

Victorian Interstate Infrastructure Lease KPI Report  
2<sup>nd</sup> Quarter 2020/2021 (Oct-Dec)

ARTC



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## **Executive Summary**

In accordance with the Victorian Interstate Infrastructure Lease, this document presents the KPI Report under the lease covering the period October 2020 to December 2020

### **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**

25 sleepers (Timber – 5; Steel – 0; Concrete – 0; Composite - 20) were installed during the reporting period.

### **Timber Deck Bridges**

A total of 23 bridges have timber decking that has been in service for 20 years or more.

### **Monthly Signal Failure Analysis**

The Department of Economic Development, Jobs, Transport and Resources (DEDJTR) 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<br>(Aspirational)<br>Melbourne - Albury | KPI Benchmark<br>(Lease Target)<br>Melbourne - Albury | KPI Result<br>Oct 20 to Dec 20 |
|---------|--|---|--------------------------------|
| Top     | 11.5   | 18.4  | 6.1                            |
| Twist   | 7.3  | 11.7  | 4.1                            |
| Line    | 7.9  | 12.6  | 4.6                            |
| Gauge   | 10.5   | 16.8  | 3.0                            |

| Measure | KPI Target<br>(Aspirational)<br>Melbourne - Wolseley | KPI Benchmark<br>(Lease Target)<br>Melbourne – Wolseley | KPI Result<br>Oct 20 to Dec 20 |
|---------|--|---|--------------------------------|
| Top     | 11.2   | 17.9  | 8.0                            |
| Twist   | 6.9  | 11.0  | 4.7                            |
| Line    | 7.6  | 12.2  | 5.5                            |
| Gauge   | 6.5  | 10.4  | 3.4                            |

TQI data provided is from the latest recorded run.

Figure 1: Melbourne-Albury Track Quality Index

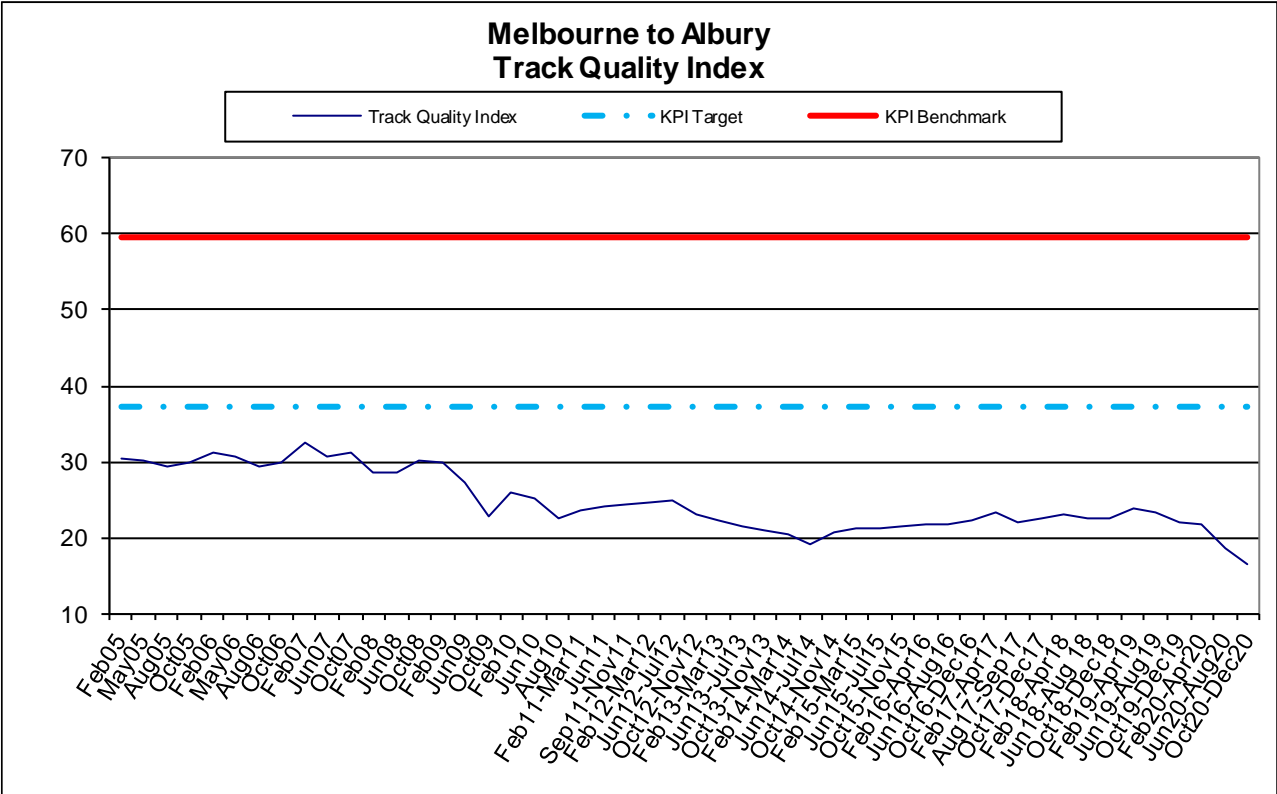
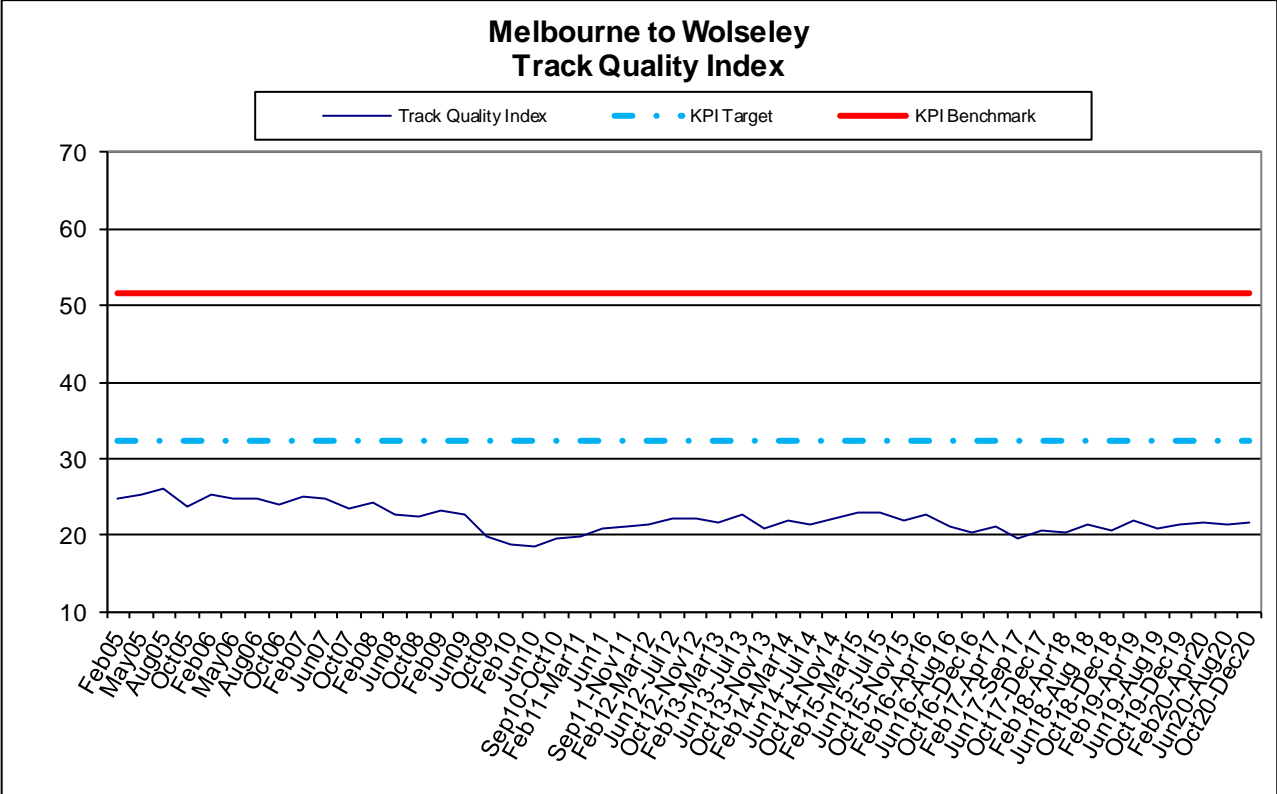


Figure 2: Melbourne-Wolseley Track Quality Index



## 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<br>Transit Time<br>Delay (mins/trip) | KPI Target<br>(Aspirational) | KPI Benchmark<br>(Lease Target) | KPI Result<br>(Loco-hauled<br>Passenger 115<br>km/h)<br>Oct 20 to Dec 20 | KPI Result<br>(XPT 130 km/h)<br>Oct 20 to Dec 20 | Result<br>(Super Freighter<br>115 km/h)<br>Oct 20 to Dec 20 |
|--|------------------------------|---------------------------------|--|--|---|
| Melbourne –<br>Albury                        | 20                           | 30                              | 9.7  | 7.3  | 18.7  |
| Melbourne –<br>Wolseley                      | 40                           | 80                              | 5.5  | N/A  | 12.8  |

The KPI Target and Benchmark above, do not apply to Super Freighters and 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.

Results for 20/21 have been updated, the KPI Target remains met for both loco-hauled passenger and XPT trains between Melbourne and Wolseley and between Melbourne and Albury.

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

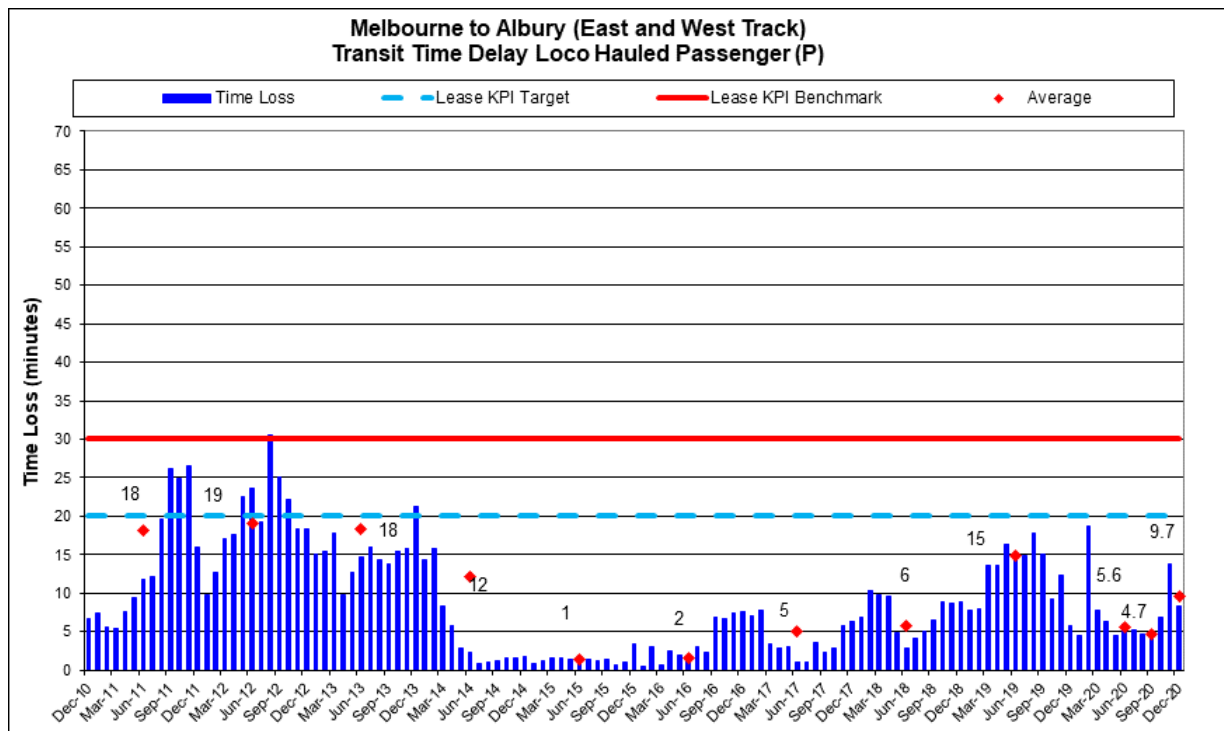


Figure 4: Melbourne to Albury Transit Time Delay for XPT trains

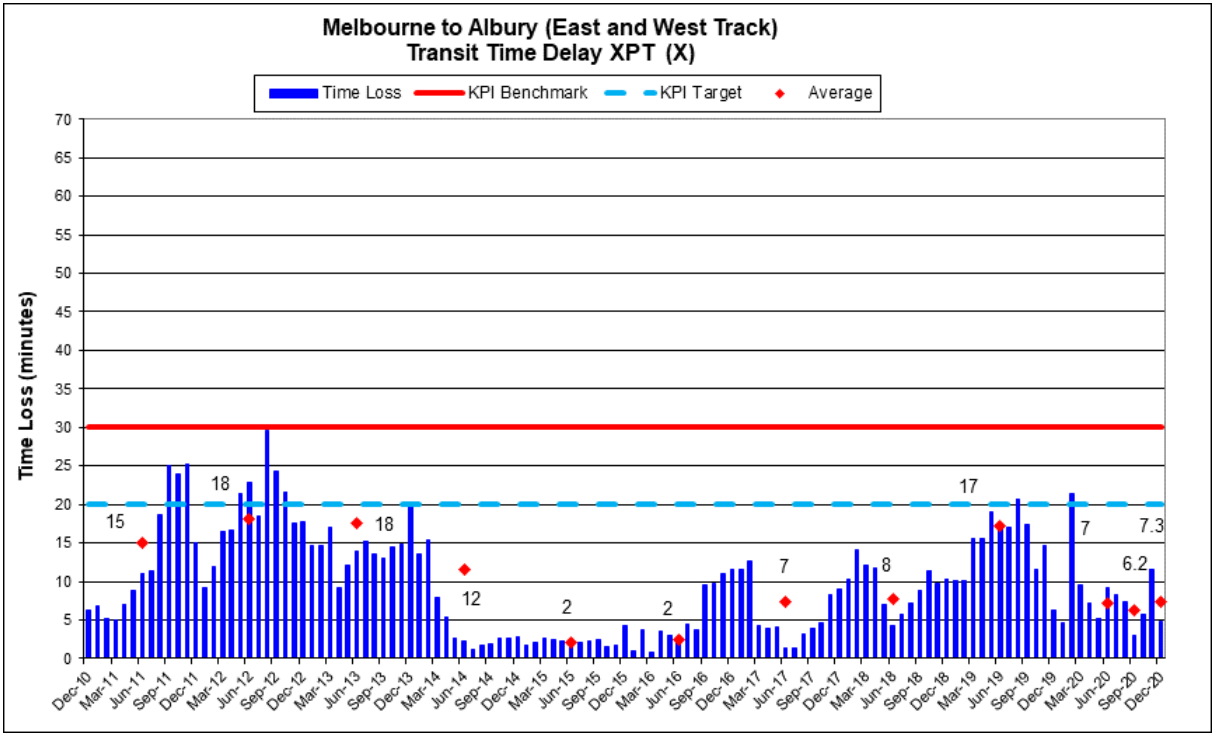


Figure 5: Melbourne to Albury Transit Time Delay (via East Track) for Loco Hauled Passenger trains

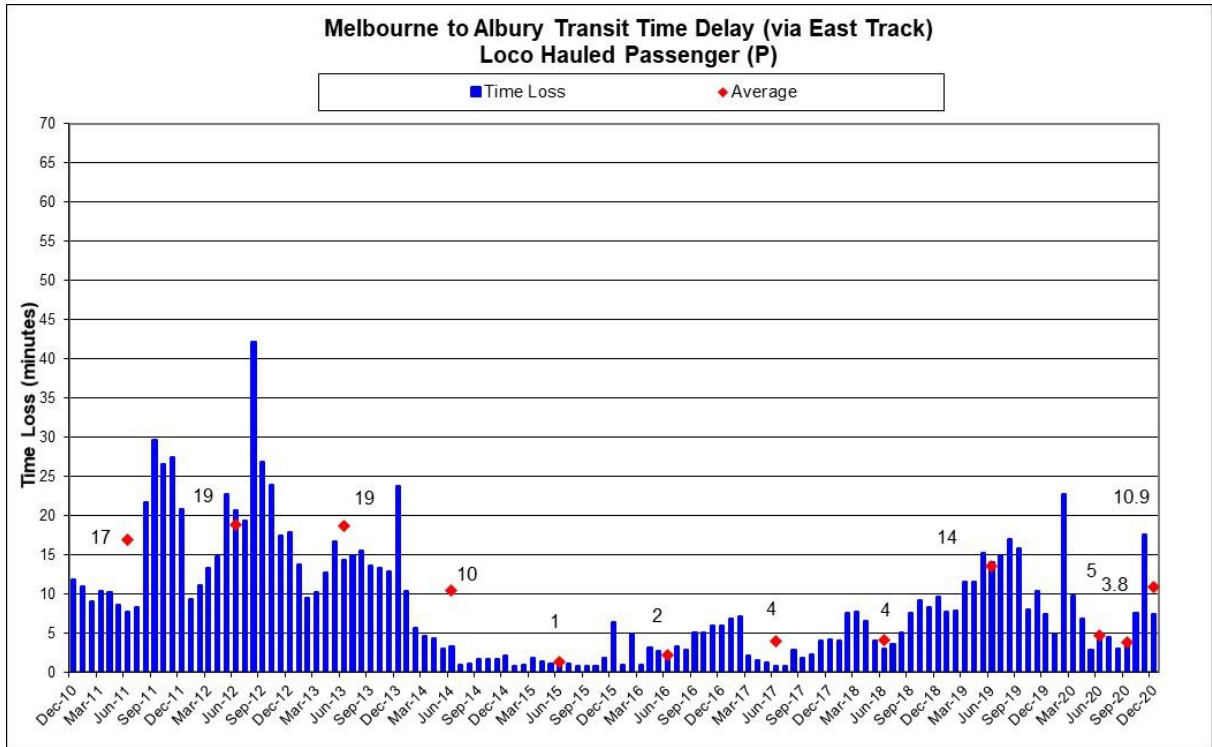




Figure 6: Melbourne to Albury Transit Time Delay (via East Track) for XPT trains

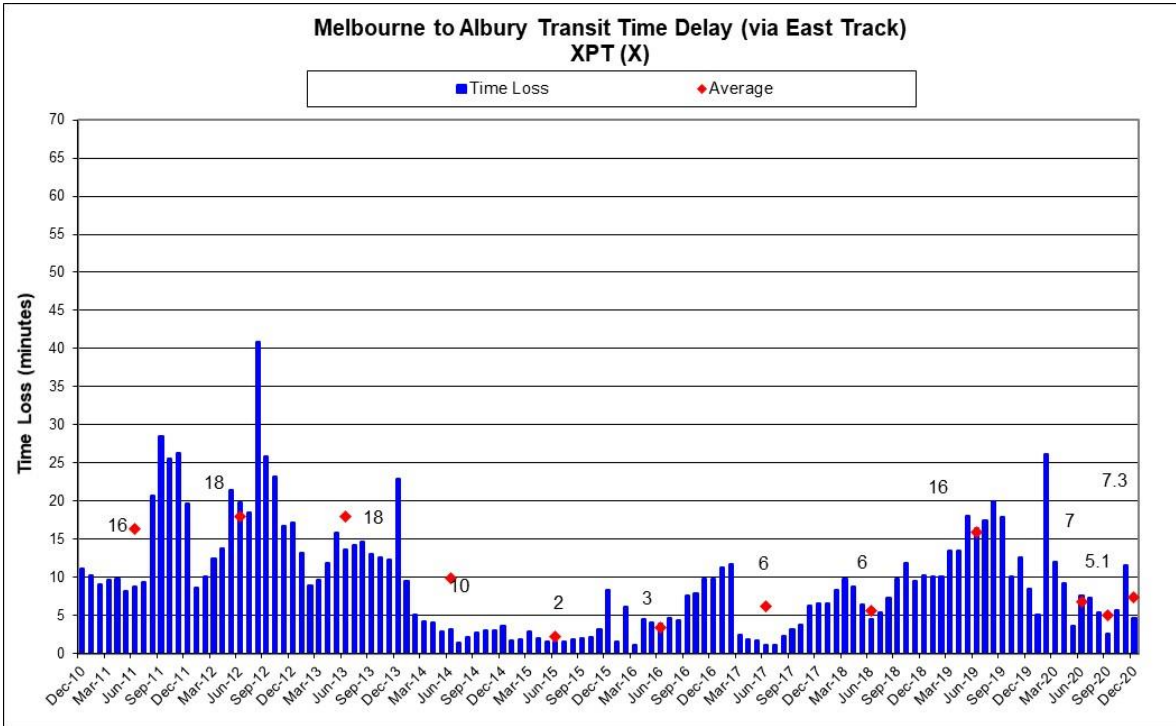


Figure 7: Melbourne to Albury Transit Time Delay (via West Track) for Loco Hauled Passenger trains

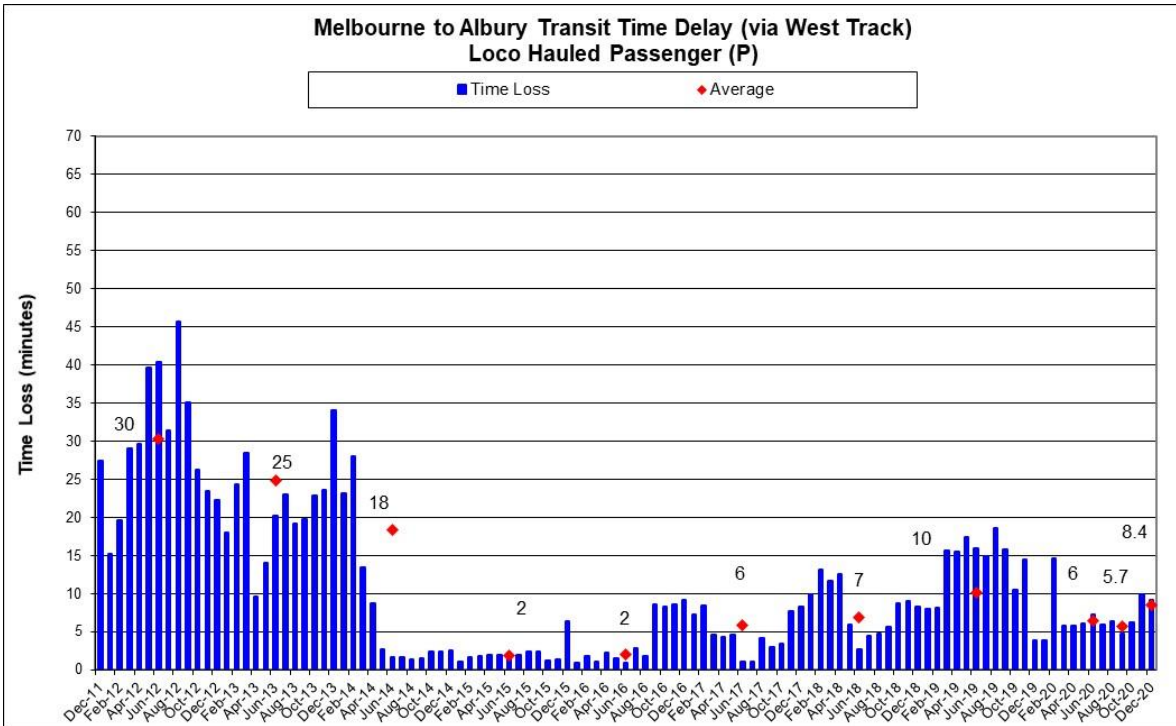


Figure 8: Melbourne to Albury Transit Time Delay (via West Track) for XPT trains

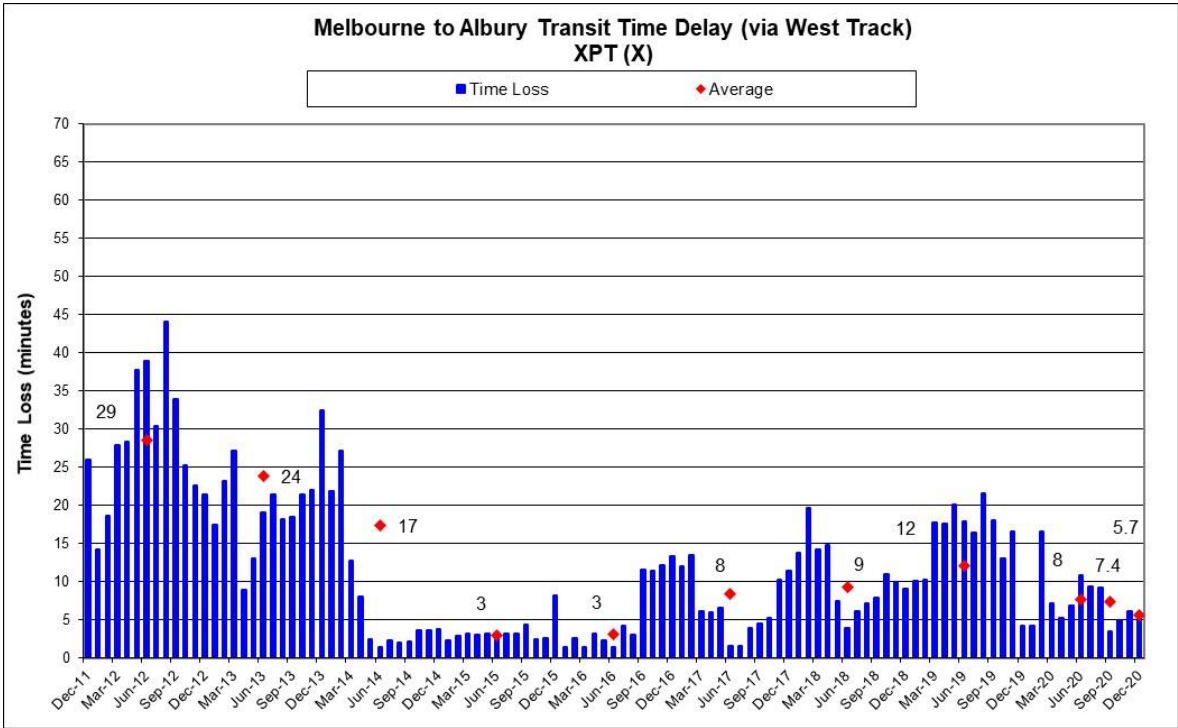
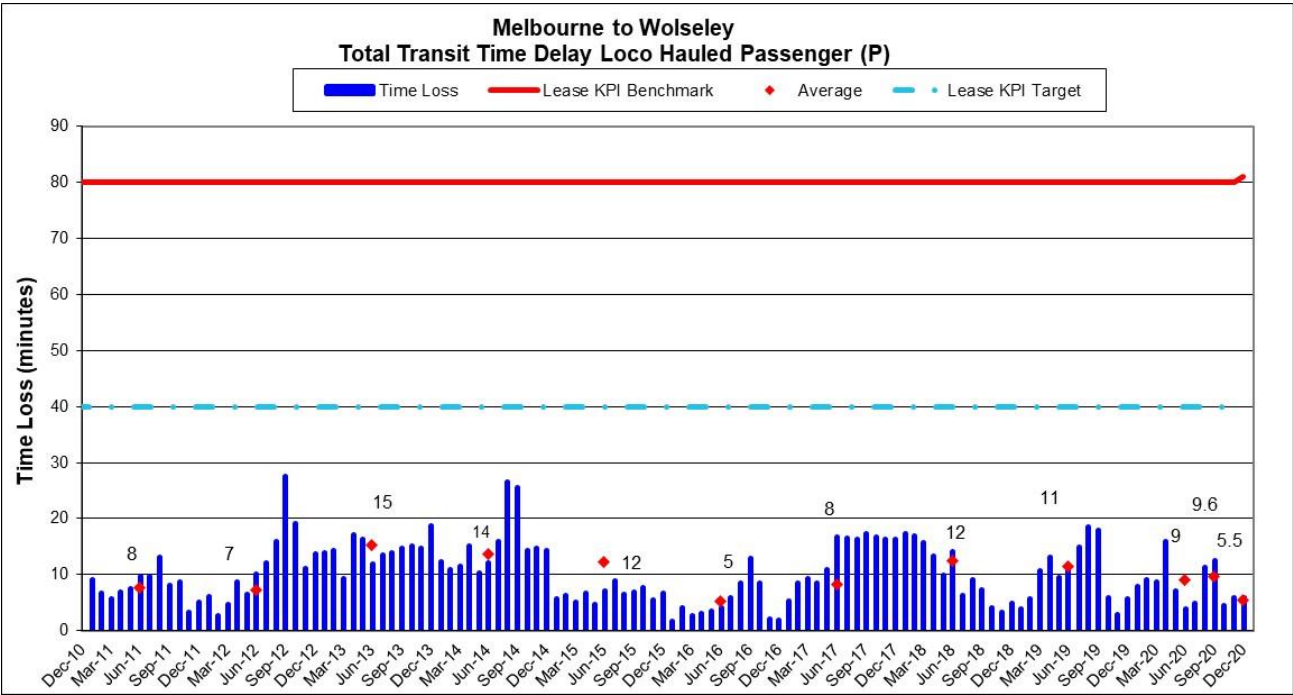


Figure 9: Melbourne to Wolseley Transit Time Delay for Loco Hauled Passenger trains



### 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.

| <b>Measure</b>   | <b>KPI Target<br/>(Aspirational)<br/>Melbourne - Albury</b> | <b>KPI Result<br/>20/21 total found</b> | <b>KPI Result<br/>Oct 20 to Dec 20</b> |
|--|---|---|--|
| Number of Transverse Rail Defects (Number in place at the time of measurement / year | 400   | 1                                       | 0                                      |

| <b>Measure</b>   | <b>KPI Target<br/>(Aspirational)<br/>Melbourne - Wolseley</b> | <b>KPI Result<br/>20/21 total found</b> | <b>KPI Result<br/>Oct 20 to Dec 20</b> |
|--|---|---|--|
| Number of Transverse Rail Defects (Number in place at the time of measurement / year | 380   | 0                                       | 0                                      |

#### 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)<br>Melbourne - Albury | KPI Result<br>Oct 20 to Dec 20 |
|---|---|--------------------------------|
| Number of Bridges with Temporary Speed Restrictions | 30  | 2                              |

| Measure   | KPI Target (Aspirational)<br>Melbourne - Wolseley | KPI Result<br>Oct 20 to Dec 20 |
|---|---|--------------------------------|
| 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<br>Melbourne - Albury | KPI Result<br>Oct 20 to Dec 20 |
|--------------------------------|----------------------------------|--------------------------------|
| 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<br>Melbourne - Wolseley | KPI Result<br>Oct 20 to Dec 20 |
|--------------------------------|------------------------------------|--------------------------------|
| 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           | 21.2   | 21.2                        | 23.6%  | 23.6%                               |
| Maroona to Vite Vite            | 19.0   | 18.2                        | 11.4%  | 10.9%                               |
| Vite Vite to Gheringhap         | 21.1   | 22.0                        | 22.1%  | 24.8%                               |
| Gheringhap to Nth Geelong       | 25.4   | 24.9                        | 45.7%  | 41.4%                               |
| Nth Geelong to Newport          | 21.8   | 22.0                        | 23.6%  | 26.0%                               |
| Newport to Tottenham            | 44.9   | 45.8                        | 80.6%  | 76.4%                               |
| Tottenham to Dynon              | 52.1   | 52.0                        | 92.1%  | 91.4%                               |
| <i>Tottenham to South Dynon</i> | <i>These two lines have been combined due to track rationalisation and are now described as Tottenham to Dynon</i> |                             |  |                                     |
| <i>Dynon to West Footscray</i>  |  |                             |  |                                     |
| Tottenham to Patullos Lane *    | 24.5   | 23.1                        | 41.5%  | 35.3%                               |
| Patullos Lane to Broadford      | 23.0   | 20.8                        | 33.2%  | 23.9%                               |
| Broadford to Albury             | 16.0   | 15.7                        | 13.0%  | 7.5%                                |
| Albury To Seymour (West Line)   | 16.9   | 15.3                        | 11.7%  | 3.5%                                |

TQI data provided is from the latest recorded run.

## 2.2. Sleepers Replaced

Sleepers installed on the track sections identified in the lease are provided below. 25 sleepers (Timber – 5; Steel – 0; Concrete – 0; Composite - 20) 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         |                       |                      |                         |                             |                          | 5                    |                          |                         |                            |                            |                     |                                 |
| Steel          |                       |                      |                         |                             |                          |                      |                          |                         |                            |                            |                     |                                 |
| Concrete       |                       |                      |                         |                             |                          |                      |                          |                         |                            |                            |                     |                                 |
| Other          |                       |                      |                         |                             |                          | 20                   |                          |                         |                            |                            |                     |                                 |
| Concrete 09/10 |                       |                      |                         |                             |                          |                      |                          |                         |                            |                            |                     |                                 |

The total quantity and percentage of the population of sleepers, by type, on the track sections as at 31 December 2020 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     | -                     | -                    | -                       | 5944                        | -                        | 1357                 | 2717                     | 1511                    | 32720                      | -                          | -                   | -                               |
| Timber total percentage   | 0%                    | 0%                   | 0%                      | 32%                         | 0%                       | 12%                  | 27%                      | 38%                     | 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                  | 12389                       | 97167                    | 9875                 | 6417                     | 2457                    | 8958                       | 82500                      | 680212              | 288702                          |
| Concrete total percentage | 100%                  | 100%                 | 100%                    | 68%                         | 100%                     | 88%                  | 65%                      | 62%                     | 21%                        | 100%                       | 100%                | 100%                            |
| Other total quantity      | -                     | -                    | -                       | -                           | -                        | 31                   | 804                      | -                       | -                          | -                          | -                   | -                               |
| Other total percentage    | 0%                    | 0%                   | 0%                      | 0%                          | 0%                       | 0%                   | 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 23 bridges have timber decking that have been in service for 20 years or more. The data includes bridges on the west track.

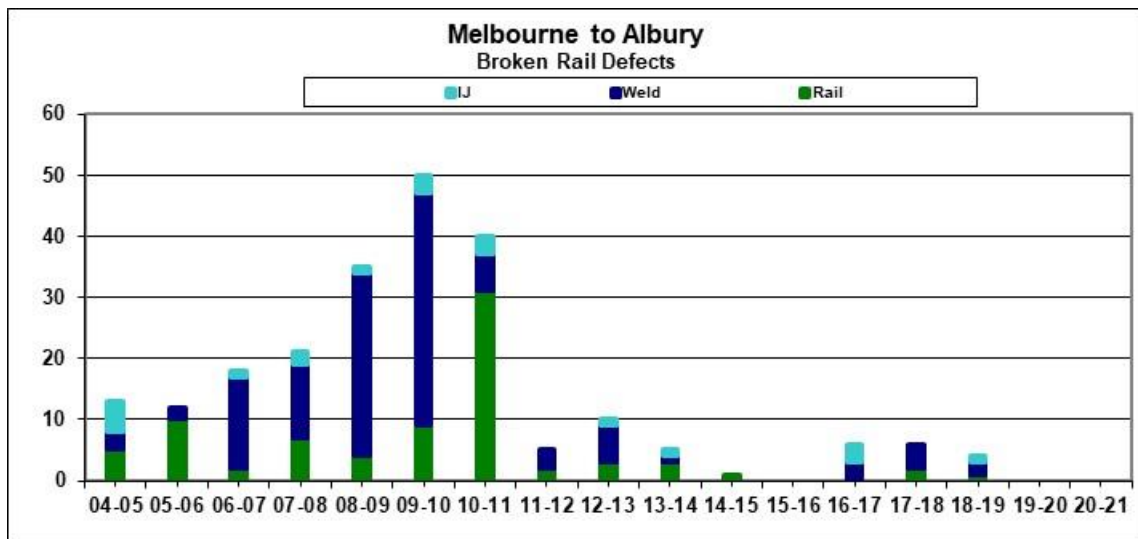
| Corridor             | Number of bridges with timber decking that is more than 20 years old | Number of bridges > 20 years old as a % of the total number of bridges with timber decking |
|----------------------|--|--|
| Melbourne / Albury   | 13   | 37%  |
| Melbourne / Wolseley | 10   | 25%  |

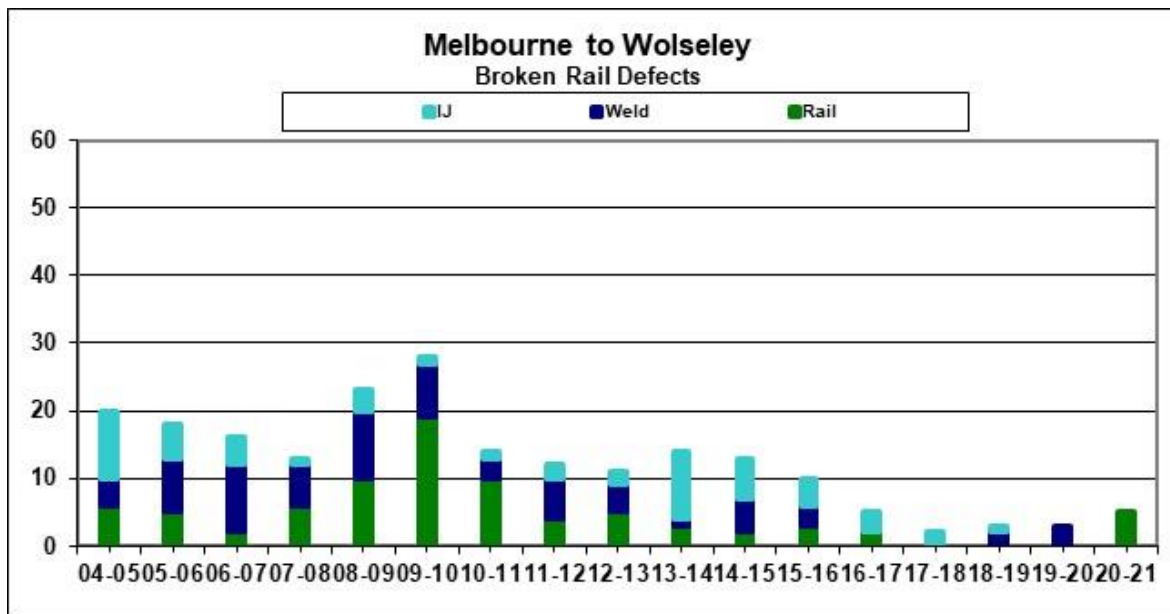
### 2.4. Monthly Signal Failure Analysis

The Department of Economic Development, Jobs, Transport and Resources (DEDJTR) 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<br>(Current)                           | ACOP<br>(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  | 17 | 32  | 20        | 45  | 1   | 36  | 114       | 21  | 27  | 38  | 9         | 10  |    |    |
| E2   | U1                  | 18        | 44  | 18  | 189(0)*  | 63        | 40  | 11 | 38  | 27        | 63  | 8   | 35  | 61        | 26  | 39  | 52  | 9         | 12  |    |    |
| P1   | U2                  | 24        | 73  | 49  | 306(9)*  | 105       | 95  | 42 | 75  | 34        | 124 | 46  | 85  | 60        | 58  | 77  | 67  | 20        | 37  |    |    |
| P2   | P1                  | 89        | 254 | 171 | 475(28)* | 261       | 271 | 85 | 214 | 85        | 272 | 151 | 305 | 187       | 160 | 200 | 177 | 46        | 48  |    |    |
| N  | P2                  |           |     |     |          |           |     |    |     |           |     |     |     |           |     |     |     |           |     |    |    |
| Melbourne / Wolseley                       |                     |           |     |     |          |           |     |    |     |           |     |     |     |           |     |     |     |           |     |    |    |
| E1   | E                   | 1         | 25  | 7   | 2        | 45        | 23  | 6  | 24  | 1         | 9   | 2   | 3   | 0         | 6   | 23  | 14  | 0         | 22  |    |    |
| E2   | U1                  | 1         | 28  | 15  | 5        | 17        | 20  | 10 | 22  | 1         | 12  | 4   | 6   | 0         | 5   | 16  | 25  | 0         | 29  |    |    |
| P1   | U2                  | 2         | 52  | 25  | 16       | 38        | 59  | 30 | 61  | 5         | 38  | 24  | 33  | 0         | 37  | 66  | 36  | 0         | 55  |    |    |
| P2   | P1                  | 4         | 142 | 124 | 66       | 65        | 131 | 90 | 145 | 1         | 95  | 83  | 81  | 0         | 97  | 162 | 74  | 0         | 145 |    |    |
| 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.

\*In Q1 2020/2021, only the West Track of Melbourne/Albury had a track recording run and there was no recording run on Melbourne/Wolseley.