

PICCADILLY LINE SIGNALLING & HOLBORN STATION UPGRADE – THE CASE FOR INVESTMENT

by John Hawkins

This recently produced document makes the case for linking line resignalling with the reconstruction of Holborn station. Whilst the new Piccadilly trains now in production will allow the current 24 trains per hour (tph) service to be increased to 27tph, resignalling could permit up to 36tph, the current target. However, capacity at Holborn station will limit services to 29tph without reconstruction. Forecasts show that almost a quarter of population growth, and a third of employment growth in central London boroughs will be within 1 km of a Piccadilly Line station.

The new fleet of trains will lead to a peak capacity increase of almost a quarter by late 2026. Stage 2 of the line upgrade, resignalling, will increase peak trunk capacity from 27tph to 36tph, resulting in a further 41% increase in peak capacity compared to today. Stage 2 has an estimated cost of just under £2.1 billion, most of which will be spent on replacement of the signalling system, with the remaining costs allocated to the purchase of up to 15 additional trains, power, cooling and other infrastructure enabling works. A new operational control centre is included.

There is mention of continuous production of additional trains to enable Stage 2, and for replacement of the Bakerloo Line fleet as part of the Bakerloo Line Upgrade and Extension, if this remains aligned with the November 2026 train production backstop date that has been agreed with Siemens. A long-planned build for the Central Line and Waterloo & City Line is not mentioned.

Stage 2 provides significant capacity increase to the Heathrow branches, increasing the peak service level from 12tph to 18tph. It also offers a major opportunity for the Piccadilly Line to take over the Ealing Broadway branch of the District Line when the trunk service reaches 33tph. This would simplify operations through Ealing Common and enable more District Line trains to run on the crowded Richmond and Wimbledon branches, with District Line capacity to Richmond increased by 50% and to Wimbledon by 25%.

Heathrow Airport expansion includes a third runway by 2029, assuming stage 2 of the Piccadilly Line upgrade is commissioned by then to meet 40% of demand. The current stage 1 of the Piccadilly Line upgrade will increase the peak service level in the central area, but does not offer any additional service uplift to Heathrow due to current signalling constraints, without compromising services to Uxbridge. Nor does it offer the journey time reductions or reliability improvements that could be secured with the replacement of Piccadilly Line signalling.

A capacity upgrade to Holborn Station is required to realise the full benefits of Stage 2 of the Line Upgrade. The scheme provides an additional entrance on Proctor Street, with new escalators and passages separating interchange traffic from those entering and leaving the station. The existing Kingsway entrance will be improved to provide fully accessible access. The former Aldwych branch platform will provide additional concourse space. (*Public consultation in Underground News for November 2017*).

Projections show that morning peak demand at Holborn is expected to increase by 18% by 2041. Holborn station is the only interchange between the Piccadilly and Central lines, which connects the Piccadilly Line with the City of London. Congestion issues will significantly reduce the benefits of the Piccadilly Line fleet replacement, with 2026 forecasts showing increased congestion in the ticket hall area, as well as between the top of the Piccadilly Line escalators and the Piccadilly Line platforms. Crowding is already deterring passengers. Recent studies show that nearly 30% of passengers who regularly exit Holborn station in the morning peak chose an alternative nearby station for their return journey in the evening peak, to avoid queuing and crowding at Holborn station.

Investment analysis of Stage 2, together with Holborn station upgrade, shows extremely high value for money due to reduced travel times and improved reliability on the Piccadilly Line, together with reduced crowding on both the Piccadilly and District lines. The 2020 document suggests that if design work and preparation for legal powers commenced in 2021, then the main works at Holborn could be completed by June 2030, with later completion and handover. Resignalling works would not commence until late 2028, with completion by late 2030. Provision for Piccadilly Line services to Ealing Broadway would then take until May 2031, with a 33tph Piccadilly Line service operating by December 2031, and the 36tph service a year later.