

Performance Panel

Date: 4 October 2023

Item: Elizabeth line Performance

This paper will be considered in public

1 Summary

- 1.1 The final meeting of the Elizabeth Line Committee was held on 25 July 2023. It was agreed updates on the operational performance of the Elizabeth line would be submitted to this Panel. This is the first update on Elizabeth line operational performance and covers the period since the introduction of the final staged opening timetable on 21 May 2023.
- 1.2 Quarterly performance data is also provided in the Customer Service and Operational Performance Report.

2 Recommendation

- 2.1 **The Panel is asked to note the paper.**

3 Performance and Reliability

- 3.1 The final phase of the staged opening timetable was introduced on 21 May 2023. Compared to the November 2022 timetable it included several improvements: 24 rather than 22 trains per hour between Paddington and Whitechapel in the peak periods; longer peak periods; the removal of 'dwells' at the transition to and from Network Rail tracks in the west; and through services from the Shenfield line to Heathrow Terminal 5.
- 3.2 The periods since have seen some very high performing days, and the timetable itself is robust. A significant focus remains on maximising performance and reliability, working collaboratively with all the parties helping to deliver the Elizabeth line, most notably Network Rail (NR) and MTR Elizabeth line (MTREL).
- 3.3 The Elizabeth line performance is measured by two separate metrics. Rail Journey Time Metric (JTM) which is a demand-weighted average of all Elizabeth line customer journey times and comprises wait time and in-vehicle time. Actual (clock) times are weighted by customers' perceived values for waiting on platforms, platform crowding, on-train crowding, being unable to board (left behind) and on-train delays. In Period 3 (28 May – 24 June 2023) JTM was 25.4 minutes, in Period 4 (25 June – 22 July 2023) 25.1 minutes and in Period 5 (23 July – 19 August 2023) was 25.8 minutes performing better than the target of 26.4 minutes. The increased frequency delivered by the new timetable supports delivery of the JTM target.

- 3.4 We also monitor our performance against the long-standing Public Performance Measure (PPM), also used by NR and other Train Operating Companies. This measure shows the percentage of trains that arrive at their final destination on time, combining figures for punctuality and reliability into a single measure.
- 3.5 The PPM score for the Elizabeth line for Period 3 was 87.5 per cent, Period 4 was 88.9 per cent and for Period 5 was 83.6 per cent, which is below historical performance and expected levels.
- 3.6 For most of the days, performance was measured at over 92 per cent PPM and the trend for delays greater than 15 minutes, which has been a significant focus since opening of the Elizabeth line continues to trend positively. Reliability has been heavily impacted by a relatively limited number of large incidents.
- 3.7 The key issues in terms of reliability have been:
- (a) NR infrastructure in the west, where failures of points, axle counters (part of the signalling system) and problems with the Overhead Line Electrification on the NR Western surface section have disrupted services. In particular a major signalling outage resulted in very significant delays and train cancellations between 25 – 27 July 2023. This was eventually traced to issues with NR’s signalling communications (datalink). NR has a number of initiatives underway to mitigate and manage these failures but the results have not met their own aspirations. In addition to day to day operational management, there are a number of additional performance focused meetings between NR Western, MTREL and TfL, including at Commissioner level. By contrast with NR Western the performance of NR’s Anglia route remains good and ahead of target;
 - (b) while availability of trains has been good, with no service affected by lack of rolling stock, the reliability of the trains has been below target. There have been further software upgrades and in recent weeks reliability, while still below target, has shown steady improvement. Alstom, the train manufacturer, has two further reliability-focused software releases this year as well as a hardware modification which will speed recovery from incidents. Again, an intensive programme of meetings is in place to align Alstom, TfL and MTREL;
 - (c) the period since 21 May 2023 saw several significant disruptive incidents in the Central Operating Section including damage to axle counters and a leak of hydraulic fluid from our rail milling machine. This and other incidents took time to resolve. Reviews of each major incident have been completed and actions put in place, both to address the root causes and to speed response and recovery when these relatively infrequent incidents occur; and
 - (d) finally, there were some non-safety affecting issues with the signalling software (ELR400) rolled out at Easter in readiness for the new timetable. These were relatively quickly addressed by Siemens, the supplier, and the schedule for next year’s software release, ELR500, includes additional time for testing ‘live’ in the Central Operating Section.
- 3.7 Looking forward, the signalling issues are not expected to recur. The forthcoming software and wiring updates on the trains are key and can be expected to deliver

further benefits. Reducing the effect of occasional infrastructure failures in the Central Operating Section is a key focus. The most significant challenges are likely to remain with NR's Western infrastructure, despite all the work undertaken by NR colleagues as the underlying infrastructure is not in a satisfactory state and a programme of renewals is planned. MTREL continue to refine contingency plans to minimise disruption when events do occur.

4 Customer Experience

- 4.1 Customer satisfaction remains high on the Elizabeth line with the Customer Satisfaction score of 83 in Quarter 1 of 2023/24. This is an increase of one point on the previous quarter and remains among the highest scores recorded by TfL.
- 4.2 Step-free access availability at MTR stations was 98.5 per cent in Period 3, 99.4 per cent in Period 4 and 99.6 per cent in Period 5.
- 4.3 Step-free access at London Underground stations which serve the Elizabeth line was measured at 100 per cent across the three periods.

5 Travel Patterns in the first year of operation

- 5.1 During its first full year of operation, the Elizabeth line carried 150.7 million passenger journeys, with 137 million journeys being made during the 2022/23 financial year.
- 5.2 An average of 56 per cent of passenger journeys on Elizabeth line occur during weekday peak travel times (07:00 to 10:00 and 16:00 to 19:00).
- 5.3 Passenger demand is highest on Tuesdays, Wednesdays and Thursdays, regularly 560,000 - 614,000 journeys, but recent Elizabeth line demand growth has been greatest on a Thursday influenced by travel in both the peak and off-peak. Saturday demand at 470,000 passengers per day, is only six per cent lower than the quietest working day of Monday, and Sunday demand has also grown rapidly to around 280,000 on average Sundays.
- 5.4 In central London, Tottenham Court Road station saw an increase from 110,000 to 175,000 passengers per day, Bond Street station from 175,000 passengers to 230,000 per day and Farringdon station from 100,000 passengers to 280,000 per day.
- 5.5 Outside of the central section of the railway, stations on the eastern and western branches of the Elizabeth line are seeing an increased number of customers compared to pre-pandemic levels with new services from Reading into central London and Shenfield to as far as Heathrow Airport. At Romford station, recent data shows weekly entries and exits at the station up more than 25 per cent with 191,000 compared to 152,000 in the same period in 2019, and at West Ealing, entries and exits at the station have more than doubled from 22,000 in 2019 to 45,000 this month.
- 5.6 Connectivity, especially in south east London, has also dramatically improved. The Elizabeth line almost halves journey times from stations in south east London to central London. Passengers can now travel from Abbey Wood to Farringdon in

around 20 minutes, a journey that would have previously taken at least 39 minutes.

- 5.7 A post-opening study will continue over the next two years. Extensive passenger surveys will also be conducted later this year to understand how and why passengers' travel behaviour has changed. This will assess the displacement from other transport modes including travelling by car or bike.

List of appendices to this report:

None

List of Background Papers:

None

Contact Officer: Howard Smith, Director Elizabeth line
Email: howardsmith@tfl.gov.uk