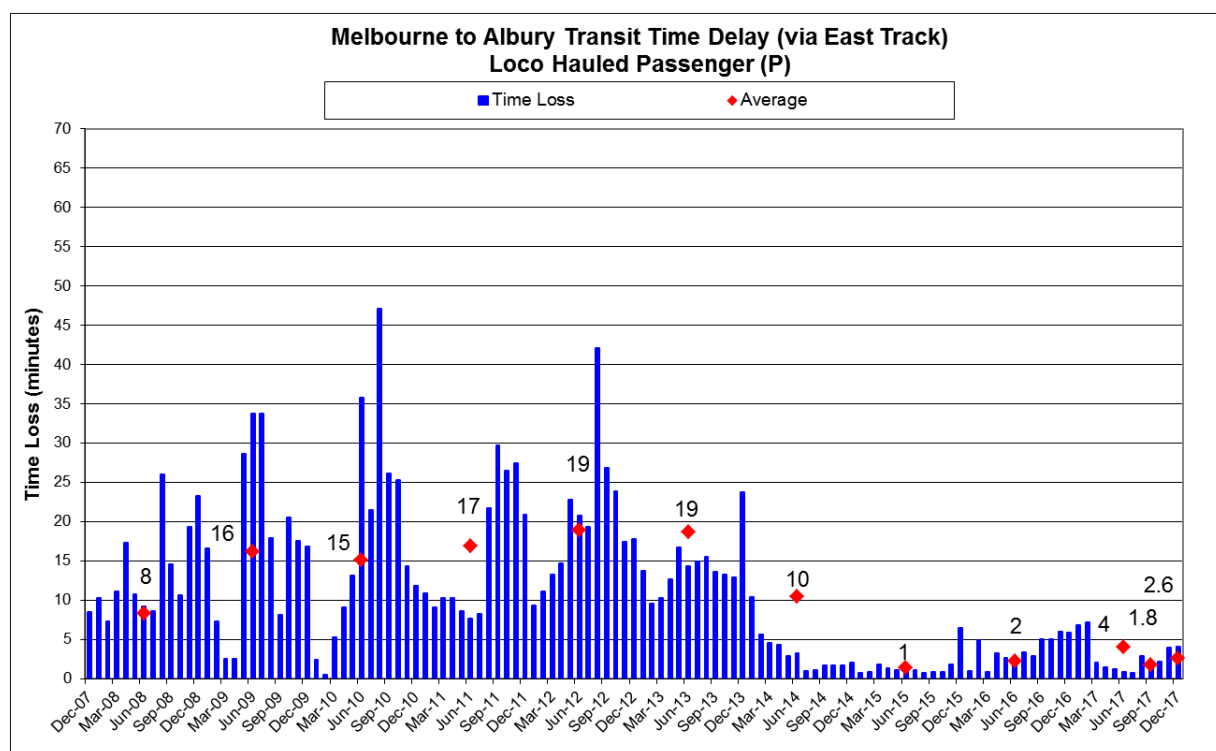


Figure 6: Melbourne to Albury Transit Time Delay (via East Track) for XPT trains

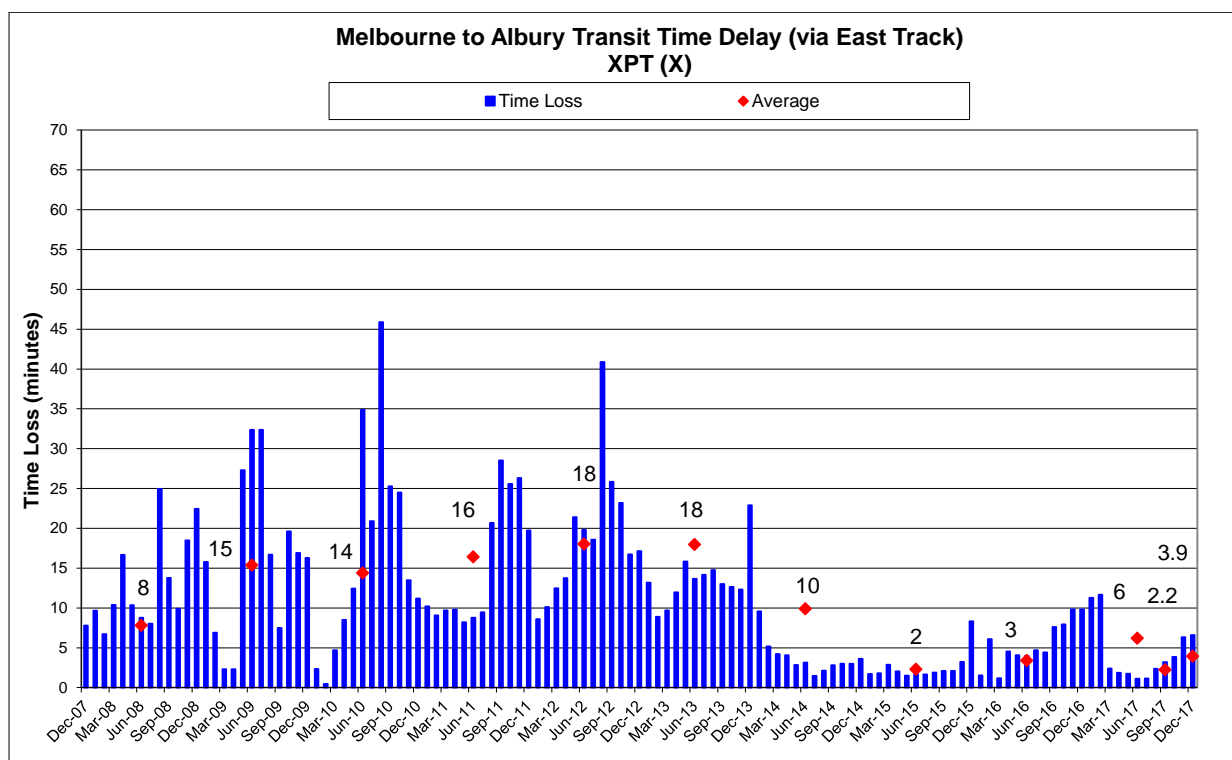


Figure 7: Melbourne to Albury Transit Time Delay (via West Track) for Loco Hauled Passenger trains

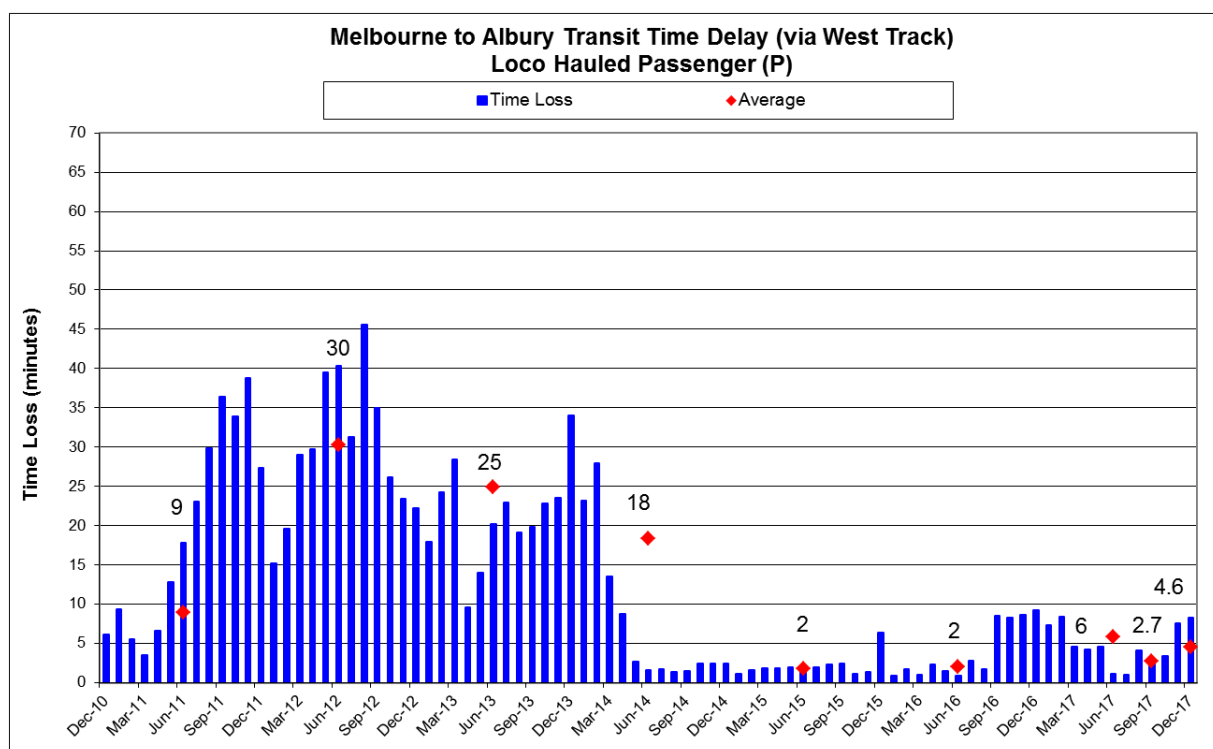


Figure 8: Melbourne to Albury Transit Time Delay (via West Track) for XPT trains

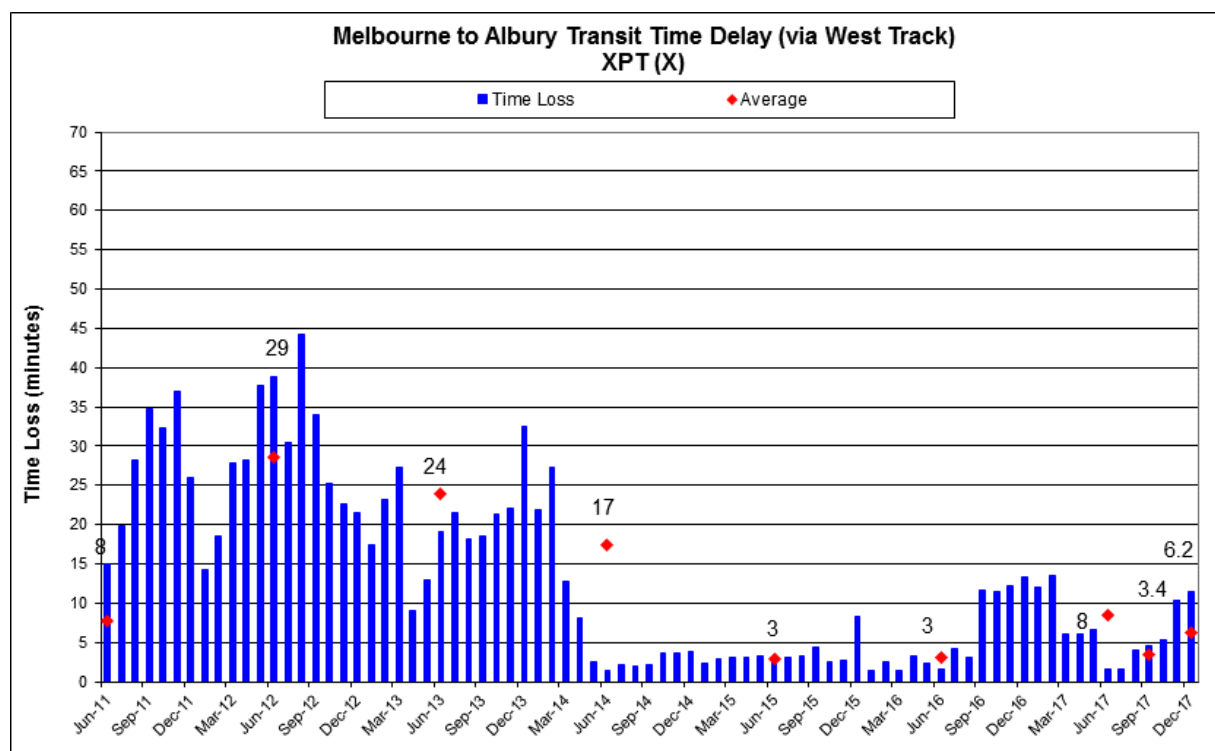
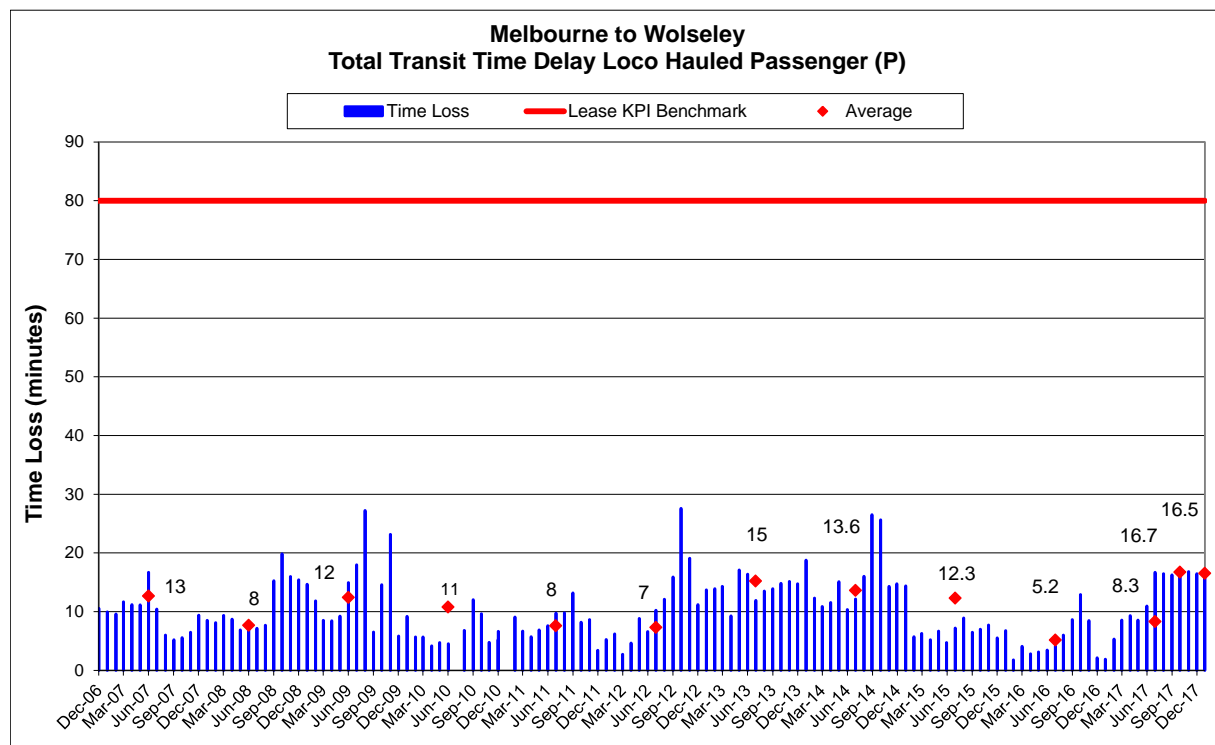


Figure 9: Melbourne to Wolseley Transit Time Delay for Loco Hauled Passenger trains



1.3. Transverse Rail Defect Target

KPI Results for the occurrence of transverse rail defects in each KPI Region are provided below.

The KPI Targets have been met in both KPI Regions.

Measure	KPI Target (Aspirational) Melbourne - Albury	KPI Result 17/18 total found	KPI Result Oct 17 to Dec 17
Number of Transverse Rail Defects (Number in place at the time of measurement / year	400	0	0

Measure	KPI Target (Aspirational) Melbourne - Wolseley	KPI Result 17/18 total found	KPI Result Oct 17 to Dec 17
Number of Transverse Rail Defects (Number in place at the time of measurement / year	380	0	0

Next ultrasonic testing for Victoria will commence in February 2018.

1.4. Bridge Target

KPI Results for the extent of speed or capability restricted bridges are provided below.

The KPI Target for the number of bridges with speed restrictions has been met for both KPI Regions.

Measure	KPI Target (Aspirational) Melbourne - Albury	KPI Result Oct 17 to Dec 17
Number of Bridges with Temporary Speed Restrictions	30	0

Measure	KPI Target (Aspirational) Melbourne - Wolsley	KPI Result Oct 17 to Dec 17
Number of Bridges with Temporary Speed Restrictions	25	0

1.5. Track Capability

KPI Results for the maximum speed and axle load capacity of each KPI Region are provided below.

The Maximum Axle Load for XPT between Melbourne and Albury is at 19 TAL, slightly under the KPI Target of 20 TAL. KPI targets for each KPI Region have been met during the reporting period; however it appears that the original KPI target for Loco hauled passenger (V/Line) Melbourne to Albury was incorrectly stated at 130km/h. The N class loco has always had a max speed of 115km/h between Melbourne and Albury.

Measure	KPI Target Melbourne - Albury	KPI Result Oct 17 to Dec 17
Loco hauled passenger (V/Line)	115 km/h (N Class or lighter)	115 km/h (N Class or lighter)
XPT (Countrylink)	130 km/h @ 20 TAL	130 km/h @ 19 TAL
VLocity DMU (V/Line)	130 km/h	130 km/h

Measure	KPI Target Melbourne - Wolsley	KPI Result Oct 17 to Dec 17
Loco hauled passenger (V/Line)	115 km/h (N Class or lighter)	115 km/h (N Class or lighter)
XPT (Countrylink)	N/A	N/A
VLocity DMU (V/Line)	115 km/h	115 km/h

2. Additional Supporting Measures

2.1. Average Track Quality Index (TQI)

The average TQI and percentage of track with a TQI greater than 25 are provided below.

Line	Average TQI previous quarter	Average TQI current quarter	% of track with TQI greater than 25 previous quarter	% of track with TQI greater than 25
Serviceton to Maroona	19.6	20.0	16.9%	18.3%
Maroona to Vite Vite	19.0	19.6	11.5%	14.0%
Vite Vite to Gheringhap	17.5	19.3	11.1%	15.7%
Gheringhap to Nth Geelong	24.5	25.6	42.7%	45.5%
Nth Geelong to Newport	20.8	22.2	22.0%	27.3%
Newport to Tottenham	46.7	44.2	82.4%	85.3%
Tottenham to Dynon	50.5	51.6	92.5%	91.4%
Tottenham to South Dynon	<i>These two lines have been combined due to track rationalisation and are now described as Tottenham to Dynon</i>			
Dynon to West Footscray				
Tottenham to Patullos Lane	25.3	26.0	45.5%	49.0%
Patullos Lane to Broadford	22.0	23.5	30.1%	39.7%
Broadford to Albury	20.4	21.0	24.2%	26.4%
Albury To Seymour (West Line)	21.7	21.3	26.3%	24.4%

TQI data provided is from the latest recorded run.

Note: Some previous quarter figures vary to those in the last report due to recovery of missed recording.

2.2. Sleepers Replaced

Sleepers installed on the track sections identified in the lease are provided below. 168 sleepers (Timber – 42; Steel – 0; Concrete – 126; Composite - 0) were installed during the reporting period.

	Serviceton to Maroona	Maroona to Vite Vite	Vite Vite to Gheringhap	Gheringhap to North Geelong	North Geelong to Newport	Newport to Tottenham	Tottenham to South Dynon	Dynon to West Footscray	Tottenham to Patullos Lane	Patullos Lane to Broadford	Broadford to Albury	Broadford to Albury (old broad)
Timber								42				
Steel												
Concrete								6	120			
Other												
Concrete 09/10												

The total quantity and percentage of the population of sleepers, by type, on the track sections as at 31 December 2017 are provided below.

	Serviceton to Maroona	Maroona to Vite Vite	Vite Vite to Gheringhap	Gheringhap to North Geelong	North Geelong to Newport	Newport to Tottenham	Tottenham to South Dynon	Dynon to West Footscray	Tottenham to Patullos Lane	Patullos Lane to Broadford	Broadford to Albury *	Broadford to Albury * (old broad)
Timber total quantity	-	-	-	7344	-	1377	4727	2223	32890	-	-	-
Timber total percentage	0%	0%	0%	40%	0%	12%	48%	56%	79%	0%	0%	0%
Steel total quantity	-	-	-	-	-	-	-	-	-	-	-	-
Steel total percentage	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Concrete total quantity	396216	94207	175000	10989	97167	9636	4407	1745	8788	82500	680212	288702
Concrete total percentage	100%	100%	100%	60%	100%	86%	44%	44%	21%	100%	100%	100%
Other total quantity	-	-	-	-	-	250	804	-	-	-	-	-
Other total percentage	0%	0%	0%	0%	0%	2%	8%	0%	0%	0%	0%	0%

*Sleeper population Broadford to Albury has been 100% concrete for a number of years and has been adjusted to reflect this.

2.3. Timber Deck Bridges

A total of 47 bridges have timber decking that has been in service for 20 years or more. The data includes bridges on the west track.

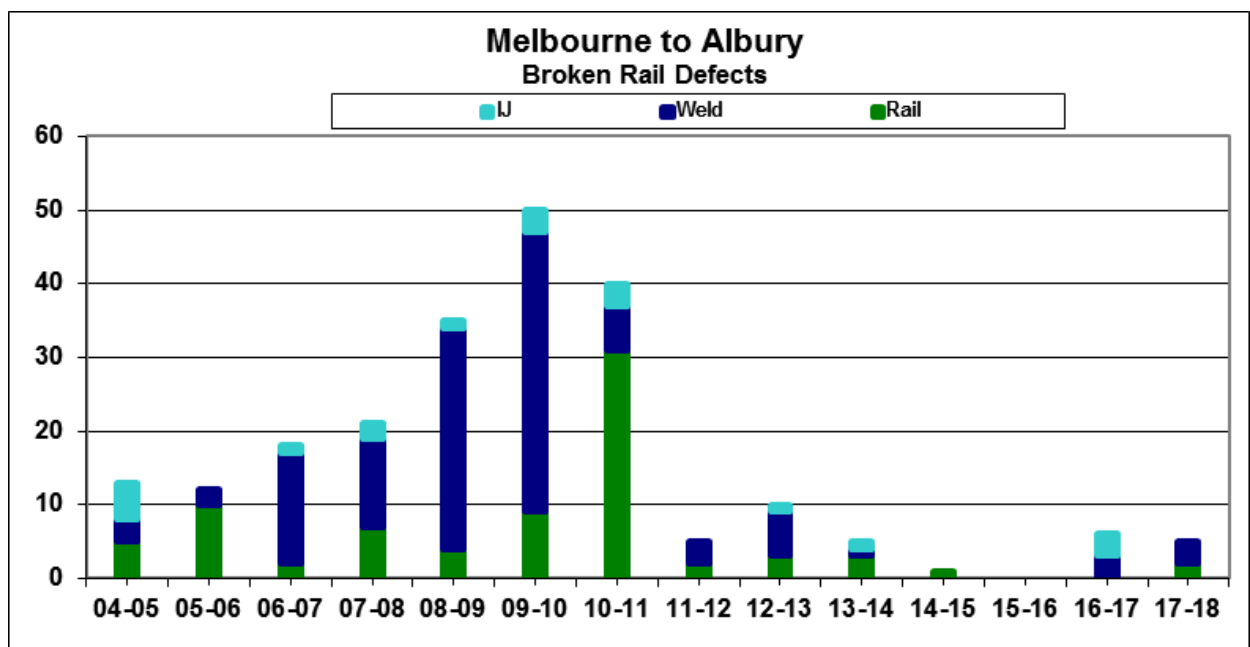
Corridor	Number of bridges with timber decking that is more than 20 years old	Number of bridges > 20 years old as a % of the total number of bridges with timber decking
Melbourne / Albury	41	100%
Melbourne / Wolseley	5	38%

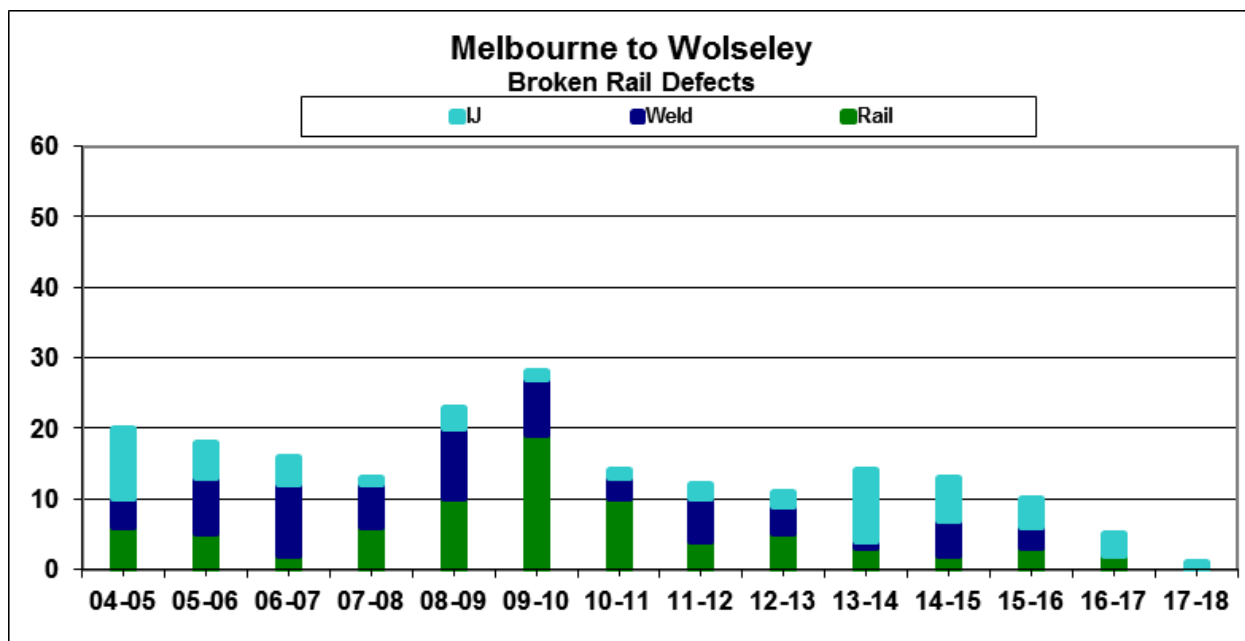
2.4. Monthly Signal Failure Analysis

The Victorian Department of Transport have been granted access to ARTC's SIMS database and review the signal failure trends as required.

2.5. Broken Rails

The broken rail data provided below includes details of broken rails, broken welds and broken insulated rail joints for each KPI Region.





2.6. New Permanent Speed Restrictions

There have been no changes to the permanent speed restrictions during the reporting period.

2.7. Track Recording Car Geometry Faults

Track recording car geometry fault data provided since Q1 2011.

[illegible]

Track Recording Car Geometry Fault History																					
Melbourne / Albury																					
Faults		2016/2017				2017/2018				2018/2019				2019/2020				2020/2021			
COP (Current)	ACOP (Pre 06/12)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
E1	E	8	27	9	391(2)*	50	44														
E2	U1	18	44	18	189(0)*	63	40														
P1	U2	24	73	49	306(9)*	105	95														
P2	P1	89	254	171	475(28)*	261	271														
N	P2																				
Melbourne / Wolseley																					
E1	E	1	25	7	2	45	23														
E2	U1	1	28	15	5	17	20														
P1	U2	2	52	25	16	38	59														
P2	P1	4	142	124	66	65	131														
N	P2																				

Note: The above numbers are the initial raw data from the recording car and may include spurious faults. All reported faults are inspected and actioned by ARTC field staff in accordance with ARTC standards.

Note: 2016/2017 Quarter 4 Geometry data was impacted by sunlight which contributed to the high fault count. Data shown in () exclude geometry fault from the affected area.