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Chair, Public Accounts Committee  
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Dear Chair,

### **Crossrail progress update: Spring 2020**

Following our last letter, dated 11 March 2020, we are writing to you in order to provide an update on the Crossrail project.

In the months since our last update to the Public Accounts Committee, we have seen the rise and rapid spread of the coronavirus pandemic across the globe.

Following the Prime Minister's announcement of measures to limit the spread of COVID-19 in March, we immediately asked everyone who could work from home to do so and put in place procedures to limit movement across the programme. As a further measure, on 24 March, we took the decision with our Tier 1 contractors to temporarily pause physical works on all our sites. Verification and assurance work continued on sites during the safe stop.

In line with government guidance, physical works on sites resumed in June with strict social distancing protocols being observed across all Crossrail locations. Our 'new ways of working', which will remain in place for the foreseeable future, include measures such as limiting the number of people on site at each time and requiring workers to avoid using public transport where possible.

A programme of this scale and complexity was already challenging, with pressures on the schedule even before COVID-19 became a factor; the impact of COVID-19 has made the existing pressures more acute. Due to a pause of physical activity on sites and significant constraints on ongoing work, time has been lost, only some of which can be recovered. At this start of this year we announced an opening window of summer 2021 for passenger services on the central section between Paddington and Abbey Wood. This is no longer achievable.

The recovery plan is now well-developed, but some further work is underway to refine and validate the plan and associated costs. We will issue a more comprehensive update following our August Crossrail Board meeting, subject to the Board being satisfied that the revised plan is realistic and robust.

**MOVING LONDON FORWARD**



Our immediate focus is on completing the outstanding works across the tunnels, shafts and portals so that intensive operational testing, known as Trial Running, can begin, and the Elizabeth line can be delivered at the earliest opportunity. Much of the remaining work is complex involving hooking up, integrating and testing the completed infrastructure and railway systems along with the finalisation of the extensive safety case to the Office of Rail and Road (ORR), who will give the go-ahead to commence Trial Running.

Despite the challenges presented by COVID-19, good progress continues to be made with completing the remaining construction works, with much of this work coming to an end along with software testing for the signalling and train systems. We expect the last of the ten shafts and portals to reach the final stage before it is handed over to TfL by the middle of August and demonstrates the increasing completed infrastructure that has been transferred.

In order to commence Trial Running, Crossrail needs to complete the remaining steps:

- Complete handover of the shafts and portals to TfL
- Complete Dynamic Testing of the signalling and train systems
- Complete integration testing across the routeway for Trial Running
- All central section stations certified as ready to support Trial Running
- Handover the completed Routeway to TfL
- Complete the safety and assurance process for the Elizabeth line and obtain regulatory approval from the ORR to commence Trial Running

### **Blockade / Tunnel**

In order to recover some of the time lost across the programme, we will be implementing a six week 'blockade' across our tunnels, track, shafts and portals from 3 August. It will allow for exclusive 24/7 access to the central tunnel section for construction and testing activities and is focussed on finishing all the remaining safety critical and construction works in the routeway.

During the blockade we will also undertake further integration testing of the routeway which must be completed for Trial Running – there are 25 different scenarios that must be fully tested and completed ranging from a reboot of the central section signalling system to simulating a High Voltage power outage. The Routeway Integration Testing for Trial Running is now 71 per cent complete.

Following Plumstead Portal and Eleanor Street successfully achieving their Staged Completion for Familiarisation state, only one of the ten shafts and portals remain to achieve this, and we expect Stepney Green Shaft to achieve this in mid-August.

### **Software**

Along with all other physical works, we took the decision to pause the testing of the technical railway systems, known as Dynamic Testing, in March. Dynamic Testing in the tunnels recommenced on 30 May.

Testing of the train and signalling software is progressing well with 108 of the required 120 test cases for the baseline Trial Running configuration passed meaning that Crossrail have a viable software product (PD+11) available for Trial Running. Prior to starting the construction blockade the remaining signalling tests and a day of scenario testing will be carried out so that any changes to the software can be incorporated ahead of the new releases in the autumn.

We are confident that the next evolution of the software, referred to as TR2, will be suitable for Trial Running and it has recently been loaded onto our test track at Melton. TR2 software will be uploaded for Dynamic Testing this autumn which will allow us to increase the number of trains that we are able to undertake testing with.

The combination of making good progress with the TR2 software and the work scheduled for the construction blockade, should allow the project to be in a place where we are able to improve reliability in the central section, identify any issues with the software and, ultimately, help keep the Trial Running period to a minimum.

## **Stations**

During the lockdown we were able to hand over our first central section station, Custom House, to Transport for London (TfL). Planning continues for the early station transfer of Tottenham Court Road and Farringdon to TfL. Dates for transfer to take place are currently being considered along with the potential risks and benefits of doing so. Remaining works at the stations including snagging will continue into 2021.

All central section stations, except Bond Street, are now certified as ready to support Trial Running. Bond Street is uniquely affected COVID-19 due to the volume of work remaining and the number of people required on site to complete the station. This meant that the work remaining at Bond Street for Trial Running needed to be re-planned. Discussions were held with the contractor at Bond Street to agree a way forward. As a result, Crossrail Ltd and Costain Skanska Joint Venture mutually agreed to conclude the existing contract on 24 June. Crossrail Ltd will oversee completion of the remaining works at Bond Street, allowing us to re-plan and complete the work for Trial Running.

## **Trial Operations / Trial Running**

Crossrail will be able to give an update on the forecast start date for Trial Running soon. From the start of Trial Running it will take a period of time to fully test the Elizabeth line before it can open for passenger service. This includes a final phase known as Trial Operations to test real-time scenarios. Duration of the testing is still to be determined but this will be for as long as is necessary to ensure the safety and reliability of passenger services.

## **Assurance / Handover**

We are making good progress with our assurance documentation, but there is still a large amount of work to do including the finalisation of the extensive safety case to the ORR.

The routeway construction blockade will unlock the ability to complete dependent assurance documents that will enable the Safety Justifications to be completed.

The delay to completing remaining infrastructure and systems works has, however, impacted the production of the contractors' extensive assurance documentation meaning that our assets are now having to be reviewed concurrently. Crossrail continues to identify where spare resource across the programme exists in order to repurpose it to focus on processing and completing numerous streams of assurance documentation.

## **Heathrow to Paddington (Stage 2B)**

We recently introduced the first full-length Class 345 train in passenger service between Paddington and Heathrow. It is a significant milestone as it uses the ETCS signalling system and means that we continue to build mileage on the Class 345 fleet that will be used on the full Elizabeth line. There will be a gradual increase in the number of Class 345s serving Heathrow over the coming weeks.

## **Network Rail**

Network Rail's major upgrade of the existing railway and stations on the east and west of the Elizabeth line is now into its final stages.

Following the temporary pause to the station enhancement works and necessity to adhere to social distancing measures, Network Rail are evaluating the impact on their construction. However, the completion of step-free works along the east and west of the route are being prioritised.

On 20 July, the Government announced that overall costings for Network Rail's programme for the Elizabeth line requires an extra £140 million of funding with the cost of the surface works package now standing at just under £3 billion. The additional costs, which were assessed before the COVID-19 crisis, are the result of some station and power upgrade work taking longer than planned.

## **Funding**

COVID-19 has created additional uncertainty for Crossrail as it has for all programmes and organisations. Work therefore continues on understanding the financial implications of the pandemic on the Crossrail programme.

The latest projections suggest that the cost to complete Crossrail (including risk contingency) is expected to be higher than the potential increase of between £400 million and £650 million above the Financing Package previously announced on 8 November 2019. In conjunction with the refinement of the remaining work schedule, the extent of any cost increases is being ascertained alongside potential mitigations, before being validated and confirmed soon.

TfL and the Department for Transport (DfT) are in discussion regarding how funding of any additional costs over and above the 2018 funding package will be resolved.

## **Governance / Scrutiny**

We continue to maintain a good working relationship with our Sponsors and are in regular communication with both the DfT and TfL. In addition, we provide regular project updates to the Mayor of London and hold fortnightly meetings with the Deputy Mayor for Transport and the Mayor's Chief of Staff.

Our relationship with our Project-Representative has helped us to identify areas in which Crossrail Ltd can make improvements to programme delivery. Their input and close attention to the project is greatly valued and we continue to offer unrestricted access to all areas of the organisation whilst also providing any required documentation.

With the project moving towards an operational railway, discussions are underway between Crossrail Ltd, TfL and DfT regarding the smooth transition of governance from Crossrail to



TfL. In addition, as the railway moves towards the operational phase, detailed plans are being developed for the transition over time of assets, obligations and people into TfL.

Crossrail's continued priority is to complete the outstanding works for the Elizabeth line as soon as possible and oversee the successful transition of the project as an operational railway to Transport for London. We will continue to work tirelessly to deliver the Elizabeth line for London as soon as we can.

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

Yours sincerely,



**Tony Meggs CB**  
Chairman, Crossrail Ltd.



**Rt. Hon Nick Raynsford**  
Deputy Chairman, 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