

Overground into Crossrail

The Overground is one of the most encouraging developments in London's transport in recent years. Some of the most unloved and shabby railways have been transformed into bright, clean, popular routes, with convenient and frequent services, and impressive levels of passenger satisfaction. Usage has increased so strongly that overcrowding is now a problem. Since the extension over the South London line to Clapham Junction on 9/12/2012, the emphasis has been on consolidation, and on increasing the train length from 4 to 5 carriages.

The North London line section from Stratford to Willesden Junction and Shepherd's Bush is electrified at 25KV overhead, as will be the currently-diesel-operated Tottenham & Hampstead / Tottenham & Forest Gate sections (Gospel Oak – Barking) from 2019; the rest is all 3rd rail DC.

The present article considers future development of the Overground, and suggests how this might best be coordinated with Crossrail developments. Eventually a situation is reached whereby, with very little new build, a sizable portion of the Overground is itself transformed into a Crossrail – Crossrail 5. The various stages are illustrated in the following maps. The situation prior to 31/05/2015 was Stage 0.

From 31/05/2015, most of the Lea Valley services, from Liverpool St. to Enfield Town, Cheshunt via the Southbury loop, and Chingford, became part of the Overground, as also the branch from Romford to Upminster. These are inner-city metro routes, manifestly of the Overground type, and it is hoped and anticipated that similar improvements will occur as on the existing routes. These routes are all electrified at 25KV. This is Stage 1 in the maps.

The Kent Metro services to Dartford via Woolwich, Bexleyheath and Sidcup are very similar in character to the Lea Valley ones, and TfL wished to take these into the Overground as well, but this was strongly and successfully opposed by Kent County Council. Their fear seems to be that the change would result in a poorer service into north Kent, via Gravesend. I suggest that these fears be addressed and overcome by an extension of the Abbey Wood arm of Crossrail, and then the Kent Metro taken into the Overground.

Crossrail is due to open in 2018. The situation will then be as depicted in the map 'Overground Stage 1 and Crossrail'. There are already speculative plans for extending Crossrail to Dartford, to Ebbsfleet, perhaps even to Gravesend. What is actually required, as soon as possible, is its extension all the way to Rochester. This would involve new tracks as far as Dartford, then taking over the North Kent line and converting to 25KV overhead (and also electrifying the branch to the proposed new town of Grain, and the Kent Oil Refinery), thus enabling a service of 8tph to Dartford and 4tph to Grain. New tracks would be required from Strood to Rochester, together with a new Medway bridge. All fast trains for the North Kent line beyond Rochester, from Victoria, Charing Cross or Cannon St., would travel via Chislehurst Junction and Sole Street. The situation will then be as depicted in the map 'Overground Stage 1 and Crossrail Extension'.

At some point in this timeframe, three small (in terms of distance, if not of complexity) changes are required to the Overground:

1. To free up capacity at Euston, the Watford electrics need to be diverted from Primrose Hill to join the East London line at Highbury & Islington. This requires two new tracks (the restoration of former tracks, long out of use) between Camden Rd. Junction and Highbury & Islington.
2. The Overground routes from Willesden to Clapham Junction and Richmond need to be diverted to serve Old Oak Common, in advance of the arrival of HS2. One suggested configuration, the so-

called 'Poirot moustache', has the Richmond trains routed initially along the Clapham Junction route, then curving westward parallel to the GW line to serve Old Oak Common, then rejoining the Richmond line; the Clapham Junction trains likewise initially proceeding along the Richmond line then curving eastward to serve Old Oak Common and rejoin the Clapham Junction line.

3. Ideally, the Bakerloo should also be extended from just west of Kensal Green tunnel to Old Oak Common, and all services start there. This short section of line would also be used by the Overground; those East London line trains not starting at Watford Junction or Harrow & Wealdstone would instead start from Old Oak Common (where they would have their own platforms, distinct from the Bakerloo, to enable step-free access); there would no longer be East London line services starting from Highbury & Islington or Dalston Junction. This situation is Stage 2 in the maps, at a larger scale to allow the details to be seen.

With the North Kent line services via Gravesend all taken over by the extended Crossrail, there can no longer be any possible objection to the Kent Metro routes becoming part of the Overground. This is Stage 3 in the maps.

The Overground now has an intensive metro service into the Liverpool St. terminus, and a similar intensive metro service into the Cannon St. terminus. Clearly, the sensible thing is to join them up by a new link between Liverpool St. and Cannon St. This is only half a mile in distance, though clearly, given the location, the technical issues would be challenging. The link should also include a connection from Moorgate (Great Northern and City line), in order to include the GN inner-suburban services. An explicit benefit of this is to achieve a better balance of services north and south of the Thames (since there are more Kent Metro services than Lee Valley Metro). It would also be desirable to restore the line between Finsbury Park and Alexandra Palace, and add a further link from Wood St. to South Woodford, allowing the line from Woodford to Hainault to be taken over. With these further additions, the balance between services north and south of the Thames is essentially perfect. The Kent and Lee Valley Metro routes, together with the GN inner-suburban, become Crossrail 5, illustrated as Overground Stage 4 and Crossrail 5 in the maps. This also includes a service from Victoria to Dartford, to provide the service between Blackheath and Charlton.

Crossrail 5 thus has two components:

1. The Overground services:
 - Liverpool St. – Enfield / Cheshunt / Chingford / Hainault
 - Cannon St. – Dartford via Woolwich, Bexleyheath and Sidcup
2. The GN inner-suburban services:
 - Moorgate (GN & City) – Welwyn Garden City / Hertford North / Alexandra Palace

Suggested service plans for these components:

Kent Metro:

- 4tph Cannon St. – London Bridge – Deptford – Greenwich – Maze Hill – Westcombe Park – Charlton – Woolwich Dockyard – Woolwich Arsenal – Plumstead – Abbey Wood – Belvedere – Erith – Slade Green → Cannon St. via Bexleyheath / Sidcup alternately, 2tph each

- 4tph Cannon St. – London Bridge – New Cross – St. John’s – Lewisham – Blackheath – Kidbrooke – Eltham – Falconwood – Welling – Bexleyheath – Barnehurst → Dartford / Cannon St. via Woolwich alternately, 2tph each
- 4tph Cannon St. – London Bridge – New Cross – St. John’s – Lewisham – Hither Green – Lee – Mottingham – New Eltham – Sidcup – Albany Park – Bexley – Crayford → Dartford / Cannon St. via Woolwich alternately, 2tph each
- 4tph Cannon St. – London Bridge – New Cross – St. John’s – Lewisham – Hither Green – Grove Park – Elmstead Woods – Chislehurst – Petts Wood – Orpington
- 4tph Cannon St. – London Bridge – New Cross – St. John’s – Lewisham – Hither Green – Grove Park – Sundridge Park – Bromley North
- 4tph Cannon St. – London Bridge – New Cross – St. John’s – Lewisham – Ladywell – Catford Bridge – Lower Sydenham – New Beckenham – Clock House – Elmers End – Eden Park – West Wickham – Hayes
- 4tph Victoria – Battersea Park – Wandsworth Rd. – Clapham High St. – [switch to northern pair of tracks at Shepherds Lane Junction] – Brixton – Denmark Hill – Peckham Rye – Nunhead – Lewisham – Blackheath – Charlton – Woolwich Dockyard – Woolwich Arsenal – Plumstead – Abbey Wood – Belvedere – Erith – Slade Green – Dartford

Lee Valley Metro:

- 4tph Liverpool St. – Bethnal Green – Cambridge Heath – London Fields – Hackney Downs – Rectory Rd. – Stoke Newington – Stamford Hill – Seven Sisters – Bruce Grove – White Hart Land – Silver St. – Edmonton Green – Bush Hill Park – Enfield Town
- 4tph Liverpool St. – Bethnal Green – Cambridge Heath – London Fields – Hackney Downs – Rectory Rd. – Stoke Newington – Stamford Hill – Seven Sisters – Bruce Grove – White Hart Land – Silver St. – Edmonton Green – Southbury – Turkey St. – Theobald’s Grove – Cheshunt
- 4tph Liverpool St. – Bethnal Green – Cambridge Heath – London Fields – Hackney Downs – Clapton – St. James St. – Walthamstow Central – Wood St. – Highams Park – Chingford
- 4tph Liverpool St. – Bethnal Green – Cambridge Heath – London Fields – Hackney Downs – Clapton – St. James St. – Walthamstow Central – Wood St. – South Woodford – Woodford – Roding Valley – Chigwell – Grange Hill – Hainault

GN Inner-Suburban:

- 4tph Moorgate – Old St. – Essex Road – Highbury & Islington – Drayton Park – Finsbury Park – Harringay – Hornsey – Wood Green – New Southgate – Oakleigh Park – New Barnet – Hadley Wood – Potters Bar – Brookmans Park – Welham Green – Hatfield – Welwyn Garden City
- 4tph Moorgate – Old St. – Essex Road – Highbury & Islington – Drayton Park – Finsbury Park – Harringay – Hornsey – Wood Green – Bowes Park – Palmers Green – Winchmore Hill – Grange Park – Enfield Chase – Gordon Hill – Crews Hill – Cuffley – Bayford – Hertford North
- 4tph Moorgate – Old St. – Essex Road – Highbury & Islington – Drayton Park – Finsbury Park – Crouch End – Highgate – Cranley Green – Muswell Hill – Alexandra Palace

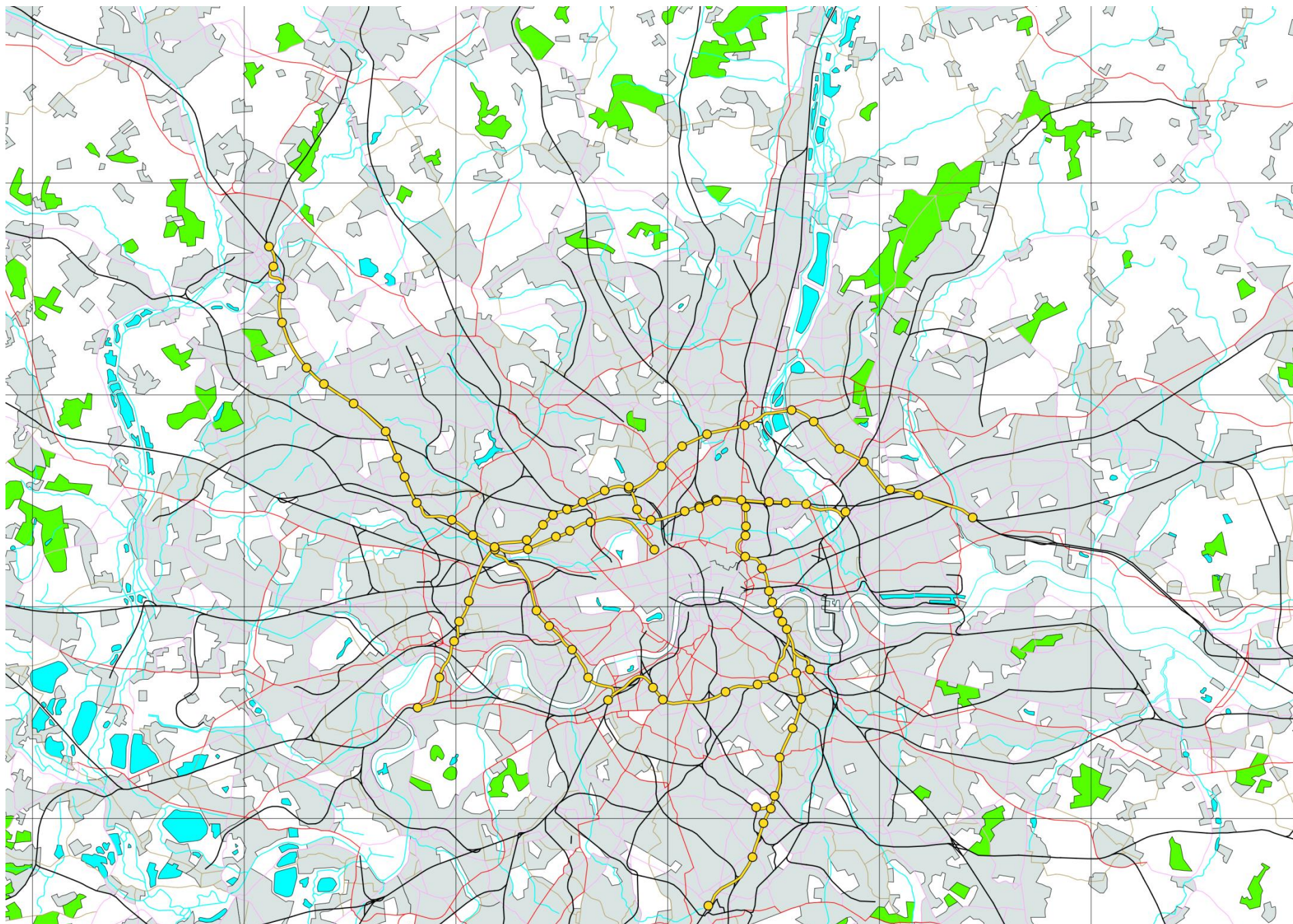
Overall Services:

Joining up these various services:

- 4tph Enfield Town → Liverpool St. – Cannon St. → Woolwich → Slade Green –:
– 2tph → Bexleyheath → Cannon St. → Chingford
– 2tph → Sidcup → Cannon St. → Hainault
- 4tph Chingford → Liverpool St. – Cannon St. → Bexleyheath –:
– 2tph → Woolwich → Enfield Town
– 2tph → Dartford
- 4tph Hainault → Liverpool St. – Cannon St. → Sidcup –:
– 2tph → Woolwich → Enfield Town
– 2tph → Dartford
- 4tph Cheshunt → Liverpool St. – Cannon St. → Hayes
- 4tph Welwyn Garden City → Moorgate – Cannon St. → Orpington
- 4tph Hertford North → Moorgate – Cannon St. → Bromley North
- 4tph Victoria → Lewisham → Woolwich → Dartford

The Maps:

1. (p5) Overground Stage 0: Position as at 1.5.15
2. (p6) Overground Stage 1: Position as at 31.5.15, having absorbed the Lea Valley Metro
3. (p7) Overground Stage 1 and Crossrail: situation when Crossrail opens (2018)
4. (p8) Overground Stage 1 and Crossrail Extension 1: projected Crossrail extension to Rochester opens, which addresses Kent CC's fears of Overground absorbing Kent Metro
5. (p9) Overground Stage 2: 3 short but important extensions – Primrose Hill to Highbury & Islington (joins Watford DC electrics with East London Line), Overground routes from Willesden Junction to Richmond and Clapham Junction serve Old Oak Common via the 'Poirot's Moustache' configuration), Bakerloo and Overground extended from Queen's Park to Old Oak Common (Bakerloo no longer runs to Harrow & Wealdstone).
6. (p10) Overground Stage 3: Overground absorbs Kent Metro to Dartford; Crossrail serves North Kent line beyond Dartford.
7. (p11) Short but difficult connections Liverpool St. and Moorgate (GN & City) to Cannon St. allow a significant portion of the Overground – Lea Valley Metro and Kent Metro – together with GN suburban from Welwyn and Hertford (also reopened branch Finsbury Park – Alexandra Palace) to metamorphose into Crossrail 5. Map shows central portions of Crossrail and Crossrail 5, together with residual Overground routes.
8. (p12) Crossrails and Overground in Central London; large scale showing all 5 crossrails and the Overground in the central area.
9. (p13) Complete map of Crossrail 5.
10. (pp14-15) Annotated maps of Crossrail 5.

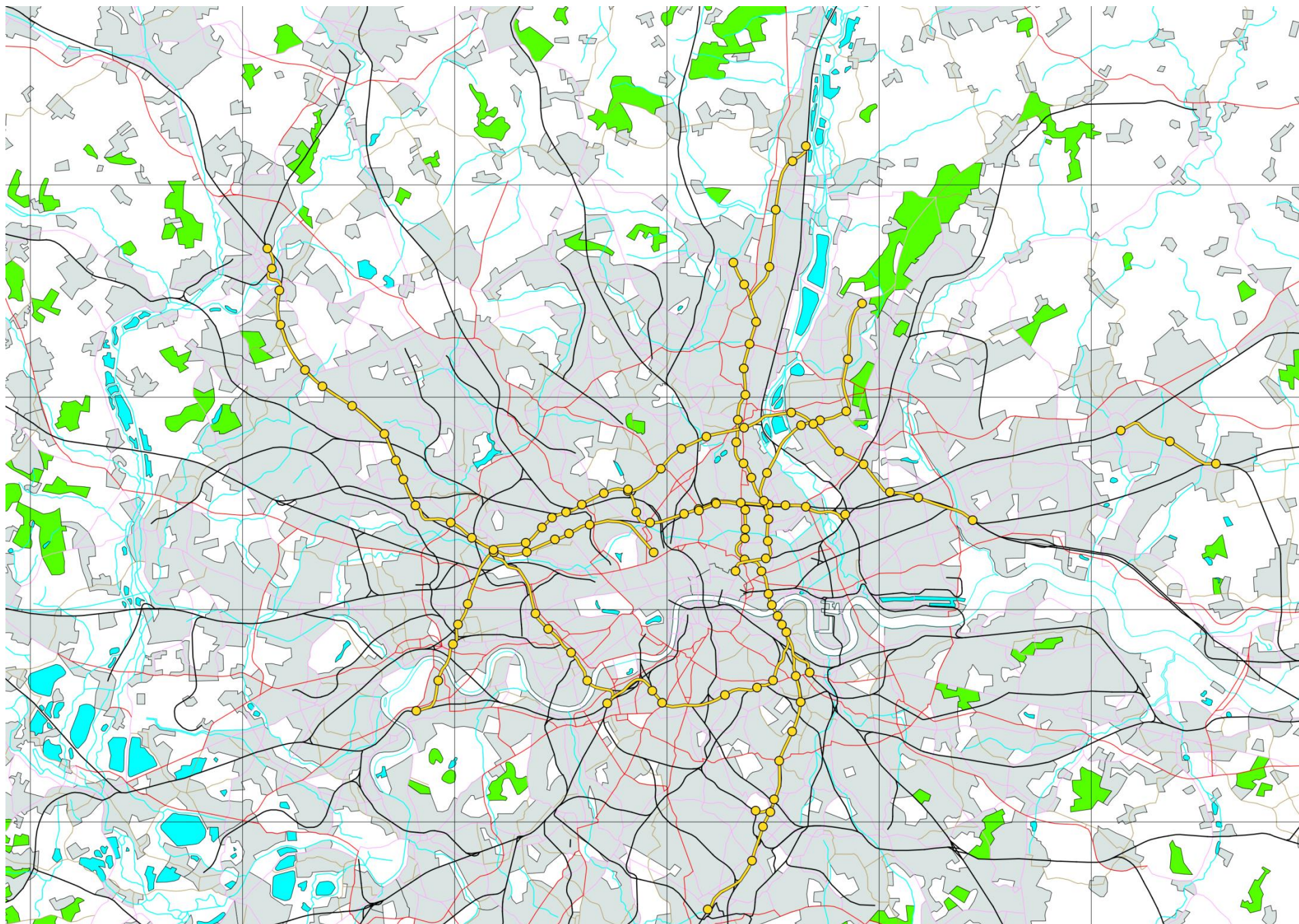


Overground Stage 0

Overground into Crossrail v2.3

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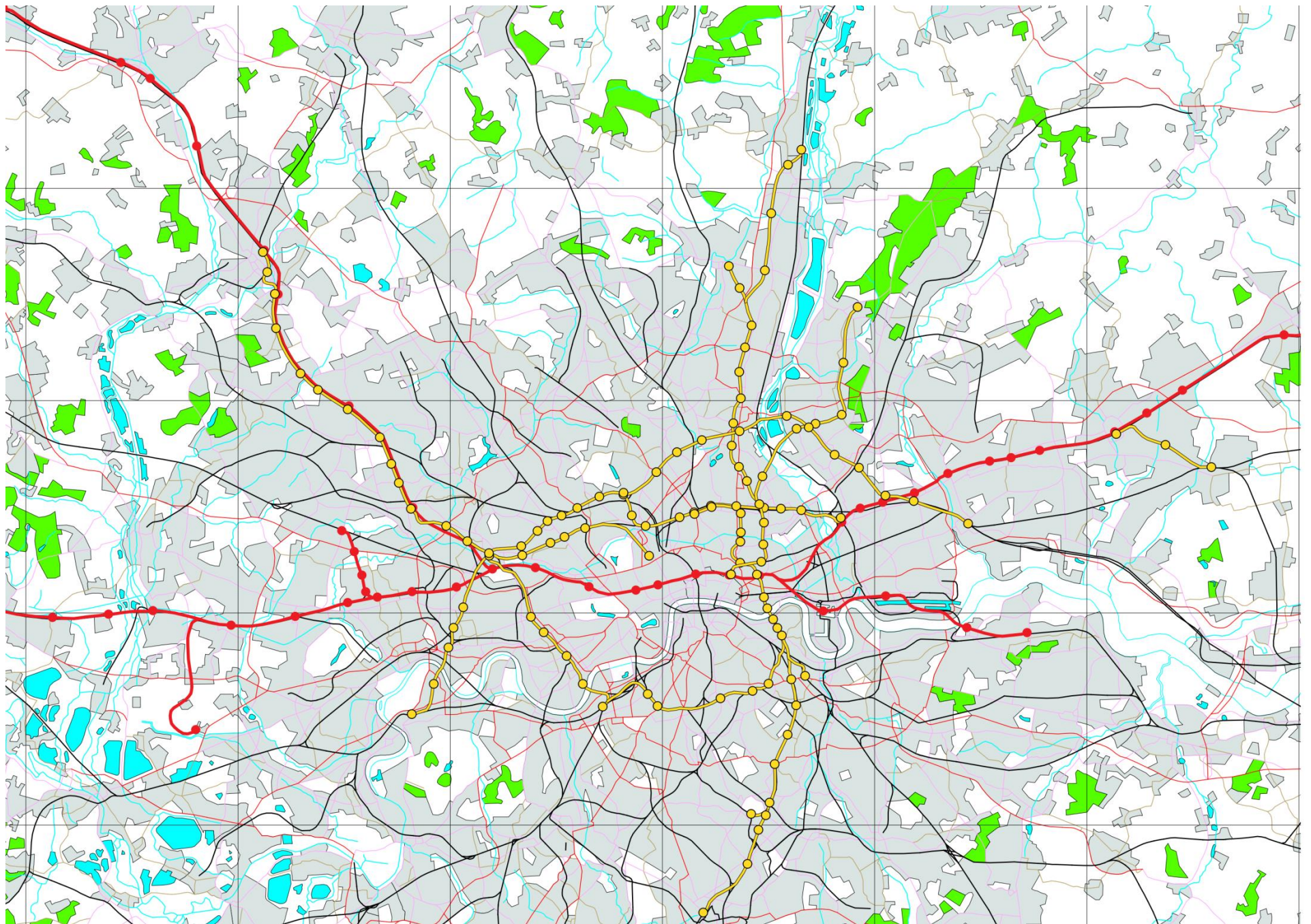


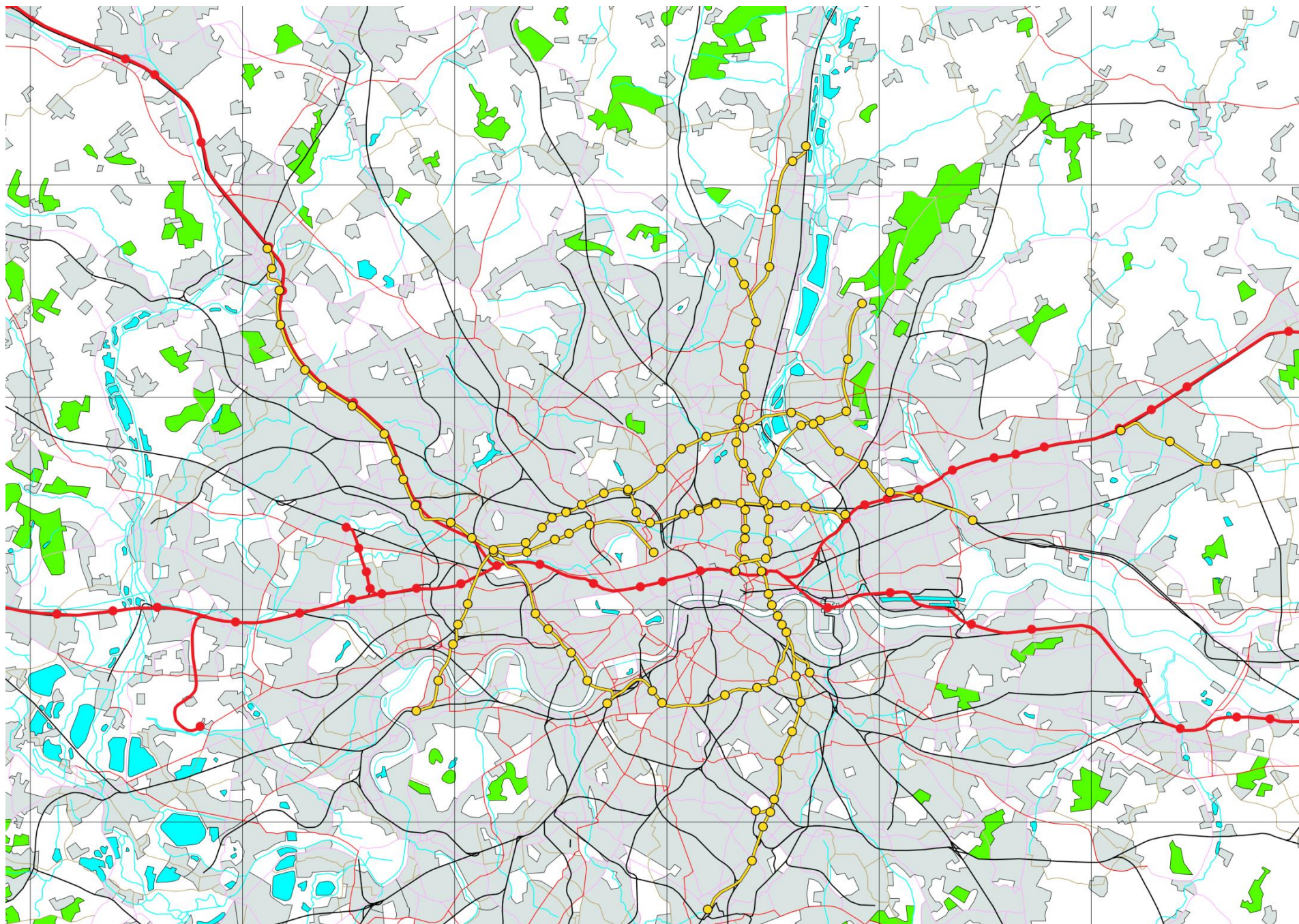
Overground Stage 1

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Overground Stage 1 and Crossrail Extension
Overground into Crossrail v2.3

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