

## **CROSSRAIL PRESS OFFICE MEDIA Q&A – SCHEDULE – 30 AUGUST 2018**

### **Narrative:**

The Elizabeth line's central section between Paddington and Abbey Wood will open in autumn 2019 instead of December 2018.

The revised schedule is required to complete the final rail infrastructure and extensive testing required to ensure the Elizabeth line opens as a safe and reliable railway.

The Elizabeth line is one of the most complex and challenging infrastructure projects ever undertaken in the UK and brings together multiple contracts, new rolling stock and three different signalling systems.

We have been working hard to maintain the programme but further integrated testing time is required to introduce the next phase of the railway – the central section between Paddington and Abbey Wood – in a way that can be guaranteed to be safe and reliable.

The original programme for testing has been compressed by a delayed start and more time being needed by contractors to complete fit-out activity in the tunnels and the development of railway systems software.

Testing has started but further time is required to complete the full range of integrated tests required to ensure a safe and reliable railway.

The railway will open through the central section once full testing has been successfully completed and a sufficient level of system operational reliability has been achieved.

The new Elizabeth line trains are already operating between Shenfield and Liverpool Street (mainline station) and between Paddington (mainline station) and Hayes & Harlington, in readiness for the full opening. The trains are also being tested in the Heathrow tunnels.

Construction activity is drawing to a close with the completion of the remaining mechanical, electrical and communications systems along with the architectural fit-out in the new central section stations and will complete this year.

When the central section of the Elizabeth line opens in autumn 2019, the railway will operate as three services as planned:

- Paddington (Elizabeth line station) to Abbey Wood via central London
- Paddington (mainline station) to Heathrow (Terminals 2, 3 and 4)
- Liverpool Street (mainline station) to Shenfield

The focus remains on opening the full Elizabeth line, from Reading and Heathrow in the west to Shenfield and Abbey Wood in the east, as soon after the central tunnels open as possible.

Crossrail will now work closely with Transport for London and Department for Transport to establish whether the revised schedule has any potential additional impact on funding.

## **CROSSRAIL Q&A – SCHEDULE**

### **1. How did the Crossrail programme get this bad so quickly? Who is to blame for this situation?**

The Elizabeth line is one of the most complex and challenging infrastructure projects ever undertaken in the UK.

Crossrail has been managing a number of schedule and cost pressures as this enormously complex project comes to an end.

The revised schedule is required to complete the final rail infrastructure and extensive testing required to ensure the Elizabeth line opens as a safe and reliable railway.

We have been working hard to maintain the programme but sufficient time is required to introduce the next phase of the railway – the central section between Paddington and Abbey Wood – in a way that can be guaranteed to be safe and reliable.

The original programme for testing has been compressed by more time being needed by contractors to complete fit-out activity in the central tunnels and the development of railway systems software.

Testing has started but further time is required to complete the full range of integrated tests required to ensure a safe and reliable railway.

The railway will open through the central section once full testing has been successfully completed and a sufficient level of operational reliability has been achieved.

### **2. Was it known that the Elizabeth line would not open in December 2018 at the time the WMS was published in July?**

No. The extent of the situation became apparent as we progressed further through the testing phase. A final view was formed in August following a comprehensive review of the remaining programme.

Testing has started but more time is needed by contractors to complete fit-out activity in the central tunnels and in the development of railway systems software.

The revised schedule is required to complete the final rail infrastructure and extensive testing required to ensure the Elizabeth line opens as a safe and reliable railway.

### **3. How long has it been known that the Elizabeth line would not be ready to open in December 2018?**

A final view was formed in August following a comprehensive review of the remaining programme.

**4. When did CRL inform Sponsors that it was no longer possible to meet the central section opening date for December 2018?**

Crossrail formally notified the Department for Transport and Transport for London 30 August following a formal decision by the Crossrail Board on 29 August.

**5. When was the final decision taken and by whom?**

The final decision was taken by the Crossrail Limited Board on 29 August.

**6. What was the trigger that made a December 2018 opening no longer possible? Only a few weeks ago you said the railway would open this year, why is there now a 9 month or more delay?**

Following a comprehensive review of the remaining programme we have concluded that the central section will no longer be ready to open in December 2018.

There is no one single element. The Elizabeth line is one of the most complex and challenging infrastructure projects ever undertaken in the UK and brings together multiple contracts, new rolling stock and three different signalling systems.

The revised schedule is required to complete the final rail infrastructure and extensive testing required to ensure the Elizabeth line opens as a safe and reliable railway.

Testing has started but further time is required to complete the full range of integrated tests required to ensure a safe and reliable railway.

**7. Why will it take until autumn 2019 before the central section can open?**

This will give the programme the remaining time needed to complete the rail infrastructure and the extensive testing required to introduce the next phase of the railway.

**8. What remaining rail infrastructure works are still to be completed? When will this complete?**

The remaining rail infrastructure works will complete this year. This ranges from removal of temporary services to completing the remaining installation of the permanent lighting and drainage pumps in the tunnels.

**9. What is the current status of construction activity?**

Construction activity is drawing to a close with the completion of the remaining mechanical, electrical and communications systems along with architectural fit-out in the new central section stations. By the end of the year, construction will no longer impact testing, thereby allowing full testing to commence.

## **10. What is railway systems software?**

Railway systems cover the integrated systems and associated software that are required to operate the railway including rolling stock, signalling, tunnel ventilation, communications and power (traction and non-traction).

## **11. Why is more time needed by contractors for railway systems software? Is there an issue with the signalling system on the Elizabeth line?**

Railway systems cover the integrated systems that are required to operate the railway including rolling stock, signalling, tunnel ventilation, communications and power (traction and non-traction).

We have been working hard to maintain the programme but further integrated testing is required.

The railway will open through the central section once full testing has been successfully completed and a sufficient level of operational reliability has been achieved.

## **12. What are the three signalling systems that will be used on the Elizabeth line?**

CBTC or Communications Based Train Control was selected for the central section as it is technically and operationally proven and is successfully used by many metro systems around the world.

TPWS or Train Protection Warning System operates on the Great Western Mainline and Great Eastern Mainline.

ETCS or European Train Control System operates in the Heathrow tunnels.

## **13. What was the impact of the electrical explosion at Pudding Mill Lane on the opening of the Elizabeth line? Is this the reason why testing started late?**

During the initial energisation of electrical equipment at Pudding Mill Lane sub-station on 11 November 2017, two voltage transformers failed.

The cause of the failure was quality assurance – aspects of the wiring at the sub-station had been completed incorrectly.

This delayed the start of energisation of the power equipment in the tunnels by several months while extensive checks were completed, and thus delayed the start of testing.

## **14. Will this mean longer disruption for local communities around work sites?**

Construction activity is drawing to a close with the completion of the remaining mechanical, electrical and communications systems along with architectural fit-out in the new central section stations.

While it is hugely disappointing that the central section of the new railway will not open to passengers in December, the remaining construction schedule remains the same as most recently communicated to local residents and businesses.

**15. The funding envelope has just been increased from £14.8 billion to £15.4 billion, what are the cost implications of today announcement?**

Crossrail will now work closely with Transport for London and Department for Transport to establish whether the revised schedule has any potential additional impact on funding.

**16. Will the Elizabeth line open in autumn 2019, could it be later?**

Everyone involved in the Crossrail project remains focused on completing the remaining testing and commissioning works to enable the central section of the Elizabeth line to open in autumn 2019.

**17. Will all the new central section stations open in autumn 2019?**

Yes. Paddington, Bond Street, Tottenham Court Road, Farringdon, Liverpool Street, Whitechapel, Canary Wharf, Custom House, Canary Wharf and Abbey Wood will all be served by the Elizabeth line when services through the central section commence in autumn 2019.

**18. Could a preview / partial service be operated this December?**

No. It is not possible to operate a limited or partial service through the central section without it impacting testing. Crossrail looked at every possibility and could not offer London a safe and reliable railway by doing so.

**19. Could the Elizabeth line open in the central section before autumn 2019?**

The intention is that the central section will open in autumn 2019.

**20. When exactly will the central section open and will the railway be fully open in December 2019?**

Full details of the opening strategy will be announced in due course.

The focus remains on opening the full Elizabeth line, from Reading and Heathrow in the west to Shenfield and Abbey Wood in the east soon as possible after the central section opens.

**21. What is the revised opening strategy for the Elizabeth line?**

When the central section of the Elizabeth line opens in autumn 2019, the railway will initially operate as three services as planned:

- Paddington (Elizabeth line station) to Abbey Wood via central London
- Paddington (mainline station) to Heathrow (Terminals 2, 3 and 4)
- Liverpool Street (mainline station) to Shenfield

**22. When the Crossrail project complete?**

The focus remains on opening the full Elizabeth line, from Reading and Heathrow in the west to Shenfield and Abbey Wood in the east soon as possible after the central section opens.

**23. What will be the final cost of the Elizabeth line?**

The final cost will be confirmed when the programme completes.

## FOR BACKGROUND – CRL MEDIA Q&A – ADDITIONAL FUNDING

### **Crossrail statement (approved):**

“A number of factors have meant that additional investment is needed by both Crossrail Limited and Network Rail during this final stage of the programme covering both the new build central section and upgrades to the existing railway. These cost increases are disappointing but additional funding is critical to the delivery of this vital project. £300m will be made available to Crossrail Limited for its remaining programme of works in the central section. Both Crossrail Limited and Network Rail remain focused on managing costs through to project completion.”

### Information for journalist:

The Secretary of State has announced on 24 July 2018 that the overall funding envelope for the delivery of the project has increased from £14.8 billion to £15.4 billion.

The original budget for the project was £15.9 billion, including a large contribution from London businesses. Following the Comprehensive Spending Review in 2010, a revised funding envelope of £14.8 billion was agreed. Crossrail Limited is responsible for £12.5 billion of works with Network Rail responsible for £2.3 billion of upgrade works.

Cost pressures have increased on both the Crossrail Limited and Network Rail parts of the project. As we get closer to the opening of the railway, the challenge of delivering a major infrastructure project of this scale and complexity has increased, with fewer opportunities to mitigate these pressures.

Additional funding is being provided to both Crossrail Limited and Network Rail.

£300 million is being made available to Crossrail Limited for its remaining programme of works in the central section, specifically the complex systems installation and testing, prior to the opening of the railway for reliable passenger service.

Around £290 million additional investment is required by Network Rail to complete its upgrades to the existing railway.

### Crossrail Limited

Cost pressures in the central section have resulted from a number of factors.

Increased time and resource has been required for the installation and testing of the multiple systems needed to operate the new railway including track, communications, power and signalling and worse than expected ground conditions during station construction. These have prolonged works and compressed the delivery schedule. Some construction costs are higher than was originally budgeted

## Network Rail

The need for around £290 million additional funding for Network Rail to complete their programme of works for the Elizabeth line, including those enhanced ticket halls at surface stations, relates to a number of factors.

These include the complexity of integrating new systems onto the national rail network such as a new driver only operation camera system and the poor underlying condition of some of the Victorian infrastructure.