EDITED PRESS RELEASES

TRANSPORT FOR LONDON

NEW LIFTS FOR TUFNELL PARK STATION 11 March 2015

London Underground is advising passengers who use Tufnell Park station that vital work to replace the station's two lifts will begin on 8 June. The current lifts are around 40 years old and need to be replaced – the existing lifts fail once a week on average causing unplanned travel disruption to passengers. The nature of the work means that while this essential upgrade is carried out the station will be closed until mid-March 2016.

LU explored the option of replacing the lifts one at a time and keeping the station open. However, this was neither the safest nor least disruptive option for passengers. If only one ageing lift was in operation, the larger volume of passengers using it would risk becoming trapped and unplanned station closures would increase significantly. Additionally, the total time to complete the work on both lifts will be around 9 months rather than 20 months if the lifts were replaced one at a time while keeping the station open.

Lift replacement can be a lengthy process due primarily to the bespoke nature of the restricted working space and the complexity of working Underground, in cramped lift shafts. Due to the nature of the work, replacing lifts at a station like Tufnell Park – with a single lift shaft which continues deep underground – takes a number of months. In the case of the lift shaft at Tufnell Park station, working on one lift at time means there would be no cross-car transfer available in a case of lift failure, prolonging the time it would take emergency services to rescue passengers or tend to someone requiring immediate medical attention.

FINSBURY PARK STATION – NEW ENTRANCE AND STEP-FREE ACCESS 16 March 2015

Finsbury Park Underground station is set to be transformed over the next few years as part of London Underground's £10 billion programme of continuous improvement. When the upgrade is complete Finsbury Park Underground station will be step-free, passengers will have more space and journeys through the station will be quicker and more pleasant. Finsbury Park Underground station is the fourth busiest Underground station outside of zone one – the number of people using the station during the week has increased by 20% since 2010, and is expected to continue to grow. From Monday 20 April 2015, ticket gates will be installed at Station Place and Seven Sisters Road entrances to increase security at the station and reduce fare evasion. A new, larger and more accessible western station entrance will open in early 2018 and by 2019 LU will have installed lifts to provide step-free access to all Underground platforms.

This is a complex project that needs to be carefully co-ordinated with work on a development project adjacent to the station. The adjacent development has now received planning permission from the London Borough of Islington to proceed, which will include construction of the new Western station entrance. Other improvements to Finsbury Park station that passengers will see include enhanced CCTV and passenger information as well as new ticket machines and improved ambience at the Seven Sisters Road and Station Place entrances.

- Wells Terrace will close on Monday 20 April 2015.
- Closing the Wells Terrace entrance will eventually result in a new, larger, more accessible Finsbury Park Underground station entrance. Keeping this entrance open during construction or constructing a new temporary entrance is not feasible due to the nature of this work.
- During construction of the new entrance, passengers will be able to access the station via nearby entrances on Seven Sisters Road and Station Place. Buses will continue to serve their normal stops from where passengers will be able to follow the short signed walking route to Station Place.
- From the current Wells Terrace entrance to the Underground platforms passengers currently walk the length of the adjoining long corridor into the station. The alternative walking route into the station via Station Place is only approximately one hundred metres further than the existing route and is

expected to take only a little over a minute longer than the current route, based on average walking speed.

- LU has undertaken a thorough congestion analysis for both the on-street approaches and within the station to ensure that the temporary closure can be safely managed. This included the Stroud Green Road pavement to ensure that the route between Wells Terrace and Station Place can accommodate all those using the pavement. Even during the busiest times of the day at the narrowest points, the pavement is sufficiently wide enough – as according to our planning capacity guidelines – to accommodate these numbers.

TBMs ORDERED TO BUILD NORTHERN LINE EXTENSION TO BATTERSEA

18 March 2015

London Underground today announced that the contract to design, manufacture and deliver two Tunnel Boring Machines (TBMs) that will build the Northern Line extension has been awarded to NFM Technologies. Ferrovial Agroman Laing O'Rourke Joint Venture (FLO), who LU has contracted to design and build the Northern Line extension, plans to launch the TBMs in summer 2016, when the machines will begin their seven month 2.5km journey from Battersea to Kennington. Each TBM 'cutting head', which will do the excavation work, will be just over six metres in diameter *(seems pretty big for 'tube' trains! – Ed.)* and the full machine itself will be 106 metres long. Two new stations will be constructed – one at the heart of the Battersea Power Station redevelopment and another at Nine Elms to the east, serving new developments such as the US Embassy and the redevelopment of New Covent Garden Market, as well as existing communities. The Northern Line extension will enable the Vauxhall/Nine Elms/Battersea areas to be transformed into a major new commercial and residential district with tens of thousands of new jobs and homes. Other transport investments in the area include the transformation of the Vauxhall gyratory, the creation of new dedicated cycle routes through the area, and the upgrading of Vauxhall Underground station to include step free access.

The cost of the Northern Line extension is expected to be up to £1bn, which is being funded entirely through contributions from the developments in the area that will benefit from the extension. An innovative funding package has been agreed between the Mayor of London and Government, which includes the creation of an Enterprise Zone from 2016 for a period of 25 years. During construction the project will support around 1,000 jobs and around 50 apprenticeships spread across the country.

As part of its commitment to build the extension in the most environmentally friendly way possible, LU plans to transport at least 70 per cent of the waste from the TBM work by river. This will minimise the number of lorries on the road in connection with the extension.

PLANS TO IMPROVE NEXT FOUR UNDERGROUND LINES CONFIRMED

24 March 2015

The Mayor and London Underground today confirmed detailed plans, including timescales and budget, to ensure the delivery of the much needed modernisation of the next four of the network's lines. The next major phase of the Underground's modernisation will see a new modern train control system introduced on the District, Circle, Metropolitan and Hammersmith & City lines. The system is needed to allow more trains to operate to help support London's growing population that is expected to increase by 1.4 million people by 2030.

The plan uses an even further improved version of the system built by Thales, now successfully operating on the Jubilee and Northern lines, and also follows on from the Victoria Line modernisation where, with 34 trains every hour in each direction, there now is one of the most frequent train services anywhere in Europe.

The District, Circle, Metropolitan and Hammersmith & City lines together make up nearly 40 per cent of the network and include the oldest part of the network built in 1863. As well as circling central London, the lines reach out to suburbs to the West, North-West and East of the capital. Between them the four lines carry around 1.3 million passengers a day.

LU plans to complete its investment of up to £5.54 billion in the modernisation of the lines, which includes 191 new modern air-conditioned walk through trains already introduced on the Metropolitan, Circle and Hammersmith & City lines and now being seen across the District Line. The investment

also includes other improvements to get the most out of the new trains, including new track, lengthened platforms and rebuilt train depots with advanced technology to ensure the highest levels of train reliability.

Some of the current signalling system belongs in a museum, having been operating safely, but in a very basic way, since the early years of the last century. It is not capable of running trains close enough together to give Londoners the type of high-frequency service they need. LU is now entering the final stages of negotiation with Thales to deliver the brand new system. The £5.54 billion budget is a 30 per cent increase from the original £4.26 billion budget authority – providing cover for a more realistic price for the new signalling contract, a longer overall programme, and additional infrastructure works and costs identified as necessary to the modernisation following the termination of the Bombardier contract.

LU is in the final stages of negotiating a position with Thales and the firm expectation is that the new price will be in line with, or below, the cost per kilometre of modernising the Northern Line signalling – and a much lower cost than the Jubilee and Victoria Line modernisations delivered under the flawed Public Private Partnership arrangements, ended by the Mayor five years ago. Work is expected to begin later this year, and passengers will start to see the benefits of the work on the Circle Line in 2021, with the full benefits across all lines in 2022. Once these four lines have been completed, LU will then move on to buying new trains and control systems for the Piccadilly, Central, Bakerloo, and Waterloo & City lines.

The complex nature of the railway meant that Bombardier's signalling modernisation programme was simply not progressing and there was no guarantee it would have worked. London could have been left without the modernisation it needed for many years, possibly indefinitely, hence LU's termination of the previous contract in December 2013.

The details of the signalling contract, including costs, remain the subject of commercial negotiations with Thales, which are expected to conclude shortly. Although the final signalling cost will be higher than the price quoted by previous contractor Bombardier, the costs will be less per kilometre than any of the other recent signalling upgrades, despite being one of the most complex signalling projects in the world with more complex junctions than most other metros in the world.

Editor's Notes:

Referring back to the February 2014 issue of *Underground News*, **Piers Connor** then wrote –

"Under the original PPP contract, the intended date for the completion of the SSL resignalling was 2014. This had slipped by two years when Metronet collapsed in July 2007 and lost another couple of years after that. It is currently officially still at 2018 …… If I were a betting man, I would put money on a 2021 completion date".

We are now told that the SSR ATC system will be the same system as the Northern Line, altered where appropriate for the essential geographic and service needs of the SSR. It will also be Radio based rather than transmission loop based and therefore requires radio aerials rather than cable laid in the four foot. The Interoperable sections require fixed block sections retaining line side signals for non SSR vehicles.

All 191 S stock trains will be retro-fitted in Derby. Engineering vehicles will be retro-fitted in a rebuilt depot facility at Ruislip depot. It is possible that the first ATC-equipped train could be returned to London Underground during the summer of 2016, but with the equipment not operational.

The SSR will include three versions of signalling that are required to meet the interoperability needs of the Sub Surface Railway.

1. PURE MOVING BLOCK' TBTC ON THE FOLLOWING SECTIONS:

- Hammersmith to Aldgate/Aldgate East.
- Baker Street to Watford and Rayners Lane.
- Circle Line.
- Upminster to East Putney, Olympia, NR Boundary at Turnham Green and Chiswick Park.

2. UNDERLAY SECTIONS – TBTC MOVING BLOCK WITH NEW FIXED BLOCK SIGNALS FOR NON SSR ATC EQUIPPED VEHICLES:

- Harrow on the Hill to Amersham (Fast).
- Rayners Lane to Uxbridge.

3. OVERLAY SECTIONS – ALL TRAINS WORK TO FIXED BLOCK WITH SSR ATC EQUIPPED VEHICLES WORKING WITH TBTC:

- Gunnersbury to Richmond (NR).
- East Putney to Wimbledon (NR).
- Acton Town to Ealing Broadway.

CHANGES TO TRACK LAYOUTS:

- Putney Bridge – removal of 9 & 10 points (from the bay platform and to the bay platform respectively) in June and September 2015.
- Gloucester Road – removal of 228 points (from outer rail Circle Line to westbound District Line) in July 2015.
- Bromley By Bow – removal of 5 points (crossover west of station) October 2015.
- Ealing Broadway – removal of sidings and replacement of spring toggle 39^{B} points (from platform 7 to eastbound) with new powered points in October and November 2015.
- King's Cross – Commissioning of new scissors crossover west of station, removal of crossover east of station in December 2015 (see *Underground News*, March 2015, page 139).
- Paddington (Suburban) – Installation of new crossover west of station but secured out of use until the start of ATC.
- Acton Town – removal of $41^{A}/^{B}$ points (this is the direct connection from the westbound local road into the Acton Works shunting neck No.24 siding) February 2016.
- Hornchurch – removal of 6 points west of station, March 2016.
- Barking – realignment of 39 points to and from siding reception road just east of Barking eastbound in March 2016 (for higher speed running).
- Amersham – removal of handworked points in No.34 siding (south of station) in May 2016.

REVISED PROPOSED COMMISSIONING DATES:

	Area	*Original Date*	**New Date †**	**Overrun Date ‡**
1	Hammersmith – Paddington	*03.17*	09.17	09.17
2	Paddington/Bayswater/Finchley Road – Euston Square	*08.17*	04.18	**09.18**
3	Euston Square – Monument and Stepney Green	*10.17*	06.18	**11.18**
4	Monument – Sloane Square	*12.17*	10.18	**01.19**
5	Fulham Broadway/Barons Court/Olympia/Bayswater – Sloane Square	*02.18*	01.19	**04.19**
6	Stepney Green – Becontree	*04.18*	03.19	**07.19**
7	Becontree – Upminster	*06.18*	05.19	**11.19**
8	Finchley Road – Wembley Park	*08.18*	07.19	**02.20**
9	Wembley Park – West Harrow/Moor Park	*10.18*	10.19	**03.20**
10	West Harrow/South Harrow – Uxbridge	*12.18*	12.20	**09.21**
11	Moor Park – Amersham/Chesham/Watford/Watford Junction	*02.19*	09.20	**06.21**
12	Barons Court – Chiswick Park/Richmond	*04.19*	12.19	**09.20**
13	Chiswick Park – Northfields/Ealing Broadway	*06.19*	04.20	**01.21**
14	Fulham Broadway – Wimbledon	*09.19*	06.20	**03.21**

† Described as a "Potential early" date.
‡ Described as a "Potential later" date.

It now seems that stages 10 and 11 will be the last two. With the revised and extended dates of completion, it now becomes clear why the SSR won't get its all-night weekend service until at least 2021 (see page 269, this issue). It will also be interesting to see which, if any, of the above dates will be met.

John Hawkins writes –

Well over six months since the last article about the proposed Thales signalling scheme for these lines (in *Underground News* November 2014) a surprise media release from TfL on 24 March 2015 saw the Mayor and LU confirm plans to improve the sub-surface lines. This apparent good news looked strangely familiar. Just how many times can they confirm this upgrade? Whilst it mentioned detailed plans, including timescales and budget, these were not revealed. The promise of new trains and

lengthened platforms was made when these have already reached all lines, with just the District awaiting replacement of its remaining D Stock. Surprisingly, it confirms that the contract with Thales remains under negotiation, and one must assume that the sole purpose of the release was to provide positive news before the election campaign got underway. In fact, the few new details provided bad news for those in the know.

A surprise claim that Circle Line services will more than double is probably a misunderstanding, since it allows little room for increase on other inter-working services. The total upgrade is now budgeted at £5.54 billion, almost a third more than the original £4.26 billion due to the expected cost of the Thales contract, which has therefore ballooned to a much greater extent. It is claimed that this will be near the cost per kilometre of the Northern Line upgrade, which is no reassurance. That did not have the long plain double-track sections like the outer areas of the sub-surface lines, and also used the expensive wiggly-wire system and not the new radio-based one to be employed on the SSR.

Work is expected to begin later this year, with benefits seen on the Circle Line in 2021, and completion in 2022. This means that the ambitious TfL proposed timetable shown in the earlier article has been rejected by Thales who, with no competition, have been able to commit to a more conservative one. This has implications for the New Tube for London programme, where new trains and signalling are to be ordered after the sub-surface lines project is completed. It was intended that new signalling would precede the first of the NTfL going into operation on each line, with service upgrades awaiting delivery of all new trains to each line in turn. The Feasibility Study (see *Underground News*, January 2015 page 54) had the rolling stock invitation to tender issuing in 2015 (expected to issue on 25 February 2015 but already overdue), with the contract awarded in 2016. Resignalling on the Piccadilly Line would then have commenced in 2019, with the first new train delivered for testing in 2022 and entering service in 2023, and the whole fleet commissioned by 2025. Other lines were to follow. It is unclear how much this timetable has to slip, but two or three years would be likely with current trains required to continue in the meantime. It is unclear if this is due to a shortage of signal engineers or of capital budget funding.

With negotiations continuing beyond the expected autumn 2014 deadline, it is surprising that internal papers have the initial installation on the Hammersmith branch expected only six months later than in the last plan, with an interim stage to only Latimer Road. But then the settling in period before Baker Street is reached has gone from five months to between seven months and a year. The TfL plan was to then proceed at two-monthly intervals until the final Wimbledon area was reached with a three month interval. The Thales plan has both early and late targets. After reaching the Aldgate triangle, the early target allows an unexplained four months before including the plain tracks on the south side of the Circle Line. I wonder if this allows for the north side Circle Line to catch up with the initial Hammersmith & City Line adoption of the new system. Early targets then vary between two and four month spacing to completion in December 2020. However, the late targets only allow a two month interval before the south side of the Circle Line, with generally longer intervals between areas and an unexplained six month interval before completion of the Richmond branch. It is unclear how these dates link with the press release, which may be timetable revision dates. 2022 was a date mentioned for the introduction of ‘night tube’ services on the SSR after the completion of resignalling.

A noticeable change compared to the earlier proposals is the demotion of outer areas of the Metropolitan Line to the final two stages, rather than the initial stages in the early schemes. Thus the lines north of Moor Park, and likely the fast lines from Harrow-on-the-Hill, are not to be completed until September 2020 or June 2021. This would include the new link to Watford Junction, now expected to open in 2019 – surely conventional signalling will not be installed for a year or two, although there will be plenty of redundant equipment. With a small new signalling area, this could trial the overlay system when interworking with Overground trains. This system will be installed over the current signalling on the Richmond and Wimbledon branches, and also west of Acton Town to Ealing Broadway to interwork with the Piccadilly Line. It means that the current fixed block system provides clearance for trains, although S Stock will detect this through their TBTC system. An underlay system will be used on the fast lines from Harrow-on-the-Hill to Amersham and also west of Rayners Lane Junction, which means that the TBTC moving block signalling is fully installed, but new fixed block signalling is also installed for non-S Stock trains. Why Piccadilly line trains will work over two systems, around Ealing Common and west of Rayners Lane is unexplained. The Uxbridge branch will complete this long awaited resignalling in December 2020 to September 2021.

The initial resignalling scheme was looking to increase frequencies to compensate for lower seating capacity on the new trains before they were introduced, but perhaps that will be long forgotten some ten or more years later. In any case, these outer areas have lower frequency services and interwork with non-fitted trains that will not benefit, including the Piccadilly Line trains, and therefore the case for resignalling is mainly for standardisation and modernisation. It is the central area services that will see the new signalling provide a promised 32tph. By leaving the Uxbridge line until last, after which Piccadilly Line resignalling should commence, perhaps the two can be integrated upon installation. If the Piccadilly Line is to use a different system, it means that this branch will need three signalling systems whilst old trains continue to operate!

The Bombardier scheme planned train fitment works to be done in Ruislip depot, and site works were undertaken earlier this year to minimise delays for the new contractor (see NF 9/15). It is now expected that each S Stock train will return to Derby to be fitted with the necessary equipment, and the rebuilt train shed at Ruislip will only be used to fit engineering vehicles. Will this still include the heritage fleet, specifically mentioned in the previous contract?

OVERWHELMING SUPPORT FOR A BAKERLOO LINE EXTENSION — 27 March 2014

There is overwhelming support for the Mayor and TfL's plans to extend the Bakerloo Line to help meet anticipated population growth in south London, the latest consultation results on the proposals reveal. Over 15,000 responses to the consultation were received with 96% of respondents supporting the extension of the Bakerloo Line, with the majority acknowledging it would improve connectivity and relieve congestion on the transport network.

The consultation proposed two alternative routes between Elephant & Castle and Lewisham. There was strong support for both options, a route via Camberwell and Peckham Rye or via the Old Kent Road. It is estimated that once the relevant permissions are received and necessary funding secured, construction could commence by 2025 and be completed during the early 2030s.

Key results of the consultation include:

- Over 50% of respondents stated that the scheme would provide better connectivity, reduce crowding and congestion on roads and public transport and help the region’s economy and regeneration opportunities.
- One of the key purposes of the proposed extension is to enable new development in south-east London. Over 11,000 respondents (82%) stated support for the proposal on this basis, with recognition of the role it can play in supporting London’s population growth and regeneration across the region.
- Strong support existed for the option via Camberwell and Peckham Rye (64% support), and over 50% of those respondents gave the reasons of poor connectivity and existing congestion on roads and public transport.
- 49% supported the option to Old Kent Road, with 40% of these giving reasons relating to the investment and development opportunities along the route and the lack of public transport options in the area.

CROSSRAIL

TUNNELLING MACHINE VICTORIA ARRIVES AT LIVERPOOL STREET — 11 March 2014

Tunnel machine Victoria, named after Queen Victoria who oversaw the birth of modern railways, has successfully broken in to the eastern end of Liverpool Street Crossrail station. The breakthrough, 40m beneath the City of London, is part of Crossrail’s longest tunnel drive, 8.3km from Limmo Peninsula, near Canning Town, to Farringdon.

Victoria now has 750m of tunnel to bore, before arriving at her final destination at Farringdon station this spring. Victoria has joined her sister machine Elizabeth at Liverpool Street, who arrived in January. TBM Elizabeth, named after HM The Queen, will shortly begin her journey to Farringdon. Elizabeth’s arrival will link all Crossrail tunnels for the first time with the big east/west breakthrough at Farringdon in the spring. On completion of Crossrail tunnelling, a total of 42km of rail tunnel will have been bored as part of Europe’s largest infrastructure project. Over 40km out of 42km have now been constructed.

Joint Venture Dragados Sisk is constructing the eastern tunnels between Pudding Mill Lane and Stepney Green, Limmo Peninsula and Farringdon, and Victoria Dock Portal and Limmo. The station tunnels at Liverpool Street have been built by a joint venture comprising Balfour Beatty, BeMo Tunnelling, Morgan Sindall and Vinci Construction. Start of Crossrail construction began at Canary Wharf on 15 May 2009. Tunnelling for Crossrail began in May 2012. The total funding available to deliver Crossrail is £14.8bn.

Crossrail is being delivered by Crossrail Limited (CRL). CRL is a wholly owned subsidiary of Transport for London. Crossrail is jointly sponsored by the Department for Transport and Transport for London.