



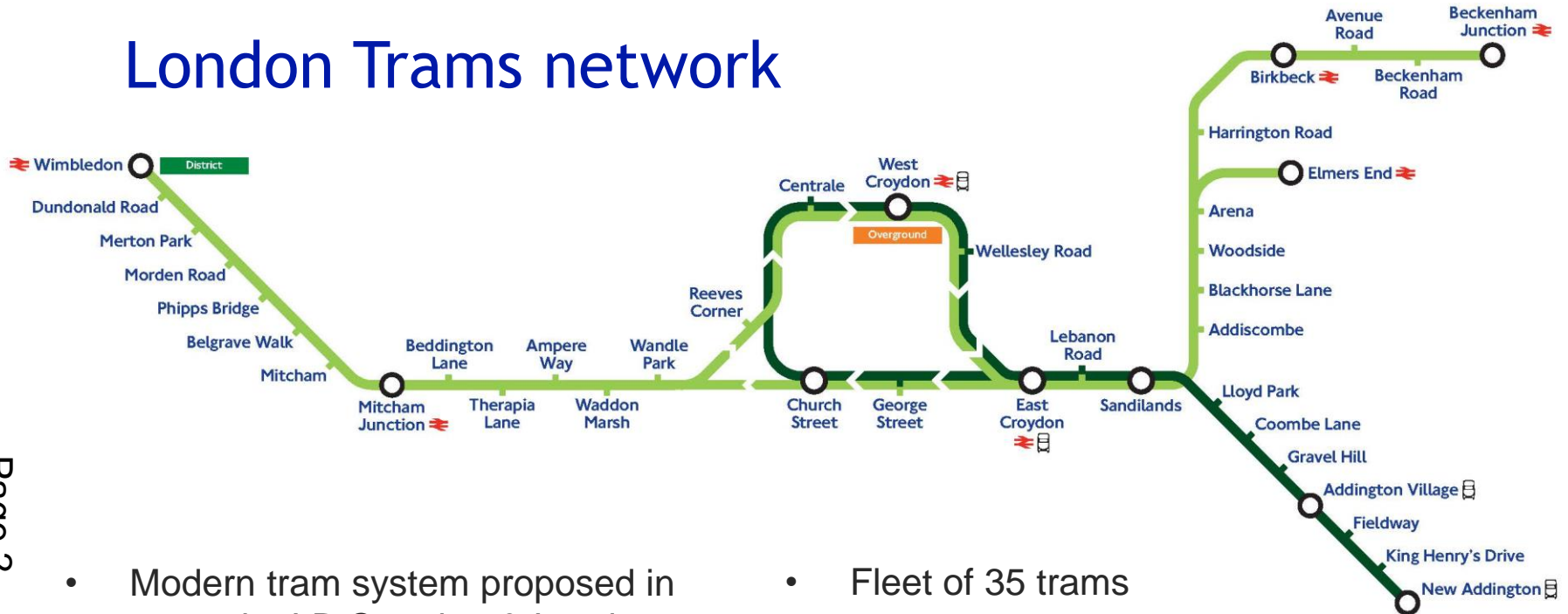
20 MARCH 2018

London Trams update

LB Croydon Streets, Environment & Homes Scrutiny Sub-Committee



London Trams network



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- Modern tram system proposed in 1990s by LB Croydon & London Regional Transport (now TfL)
- Croydon Tramlink Act 1994 gave powers to build & operate
- Opened in 2000 as a PFI
- Operated by FirstGroup, now maintained in-house
- Fleet of 35 trams
- Mostly segregated alignment
 - ◊ *Mix of old railway corridors, new off-street routes, and on-street running in central Croydon*
- Bus fare system
- c.31 million trips per year
 - ◊ *UK's fourth-busiest light rail system*
- Growth in Croydon and south London is forecast to nearly double ridership by the early 2030s



Tram safety

The safety of our customers and staff will always be our top priority, and we have put a range of measures in place over the past year to improve the safety of the tram system and to help ensure such a tragic event can never occur again, and there is more that we are working on. We are also making sure we learn important lessons across TfL from this terrible incident.

Our thoughts remain with all those who lost their lives or were injured in the tragedy at Sandilands, and we continue to do all we can to support everyone affected. The TfL Sarah Hope line remains available to all those affected and continues to provide help with counselling and other support to anyone who needs it.

We also continue to work with the UK tram industry to ensure lessons are learnt and that we are collectively able to introduce any further measures that could improve the safety of trams across the UK. In February we hosted our second Tram Summit, where we shared these lessons and considered the RAIB recommendations with our colleagues in the tram industry.



Tram safety

- The Rail Accident Investigation Branch (RAIB) published its Sandilands report in December 2017. TfL published the results of our own investigation in January 2018. SNC-Lavalin was commissioned to conduct this additional investigation alongside those of the RAIB, Office of Rail and Road (ORR) and the BTP
- The findings were discussed with TfL Board members at a special safety panel meeting on 22 January 2018
- Both reports reach similar conclusions, that the root cause of the derailment is likely to have been a temporary loss of awareness of the driver which meant he failed to apply sufficient braking as the tram approached the Sandilands curve
- Each report has recommendations for us, FirstGroup (which operates the tram network for TfL), and in the case of the RAIB report, the wider tram industry



Tram safety - activities

Since the incident we have introduced a number of additional safety measures to our tram network, including:

- Permanently reduced the maximum speed across the tram network (70kph, down from 80kph)
- Implemented step-down speeds with signage at four locations, creating a graduated reduction in allowable line speed on the approach to sharp curves
- Chevron signs have been installed at Sandilands and at the three other significant bends to provide an additional visual cue for drivers. The number of speed signs has been increased and additional lineside digital signage provides added speed warnings to drivers
- An in-cab driver protection device has been fitted to all trams, so drivers are alerted immediately when any sign of driver distraction or fatigue is detected
- The CCTV recording system has been replaced and upgraded.



Tram safety - activities long term

Additional longer-term workstreams are still in progress to investigate and deliver other safety improvements:

Working with safety experts to test various options to strengthen the glass fitted on trams

Development of an in-cab driver alert system for monitoring and managing tram speed, including the automatic application of emergency brakes

Adapting iBus technology for the tram network (known as iTram) as a package of safety improvements

Potential track modifications are under consideration; currently tendering for a concept design to assess potential benefits

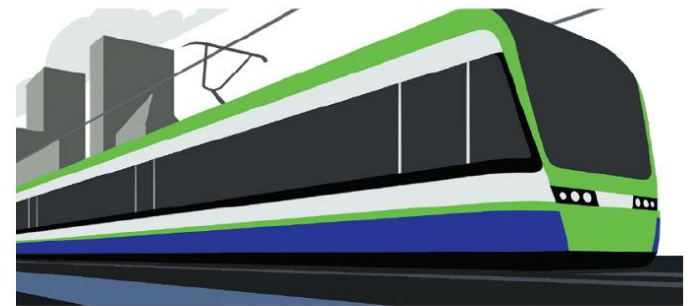
Working to improve locally-powered emergency lighting, including development of a specification for the tram fleet which will prevent unintentional interruption during an emergency.

London Trams is also working with colleagues in London Buses and the wider bus and coach industry in relation to the strength and containment capability of windows and doors on buses and coaches.

Trams for Growth

Trams for Growth (formerly *Trams 2030*) is TfL's approved upgrade strategy for the tram network, last updated in April 2016. A number of changes have occurred since then, such as:

- ◇ Review of how Wimbledon 12tph timetable (Key Output 0) has worked
- ◇ Detailed analysis of passenger volumes on board every service and how run times have changed across the network
- ◇ Changes to some fleet & asset assumptions
- ◇ Reviewed opportunities for improving operations whilst delivering passenger improvements such as reduced bunching and shorter wait times, resulting in the February 2018 timetable
- ◇ Updated assumptions about completion of key growth drivers, e.g. Westfield
- ◇ Potential delivery of the Sutton extension at an earlier point in the strategy, with its associated infrastructure requirements



V16.2 (APRIL 2016)

Trams for Growth

Our plan to enhance the tram network to support growth in South London



EVERY JOURNEY MATTERS

Following further analysis and emerging policy documents such as the Mayor's Transport Strategy and revised London plan, TfL will be updating Trams for Growth in 2018



EVERY JOURNEY MATTERS

Vision for Trams

- Trams will **support planned growth**
by bringing commuters to new jobs in Croydon and Wimbledon, and leisure travellers from across south London into the growing retail centre in Croydon
- Trams will **feed major transport hubs**
by providing a rapid local link from new housing areas into high-frequency rail services to inner & central London – Thameslink at East Croydon, Crossrail 2 at Wimbledon
- Trams will **unlock thousands of new homes**
through capacity and connectivity upgrades that, coupled with regeneration masterplans, enable more homes to be built around the network
- Trams will **integrate with a frequent local rail network** for south London
– they are part of our vision for an integrated ‘metro’ network of Tube, Tram and Overground/rail services across the whole of south London, allowing ‘orbital’ journeys to take place much more easily than now – such as Mitcham to Peckham, or Beckenham to Sutton

Phase 1: Now to 2022

Making the network work more efficiently

- ◇ 'Foundation' timetable change in February 2018
- ◇ Reinstatement of East Croydon tram stop to automated working – mid 2018
- ◇ Wellesley Road tram stop improvements – 2019?
- ◇ Elmers End line enhancements (double-tracking & 2nd platform at Elmers End) – late 2019 or early 2020
- ◇ Ambition to increase New Addington service from 8tph to 9tph or more (requires at least 31 trams in service daily)



Preparing for Westfield and other major town centre growth

- ◇ More resilience so we can reliably operate more services – requires an eastern turnback & other supporting infrastructure changes, including expanding Wellesley Road tram stop
- ◇ Learning from Stratford's lessons on travel patterns before and after Westfield



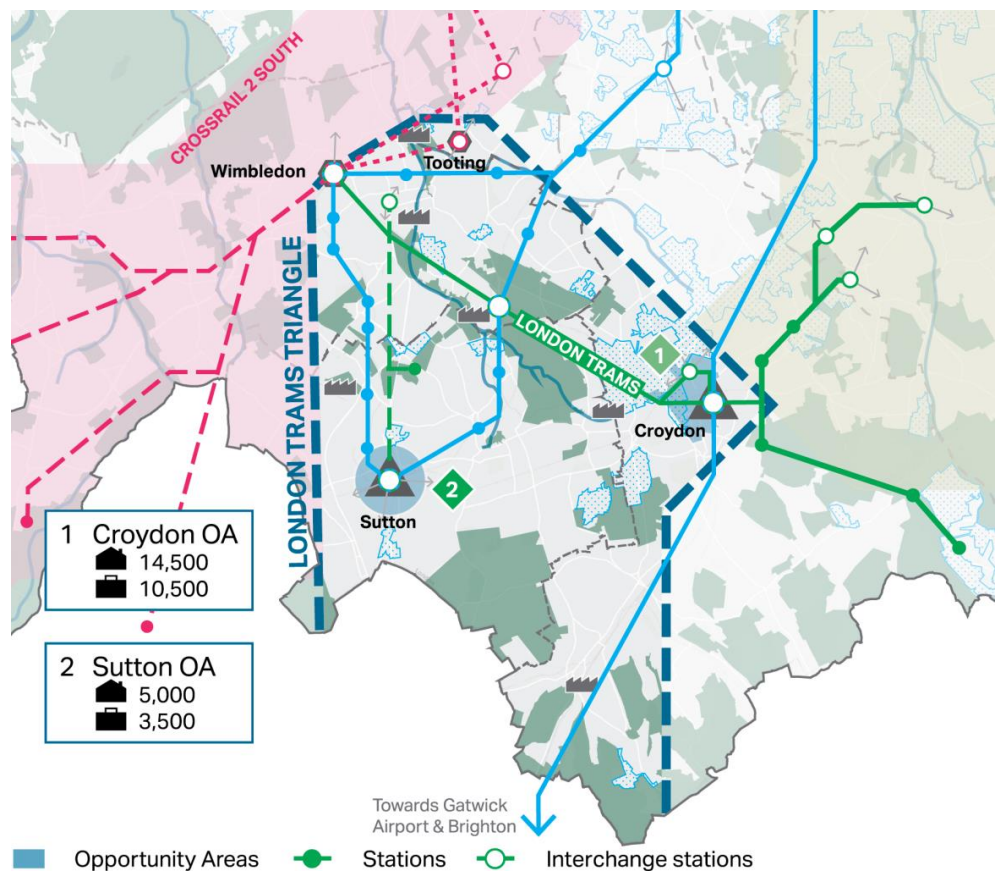
Phase 2: 2022 to 2030

Expanding for growth

- ◇ Lots more homes & jobs in Croydon, a designated Opportunity Area
- ◇ New London Plan also designates Wimbledon and Sutton as Opportunity Areas...
- ◇ ...and a growth corridor called the Tram Triangle

Major phase of new infrastructure investment

- ◇ Around £165m on existing network
- ◇ Looking for funding partnerships in addition to the Croydon Growth Zone
- ◇ New housing along the line may be able to contribute much of the rest



Phase 2 investment

Key Output 3: 6tph Morden Road - Elmers End



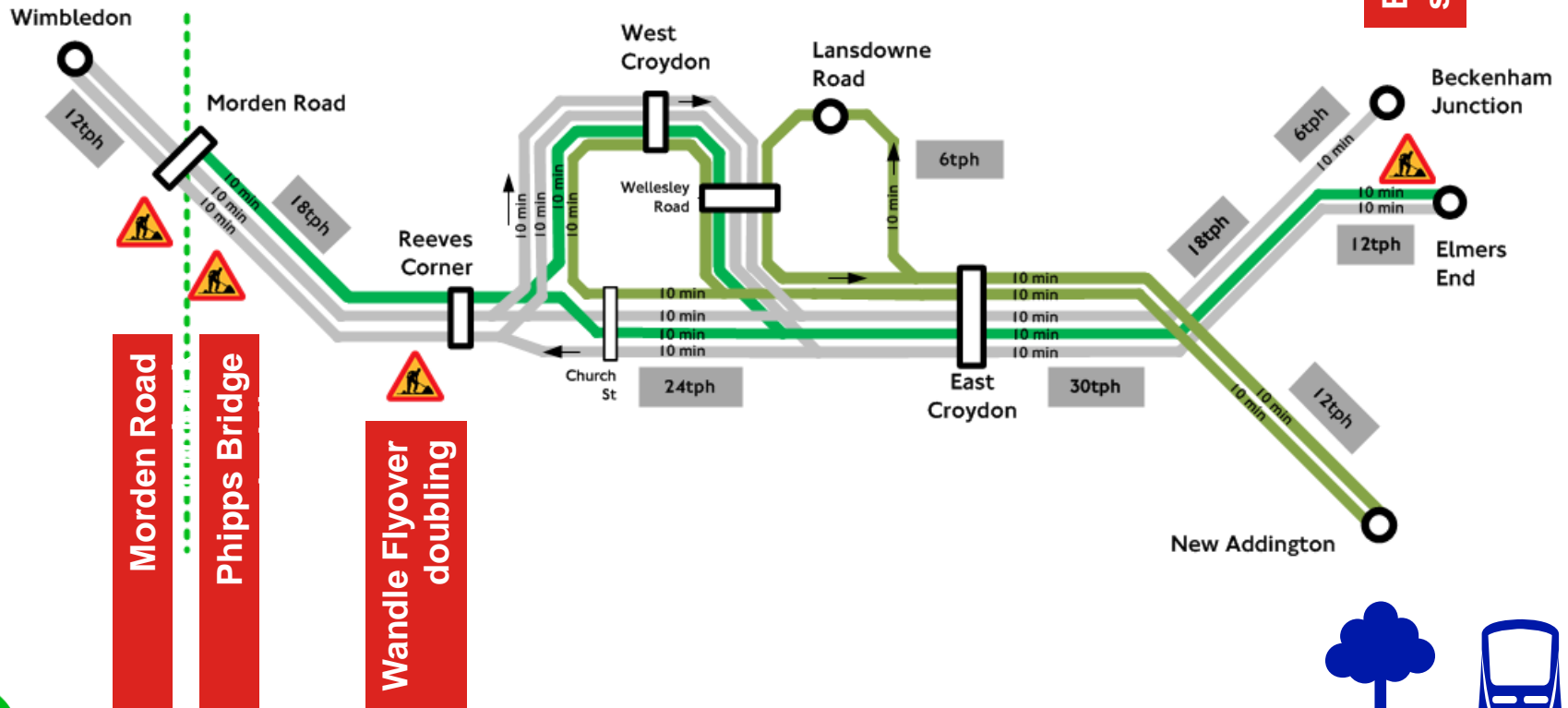
PVR 44/49 trams (+11)



Wandle Flyover doubling
Morden Rd-Phipps Bridge doubling
Additional stabling
Power upgrades

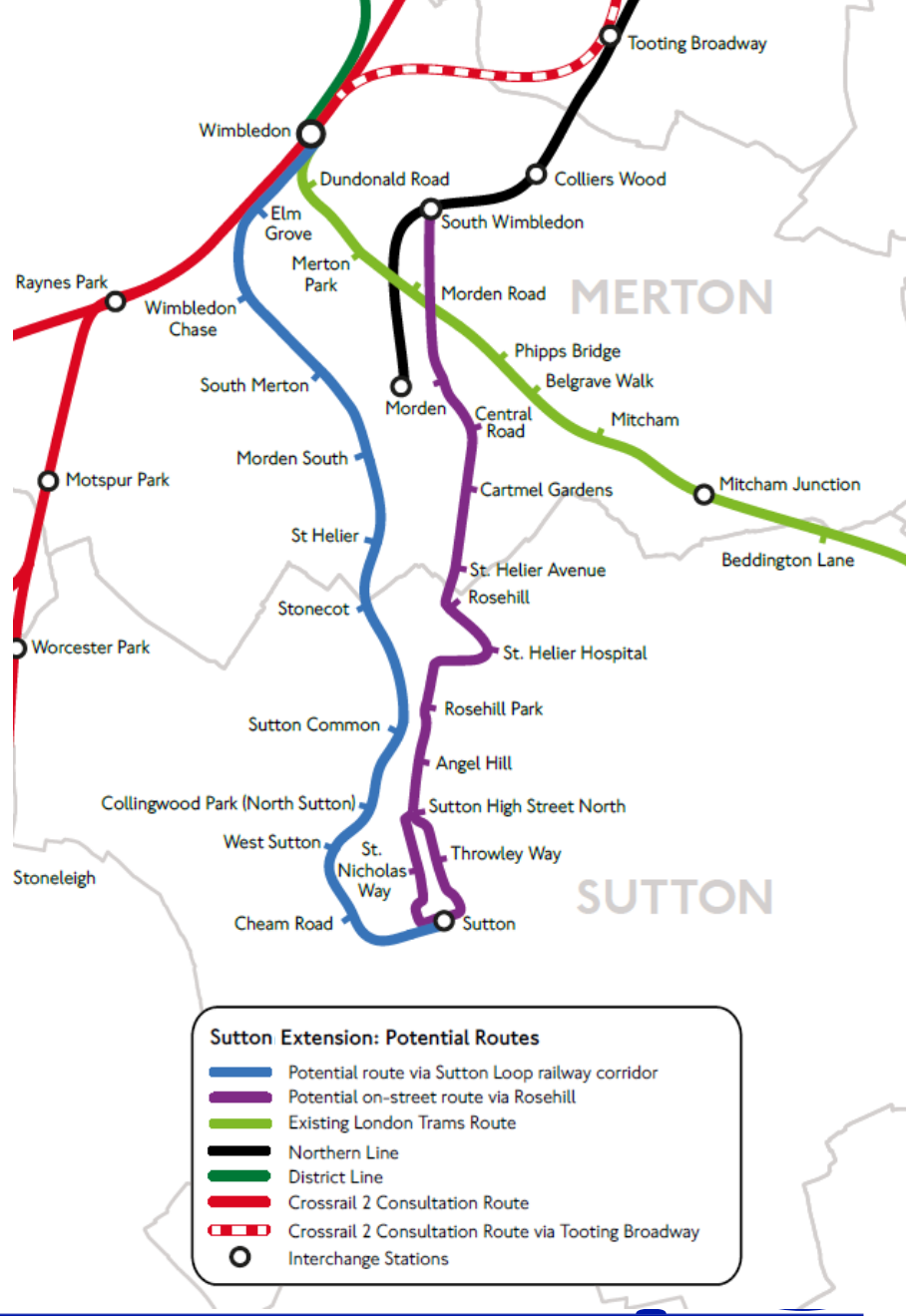
Eastern satellite depot

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Sutton Extension

- Identified in draft Mayor's Transport Strategy; has strong local support
- TfL asked to further develop a Sutton extension scheme to sufficient detail for a potential future Transport & Works Act Order (TWAO) application to be made within the current Mayoral term, subject to funding to deliver the scheme being available
- New phase of work recently commissioned by TfL, with objective to prepare as far as TWAO submission point
- Multiple route options being assessed
- Passengers travelling to/from Croydon on the existing line would benefit from a new connection with the Northern line at South Wimbledon or Colliers Wood



Phase 3: To Crossrail 2 & beyond

There are various options to improve the network in the long term, including:

Direct Sutton
– Wimbledon
services?

Longer
Trams?

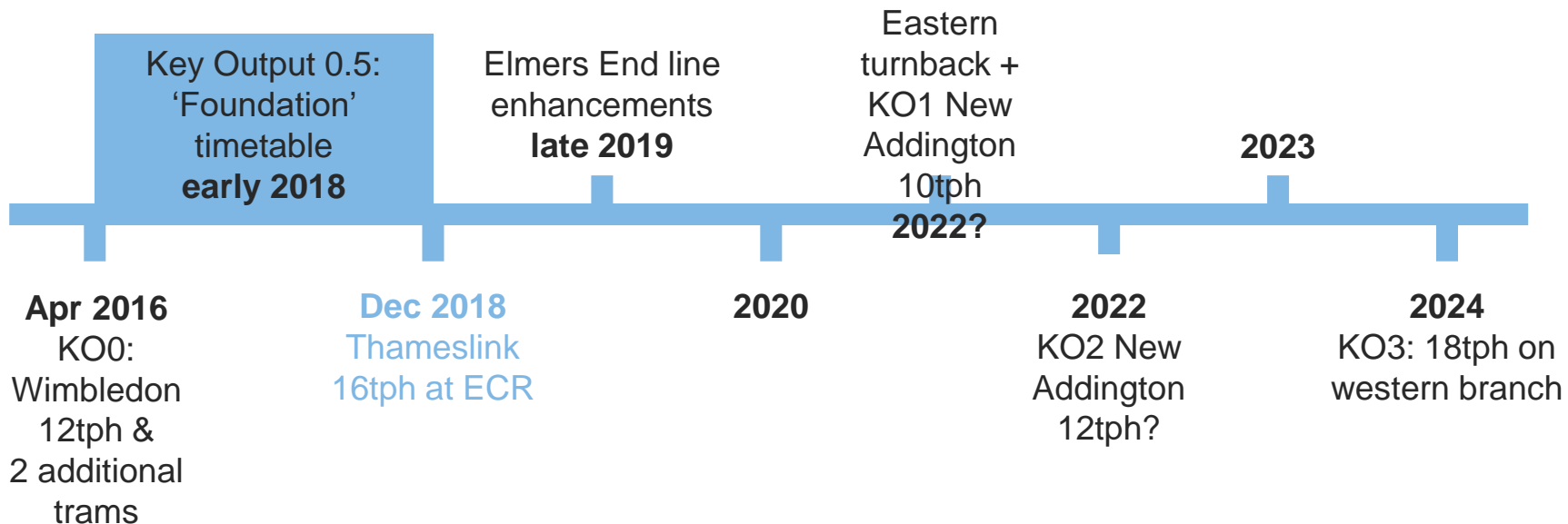
More
services to
Beckenham?

24tph west
of Croydon?



Current strategy & timeline

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How can we get the most out of the Tram network in the next few years?



Tram extensions

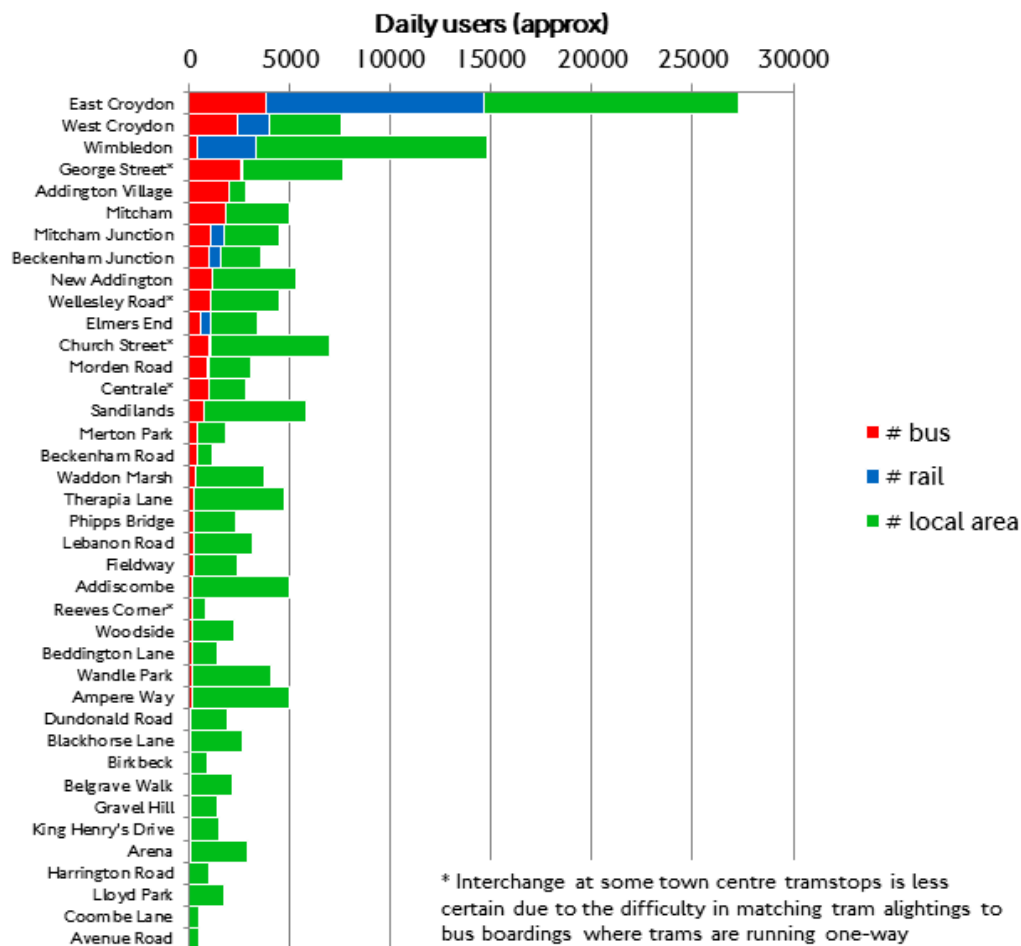
“Extensions for the tram network will be considered where they enable the provision of new homes and jobs in line with Good Growth principles, are supported by Local Plans and can be funded primarily through locally derived sources.”

- Mayor’s Transport Strategy, page 233



Tram connections

- The tram network connects with the National Rail network at 7 stops, providing links to rail services across south London including South Western Railways, Southern, Southeastern, and London Overground. Geographically, direct connections that can be made from the tram network reach from Guildford to Orpington and Bedford to Brighton
- Around half of tram passengers interchange to or from other public transport – 20-25% to/from rail or Underground, and another 30% to/from buses (now using the Hopper fare)





Contact

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