

TfL Reactive statement:

Mark Wild, London Underground's Managing Director, said: "We will continue to work closely with Crossrail Limited as they complete the remaining railway infrastructure work and testing needed to deliver the new railway. The delayed opening is disappointing, but ensuring the Elizabeth line is safe and reliable for our customers from day one is of paramount importance."

Top lines

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- The central section of the Elizabeth line (Paddington through to Abbey Wood) will now open in autumn 2019, instead of December 2018.
 - Crossrail Limited have now advised us and DfT, as joint sponsors of the project, that they will not be able to make the original December opening date.
 - They need more time to test the railway to make sure it is safe and reliable before it opens to customers.
 - The revised schedule is needed to complete the final rail infrastructure and extensive testing required to ensure the Elizabeth line opens as a safe and reliable railway.
 - 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 in the development of railway systems software.
 - Testing has started, but further time is required to complete the full range of integrated tests.
 - The central section will open once full testing has been successfully completed and a sufficient level of operational reliability has been achieved.
 - There is no one single element causing the delay. 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 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.
 - The focus remains on opening the full railway, from Reading and Heathrow to Shenfield and Abbey Wood, as soon after the central tunnels open as possible.
 - This is one of Europe's largest infrastructure projects, it will transform travel in London and the South East and is already delivering benefits to across the UK through its vast supply chain. The project will boost the economy by an estimated £42bn.
 - The delay is disappointing, but not uncommon in a project of this scale and complexity and delivering the railway safely is of paramount importance. There is always the potential for unexpected pressures to emerge that can challenge opening dates.
 - IF PRESSED: Crossrail Limited is responsible for the construction and delivery of the end-to-end railway.
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1. Why didn't you announce this when you announced the additional funding?

DfT and TfL were made aware of the change to the schedule on 30th August, following a decision at the latest Crossrail Board which took place on the 29th August.

2. How could you have been unaware of the potential for this delay?

As has been discussed on a number of occasions at the TfL Board, the Crossrail Limited team have been managing a number of schedule and cost pressures as this enormously complex project draws towards completion.

Crossrail Limited have now completed a review of the remaining schedule for the completion of the construction and integrated systems testing ahead of the line opening safely and reliably to passengers.

As a result of that, Crossrail Limited has now notified us that they can no longer meet the December 2018 date which means that the central section will now open in autumn 2019.

3. Only if pressed:

We've heard TfL commissioned an independent review of the schedule?

As has been discussed on a number of occasions at the TfL Board, the Crossrail Limited team have been managing a number of schedule and cost pressures as this enormously complex project draws towards completion.

Crossrail Limited have been continually reviewing their schedule. As Sponsors, it was prudent for us to commission an independent review of Crossrail Limited's current programme to help assess the volume of work to go and risk involved.

4. Will this have a further impact on the already extended funding envelope?

As announced in July, an additional £300m of funding has been made available to Crossrail Limited by the DfT and TfL.

Crossrail Limited have just informed TfL and DfT about the delay. Crossrail Limited are working to establish any additional impact on funding from the revised schedule.

5. Why did you agree the funding package with the DfT in July, potentially leaving TfL to foot the bill for any remaining costs?

When the revised funding agreement was made in July, Crossrail Limited had not advised the DfT and TfL, the joint sponsors of the project, that the December 2018 opening date could no longer be met and the potential cost implications of this. Crossrail Limited are working to establish any additional impact on funding from the revised schedule.

6. What are the revenue implications of not beginning a service from this December?

We are assessing the revenue implications. Details of how we will manage the change will be announced as part of our annual business planning process at the end of 2018.

The predicted revenue from the opening of the central section was mainly attracted from other TfL services, for example customers switching from the Central and Jubilee lines to the Elizabeth line, rather than being brand new revenue from new sources.

7. What are the revenue implications of not running a full service by December 2019?

We will work through any cost and revenue implications of a revised opening date and report this through our annual business planning process.

8. How will you fund the December delay?

Crossrail Limited have just informed TfL and DfT about the delay and we will now work with them to establish any additional impact on funding from the revised schedule. Details of how we will manage the change will be announced as part of our annual business planning process at the end of 2018.

9. Is the funding for other projects now at risk?

Full funding details will be announced as part of our annual business planning process in November.

10. What are the reasons for the delay?

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 delays in the development of railway systems software. Testing has started, and further time is required to complete the full range of integrated tests required to ensure a safe and reliable railway.

11. Do you have confidence in Sir Terry Morgan / the management of Crossrail Limited?

Sir Terry Morgan has been the chair of Crossrail Ltd since 2009 and brings a wealth of experience from many years working in the industry. He has overseen this world class infrastructure project for almost ten years, and it is already delivering immense benefits to the whole of the UK through its vast supply chain. All major projects are subject to the highest level of scrutiny to ensure they can be successful but there is always the potential for unexpected pressures to emerge that can challenge opening dates. Although the delay is disappointing, it is not uncommon in a project of this scale and complexity and TfL and the DfT will continue to work closely with Terry and his team on delivering the Elizabeth line as quickly as possible.

12. When will the full railway open?

The DfT and TfL will continue to work closely with Crossrail Limited on the revised schedule. 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.

13. What is the regulatory sign off required to run the railway?

There are a series of safety reviews both TfL and MTR, the operator, need to complete ahead of the railway being ready for passenger service which is why full testing of all of the systems together is essential. The Office of Rail and Road then need to approve the railway as safe to operate before services can begin.

14. Doesn't this show an inability by Government and Transport for London to deliver major projects on time and on budget?

No. Crossrail is a world class infrastructure project that will transform travel in London and the South East and is delivering immense benefits to the whole of the UK through its vast supply chain, adding up to £42bn to the UK economy.

Major projects are integral to unlocking new housing, creating jobs, driving forward economic growth and provide communities across the country with the transport infrastructure we need for the future.

The delay is disappointing, but not uncommon in a project of this scale and complexity and delivering the Elizabeth line safely is of paramount importance. There is always the potential for unexpected pressures to emerge that can challenge opening dates.

15. Why weren't these delays noticed earlier and mitigating action taken?

Following a full review of the remaining delivery schedule we have been advised the central section of the railway will not be able to open in December 2018.

Although the major construction work has been broadly delivered to schedule, finalising the communications systems and bringing together and testing the complicated interfaces such as track, power, signalling and trains is the most complex phase of the Crossrail project and it is during this late phase of the project that Crossrail Limited has come up against delays.

The DfT and TfL will continue to push Crossrail Limited to manage any schedule pressures and mitigate these as much as possible. 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.

16. What was the impact of the electrical explosion at Pudding Mill Lane on the completion date and cost for the Elizabeth line?

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

This was one a number of unexpected challenges that occurred during construction, and it highlights the complexity of delivering major projects.

17. What about the Network Rail works, are they also delayed?

The upgrade of existing stations in the west is the responsibility of Network Rail.

18. What is the revised timetable for opening?

Full details of opening dates will be announced in due course.

19. What is the revised opening strategy for the Elizabeth line?

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

When the central section does open the railway will initially operate as three separate services:

- 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

20. What are the three signalling systems that will be used on the Elizabeth line?

CBTC (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 (Train Protection Warning System) operates on the Great Western Mainline and Great Eastern Mainline i.e. Liverpool Street to Shenfield and Paddington to Reading.

ETCS (European Train Control System) operates in the Heathrow tunnels.

21. Is it true that TfL delayed the train procurement for the Elizabeth line and that this has been the real cause of the delay?

The procurement of the trains has had no impact on the delayed opening of the central section. Informed by the lengthy delays to the train procurement for the Thameslink project, which was carried out through a PFI, a decision was taken by the DfT and TfL that TfL would procure the trains directly. The risk to train delivery under a PFI was much greater. The only change we made to the train procurement was done with the clear intent of de-risking the programme. The trains are now being

delivered, and are already serving parts of the Elizabeth line route in the east and the west.

22. What about the credit ratings agency putting TfL on negative watch?

We note the S&P analysis and are assessing the financial implications of Crossrail's announcement as part of our annual business planning process.

We have a tight grip on costs and have delivered more than £500m per annum in net operating savings and are on track to deliver £630m this financial year as we work towards an operating surplus by 2021.