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22 June 2021

Dear Chair,

### **Crossrail progress update: Spring 2021**

On behalf of the entire Crossrail team, I wanted to congratulate you on your recognition in the Queen's Birthday Honours. Both Andy Byford and I are looking forward to welcoming you and members of the Public Accounts Committee to Tottenham Court Road station next week.

Following my last letter, dated 19 March 2021, I am writing to you in order to provide an update on the Crossrail project.

The past couple of months have seen significant progress being achieved across the programme. Delivery of the Elizabeth is in the final stages and we are confident that the central section of the railway will open in the first half of 2022.

On 27 March, we commenced the Trial Running phase of the programme with the transition from a construction to an operational railway environment, operating under the Railways and Other Guided Transport Systems (Safety) Regulations 2006 (ROGS) rule book.

This is perhaps the biggest step in the Crossrail journey so far and has provided an opportunity to gain experience of using the new rule book and for operational and maintenance staff, the experience of managing a "live railway". This important milestone has meant that Rail for London (Infrastructure) Limited (RfL(I)) has taken control of the railway as infrastructure manager, and now manage the railway during the Trial Running phase. As part of this transition, RfL(I) has taken control of the Route Control Centre in Romford.

In addition, the Great Western Main Line and Great Eastern Main Line fringes have now been commissioned, meaning that for the first time we have a fully joined up railway. The transfer of the relevant infrastructure to RfL(I) and the controlled start to Trial Running has demonstrated the collaborative effort between all parties involved, which is imperative to get the Elizabeth line into passenger service.

**MOVING LONDON FORWARD**



Following the controlled start to the Trial Running phase with the transition to ROGS, we commenced timetabled train movements with four trains per hour in the central operating section on 10 May. On 7 June, we increased train movements to eight trains per hour and we are currently running trains in the day in order to trial the railway and ensure it meets the capacity and performance requirements needed to move into the final stage before opening the railway.

During the Trial Running schedule, we have two blockades planned. On Sunday 20 June, we commenced a three-week intensive construction blockade which is maximising access to the routeway for the delivery teams. Following this blockade, we will then move into 12 trains per hour timetable operations, which will be the revenue service frequency when the central section opens. There will also be a software blockade later on in the year to allow for the ELR100 software release, which will be a major step towards launching the operational railway for revenue service.

The Trial Running phase is critical for increasing mileage across the network, supporting reliability growth of the railway and flushing out any issues with the systems and signalling software. Once completed, it will demonstrate that the Elizabeth line can run at performance levels necessary to move to the next phase of the programme.

During Trial Running, we remain busy finishing off our stations to a point when they can be handed over to Transport for London (TfL). We have handed over a third of the new central section stations and the next tranche will be handed over in the coming months. Outstanding works have been scheduled into the programme with the majority being completed during the Trial Running period.

Work continues on the development of the refreshed Delivery Control Schedule (DCS), the project delivery schedule for Crossrail. The refreshed version will build upon the logic used in the existing DCS. It will also provide an opportunity to consider lessons learnt in the build up to Trial Running, strengthening previous planning assumptions on assurance processes, and define the conditions required for the successful transition into Trial Operations and Revenue Service.

### **Safety**

We are resolute in our determination to open this railway in a safe way. Since transitioning to a 'live railway', where the safety profile is very different to a construction environment, we have been focused on compliance and checking understanding of the changes in the ways of working. The project teams continue to have a healthy culture for reporting any incidents and a 'fail safe' culture has been embedded. All safety incidents that are reported are investigated and the learnings are shared throughout the organisation.

### **Routeway**

Following a series of construction blockades throughout 2020 and early 2021, the routeway assets, the key infrastructure in the tunnels, were handed over to TfL in March 2021 as part of the programme's transition to an environment governed by ROGS.

### **Stations**

A critical milestone for the project to be able to commence Trial Operations, when we will carry out exercises to confirm the railway is passenger ready, is the handover of our central section stations. Despite recent progress, the scale of the challenge with respect to handing over the remaining stations should not be underestimated. These are big and complex assets and to successfully handover nine of these structures in one year is unprecedented. Crossrail and TfL are, however, working closely together to support this.

I'm pleased to report that in the spring, Tottenham Court Road joined Custom House and Farringdon stations in being handed over to TfL. This means that three of our newly built stations are now fully integrated with the Elizabeth's line's operator and we expect to handover further stations in the coming months. Following handover to London Underground, the Western Ticket Hall at Farringdon has been opened, providing further access to passengers wishing to access Thameslink services at the station ahead of the Elizabeth line opening.

The handover sequencing schedule has been amended, altering the positions of Paddington and Woolwich to protect the Trial Operations schedule. Challenges at Paddington station have arisen during the T-12 handover preparation process, serving as a reminder of the complexity that is involved in the testing and commissioning of these vast and complex structures. Woolwich station will now therefore be handed over to TfL ahead of Paddington. Station teams are working tremendously hard to ensure that station handovers are achieved to schedule, with final works being undertaken before revenue service can commence.

Woolwich and Liverpool Street stations are progressing well through their 12-week handover processes and will be the next stations to be handed over in the coming weeks. Paddington will be handed over shortly after these stations, followed by Abbey Wood and then Whitechapel station, all of which are scheduled to be handed over in the summer. Canary Wharf station is also gearing up for handover and Bond Street is currently showing promising signs that it will achieve its Staged Completion 2 (SC2) state this summer, a vital requirement for Trial Operations.

### **Software**

Systems Integration Dynamic Testing, which helped to build train reliability in the tunnels and test the system ahead of the Trial Running phase, concluded on 16 March.

Before commencing Trial Operations, we will be uploading the passenger-quality software, called ELR100, onto the central operating section. The ELR100 software is the last major configuration before revenue service and it is pivotal to the programme advancing through to Trial Operations. Although the software is ready, there are a series of software engineering works that need to be completed by Siemens. There is contingency in our schedule to mitigate against potential slippage and Siemens are working hard to ensure that the software is commissioned as soon as possible.

### **Operational Readiness**

TfL Rail services on the eastern and western sections of the railway continue to operate with high levels of reliability. The latest Public Performance Measure (PPM) and the Moving Annual Average trend were both better than targeted at 95.0% and 95.8% respectively.

The Class 345 nine-car Full Length Units (FLU) operating between Reading and Heathrow are delivering a good service, although reliability growth is below the forecast levels – this is being investigated.

On 26 May, we successfully commenced the first nine-car Class 345 FLU trains between Liverpool Street and Shenfield, supplementing the seven-car Class 345 trains currently operating on that route. This followed the completion of platform extension works at Liverpool Street station over the Easter period. The Trial Running timetable using FLUs has also successfully commenced in the Central Operating Section under Automatic Train Control by the Siemens Communications Based Train Control (CBTC) signalling system.

### **Network Rail**

Network Rail continues its programme of major upgrade works to surface stations on the eastern and western sections of the railway.



Acton Main Line, West Ealing and Ealing Broadway were all completed during the spring, with each station now providing step-free access. Works at Southall, Hayes & Harlington and West Drayton on the west as well as Ilford and Romford on the east continue to progress.

### **Cost**

The P50 Anticipated Final Crossrail Direct Cost (AFDCD), which represents the median value scenario, is currently £121m above the additional funding of £825m. The £1.1bn of additional funding that was estimated to be needed in 2020 remains consistent with current estimates falling within our P80 to P95 range, representing higher levels of probability.

### **Governance / Scrutiny**

The Elizabeth Line Committee and Elizabeth Line Delivery Group continue to meet on a regular basis in order to provide oversight of the project. The programme's governance arrangements are helping to ensure that decision-making between Crossrail Ltd and TfL is seamless and fully aligned during the critical final phases of the programme, particularly as we conduct the extensive commissioning of the railway and handover the remaining central section stations. Quarterly updates are also provided to the Department for Transport's (DfT) Investment Portfolio and Delivery Committee chaired by the Permanent Secretary.

Crossrail continues provide regular project updates to the Mayor of London and the London Assembly and we hold meetings with the Deputy Mayor for Transport and the Mayor's Chief of Staff every six weeks. Quarterly updates are also provided by the TfL Commissioner to the DfT Minister responsible for Crossrail.

The next few months are critical for the project as we gain further certainty in our systems and software. There is confidence that our progress over the past few months has given the project a firm footing to deliver the Elizabeth line in the first half of 2022.

If you require any further information about the project, please do not hesitate to contact us, or Crossrail's Public Affairs Manager, on [REDACTED] [REDACTED] or by email at [REDACTED].

Yours sincerely,

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**Mark Wild**  
CEO, Crossrail Ltd

CC: Andy Byford, Commissioner at Transport for London  
Bernadette Kelly CB, Permanent Secretary at the Department for Transport  
Gareth Davies, Comptroller & Auditor General at the National Audit Office