

Thameslink

The Thameslink project is progressing very satisfactorily. When complete, it will be an immensely valuable component of London's transport system. I have one, detail criticism of the current plans, (see below,) but otherwise regard them as excellent, and will welcome the completed system unreservedly. In this article, I would like to consider the further development of Thameslink, in the longer term, after it has been in service for a decade or so, with refinements and extensions to the service plan.

Thameslink is a strange hybrid, reflecting its origins. It may truly be said never to have been designed, but to be an intelligent adaptation of infrastructure which just happened to be there, in the right place, for a variety of historical reasons. Its rebirth as Thameslink is a particular pleasure to me, as I remember the disused Snow Hill tunnel, back in the 1960s. Here was a valuable piece of infrastructure lying disused and ignored, but just demanding to be reinstated as the key link in a north-south cross-London route. I also remember the incredible, bone-headed stupidity of the British Railways decision makers of the time, who just couldn't see the point of cross-city lines. Berlin had had its Stadtbahn since the 1880s, of course, so the idea was well known, but that was foreign, so not relevant here. (That attitude may sound a joke today, but in those days it was in fact quite prevalent. I'm not making this up!)

Thameslink isn't an urban metro, like the various Crossrails and the Overground, though it does have a genuine metro component. In the main, it is an inter-regional network, over quite long distances, very much on a north-south axis, (as is immediately clear from the overall key map on page 7). It has very much an outer-suburban character, serving relatively few inner-London stations. On the sections approaching inner-London, these services are mostly non-stop.

As noted, although Thameslink is mainly outer-suburban, it does have a metro component. A particular group of services, on the Wimbledon / Sutton loop and those out to Sevenoaks and Maidstone, are indeed all-stations, metro-style services. Thameslink's services naturally divide into two groups, those via London Bridge, and those via Elephant & Castle. The services of the London Bridge group are all outer-suburban, and those of the Elephant & Castle group are all metro.

It was the original intention that the services of the Elephant group would all terminate at Blackfriars, in the two terminal platforms specially constructed for them there. Complaints from Wimbledon and other parts served by them led to a corporate loss of nerve, and it was agreed that these services should continue further north to destinations such as Kentish Town and St. Albans. This has rendered the terminal platforms at Blackfriars largely redundant, and led to conflicting movements over flat junctions, reducing overall capacity through the core north of Blackfriars. This is my detail criticism: that was a very bad decision. My first proposal is thus that the original plan be reinstated, and the outer-suburban and metro services kept completely separate (with a sop to Wimbledon & Co. in the doubling of their service frequencies). The initial loadings of Thameslink are planned as a maximum of 24tph through the core (St. Pancras Thameslink – Blackfriars), with 16tph thence via London Bridge and 8tph via Elephant & Castle. I propose running 32tph through the core, all continuing via London Bridge, and 16tph from Blackfriars via Elephant & Castle. Interchange between the groups of services at Blackfriars would be improved by a bridge between the platforms, in the centre of the platforms' length, with escalators and lifts.

The initial services will be introduced as planned. I expect it will become clear quite soon afterwards that continuing the metro services north of Blackfriars was a mistake, and is a serious handicap to capacity and timekeeping.

Infrastructure Extensions

For the extended services that I propose, a number of former lines need to be restored.

The former line between Bedford and Northampton is restored, with intermediate stations at Olney and Northampton Bridge St. This extension features in other plans also, in enabling a service from St. Pancras (West) to Worcester via Birmingham, and providing connections into HS3 at Northampton. Full details are in the articles ‘HS3 Route and Service Plans’, ‘WCML Service Plans’ and ‘MML Service Plans’.

The Uckfield line is restored through to Lewes and Brighton, following the recommendations of the Brighton Main Line 2 Campaign group, with a new approach to Lewes from the north, and a loopback arrangement to the east, to allow the trains to change direction and continue to Brighton without reversal.

Also on the Wealden Lines, the former connection from Crowhurst Junction to the Redhill – Tonbridge line is restored, to allow a service to Tunbridge Wells to be routed this way.

Ideally needed would be a grade separated junction slow-fast lines just south of Luton, and another, fast-slow, just before Kentish Town, to allow the faster services from Bedford to overtake the slower ones from Luton. Alternatively, rebuild one or more stations to enable overtaking.

The Service Plan – Outer Suburban

- 2tph Corby – Kettering – Wellingborough – Bedford – Flitwick – Harlington – Legrave – Luton – Luton Airport – West Hampstead Thameslink – St. Pancras Thameslink – Farringdon Thameslink – City Thameslink – Blackfriars – London Bridge Thameslink – East Croydon – Gatwick Airport – Three Bridges – Balcombe – Haywards Heath – Wivelsfield – Burgess Hill – Hassocks – Preston Park – Brighton
- 2tph Bedford – Flitwick – Harlington – Legrave – Luton – Luton Airport – West Hampstead Thameslink – St. Pancras Thameslink – Farringdon Thameslink – City Thameslink – Blackfriars – London Bridge Thameslink – East Croydon – Gatwick Airport – Three Bridges – Balcombe – Haywards Heath – Wivelsfield – Burgess Hill – Hassocks – Preston Park – Brighton
[Alternates with the service from Corby. The RM service from York to St. Pancras via Nottingham and Melton Mowbray connects into this service at Bedford, thus providing a 4tph service from Corby.]
- 4tph Northampton Castle – Northampton Bridge St. – Olney – Bedford – Flitwick – Harlington – Legrave – Luton – Luton Airport – Harpenden – St. Albans – West Hampstead Thameslink – St. Pancras Thameslink – Farringdon Thameslink – City Thameslink – Blackfriars – London Bridge Thameslink – East Croydon – Gatwick Airport – Three Bridges – Crawley – Ifield – Faygate – Littlehaven – Horsham
[Alternates with the Brighton services. The extra stops at Harpenden and St. Albans are in order to arrange for a slightly later arrival at St. Pancras, to assist in organising a regular-interval sequence of destinations through the core, while maintaining a regular-interval departure sequence from stations between Bedford and Luton Airport; this isn’t a problem northbound.]
- 4tph Luton – Luton Airport Parkway – Harpenden – St. Albans – Radlett – Elstree & Borehamwood – Mill Hill Broadway – Hendon – Cricklewood – West Hampstead Thameslink – Kentish Town – St. Pancras Thameslink – Farringdon Thameslink – City Thameslink – Blackfriars – London Bridge Thameslink – East Croydon – South Croydon – Purley Oaks –

Purley – Coulsdon South – Merstham – Redhill – Earlswood – Salfords – Horley – Gatwick Airport

- 4tph Cambridge – Foxton – Shepreth – Meldreth – Royston – Ashwell & Morden – Baldock – Letchworth Garden City – Hitchin – Stevenage – Finsbury Park – St. Pancras Thameslink – Farringdon Thameslink – City Thameslink – Blackfriars – London Bridge Thameslink – East Croydon – Gatwick Airport – Three Bridges – Balcombe – Haywards Heath – Wivelsfield – Burgess Hill – Hassocks – Preston Park – Brighton
- 4tph Cambridge – Foxton – Shepreth – Meldreth – Royston – Ashwell & Morden – Baldock – Letchworth Garden City – Hitchin – Stevenage – Welwyn Garden City – Hatfield – Finsbury Park – St. Pancras Thameslink – Farringdon Thameslink – City Thameslink – Blackfriars – London Bridge Thameslink – East Croydon – Gatwick Airport – Three Bridges – Crawley – Ifield – Faygate – Littlehaven – Horsham
[Alternates with the Brighton services. The extra stops at Welwyn Garden City and Hatfield are in order to arrange for a slightly later arrival at St. Pancras, to assist in organising a regular-interval sequence of destinations through the core, while maintaining a regular-interval departure sequence from stations between Cambridge and Stevenage; this isn't a problem northbound.]
- 4tph Stevenage – Knebworth – Welwyn North – Welwyn Garden City – Hatfield – Finsbury Park – St. Pancras Thameslink – Farringdon Thameslink – City Thameslink – Blackfriars – London Bridge Thameslink – East Croydon – South Croydon – Purley Oaks – Purley – Coulsdon South – Merstham – Redhill – Reigate
- 2tph Peterborough – Huntingdon – St. Neots – Sandy – Biggleswade – Arlesey – Hitchin – Stevenage – Finsbury Park – St. Pancras Thameslink – Farringdon Thameslink – City Thameslink – Blackfriars – London Bridge Thameslink – East Croydon – Oxted – Hurst Green – Lingfield – Dormans – East Grinstead
- 2tph Peterborough – Huntingdon – St. Neots – Sandy – Biggleswade – Arlesey – Hitchin – Stevenage – Finsbury Park – St. Pancras Thameslink – Farringdon Thameslink – City Thameslink – Blackfriars – London Bridge Thameslink – East Croydon – Oxted – Hurst Green – Edenbridge – Penshurst – Leigh – Tonbridge – High Brooms – Tunbridge Wells – Tunbridge Wells West
- 4tph Peterborough – Huntingdon – St. Neots – Sandy – Biggleswade – Arlesey – Hitchin – Stevenage – Finsbury Park – St. Pancras Thameslink – Farringdon Thameslink – City Thameslink – Blackfriars – London Bridge Thameslink – East Croydon – Oxted – Hurst Green – Edenbridge Town – Hever – Cowden – Ashurst – Eridge – Crowborough – Buxted – Uckfield – Isfield – Barcombe Mills – Lewes – Falmer – Moulescoomb – London Rd. – Brighton

The following Regional Metro services are also relevant:

- 4tph Nottingham – Beeston – Attenborough – East Midlands Parkway – Loughborough – Leicester – Market Harborough – Kettering – Wellingborough – Bedford – Luton – Luton Airport Parkway – St. Albans – St. Pancras West
- 2tph York – Pontefract Baghill – Rotherham – South Yorkshire (Meadowhall) – Sheffield Midland – Chesterfield – Alfreton & Mansfield Parkway – Langley Mill – Nottingham – Melton Mowbray – Oakham – Corby – Kettering – Wellingborough – Bedford – Luton – Luton Airport Parkway – St. Albans – St. Pancras West
- 2tph Worcester Shrub Hill – Droitwich Spa – Bromsgrove – University – Birmingham New St. – Birmingham International – Coventry – Rugby – Northampton Castle – Northampton Bridge St. Olney – Bedford – Luton – Luton Airport Parkway – St. Albans – St. Pancras West

Hourly Interchange Sequence Pattern at Bedford with platform no. in parentheses (note that the down fast is platform 4):

- 00 York → Corby – St. Pancras West (3)
Bedford – Brighton (1)
- 07 Nottingham → Bedford – St Pancras West (3)
Northampton – Horsham (1)
- 15 Worcester → Northampton – St. Pancras West (3)
Corby – Brighton (1)
- 23 Nottingham → Bedford – St Pancras West (3)
Northampton – Horsham (1)

– repeating at 30, 37, 45 and 53 minutes past. As will be appreciated, including the Nottingham – St. Pancras service gives Kettering and Wellingborough a total of 8tph to London.

Hourly Interchange Sequence Pattern at Luton with platform no. in parentheses (note that the down fast is platform 5, platform 2 is a through line but used for reversing the services terminating at Luton, and platform 1 is the up slow; 1 and 2 offer cross-platform interchange):

- 00 Bedford – Brighton (1)
Luton – Gatwick Airport (2)
- 07 Northampton – Horsham (1)
(no connection)
- 15 Corby – Brighton (1)
Luton – Gatwick Airport (2)
- 23 Northampton – Horsham (1)
(no connection)

– repeating at 30, 37, 45 and 53 minutes past.

Hourly Cross-Platform Interchange Pattern at Stevenage:

- 00 Cambridge – Brighton
Stevenage – Reigate
- 04 Peterborough – Brighton via Oxted
(no connection)
- 07 Cambridge – Horsham
(no connection)
- 12 Peterborough – East Grinstead
(no connection)
- 15 Cambridge – Brighton
Stevenage – Reigate

- 19 Peterborough – Brighton via Oxted
(no connection)
- 23 Cambridge – Horsham
(no connection)
- 27 Peterborough – Tunbridge Wells
(no connection)

– repeating at 30, 34, 40, 42, 45, 49, 55 and 57 minutes past.

The pattern of services through the core, in fact from St. Pancras to East Croydon, is:

- 00 Bedford – Brighton
- 02 Cambridge – Horsham
- 04 Peterborough – East Grinstead
- 05 Stevenage – Reigate
- 07 Cambridge – Brighton
- 09 Northampton – Horsham
- 11 Peterborough – Brighton via Oxted
- 13 Luton – Gatwick Airport
- 15 Corby – Brighton
- 17 Cambridge – Horsham
- 19 Peterborough – Tunbridge Wells
- 20 Stevenage – Reigate
- 22 Cambridge – Brighton
- 24 Northampton – Horsham
- 26 Peterborough – Brighton via Oxted
- 28 Luton – Gatwick Airport

– repeating at 30 minutes past. As is readily seen, all destinations have regular-interval departures from St. Pancras (and all other stations in this section). Refer to appendix A for the precise derivation of these timings.

Note that both Brighton and Horsham have services of 8tph (via the Brighton Line), 4tph from Bedford (and, usually, from points north thereof) and 4tph from Cambridge, and that the Brighton and Horsham services alternate from Bedford, likewise from Cambridge. Hence the extra 2 stops added to the Horsham services north of St. Pancras, to ensure that the service from Bedford to Horsham arrives at St. Pancras 2 minutes after the service from Cambridge to Brighton, and that the service from Cambridge to Horsham arrives at St. Pancras 2 minutes after the service from Bedford to Brighton. If they had the same stopping pattern, they would get in each other's way at St. Pancras. By this means we have a regular interval service between Bedford and Luton, and between Cambridge and Stevenage. This isn't a problem northbound, since departures from Brighton and Horsham are regular interval, timed such that Horsham trains arrive at Three Bridges 2 minutes after Brighton ones, irrespective of destination. Of course, this means that the pattern of **arrivals** of the 8tph at Bedford and Cambridge, 4tph from each of Brighton and Horsham, is not quite regular-interval. But who cares? Regular interval **departures** are important, regular interval arrivals aren't.

The Service Plan – Metro

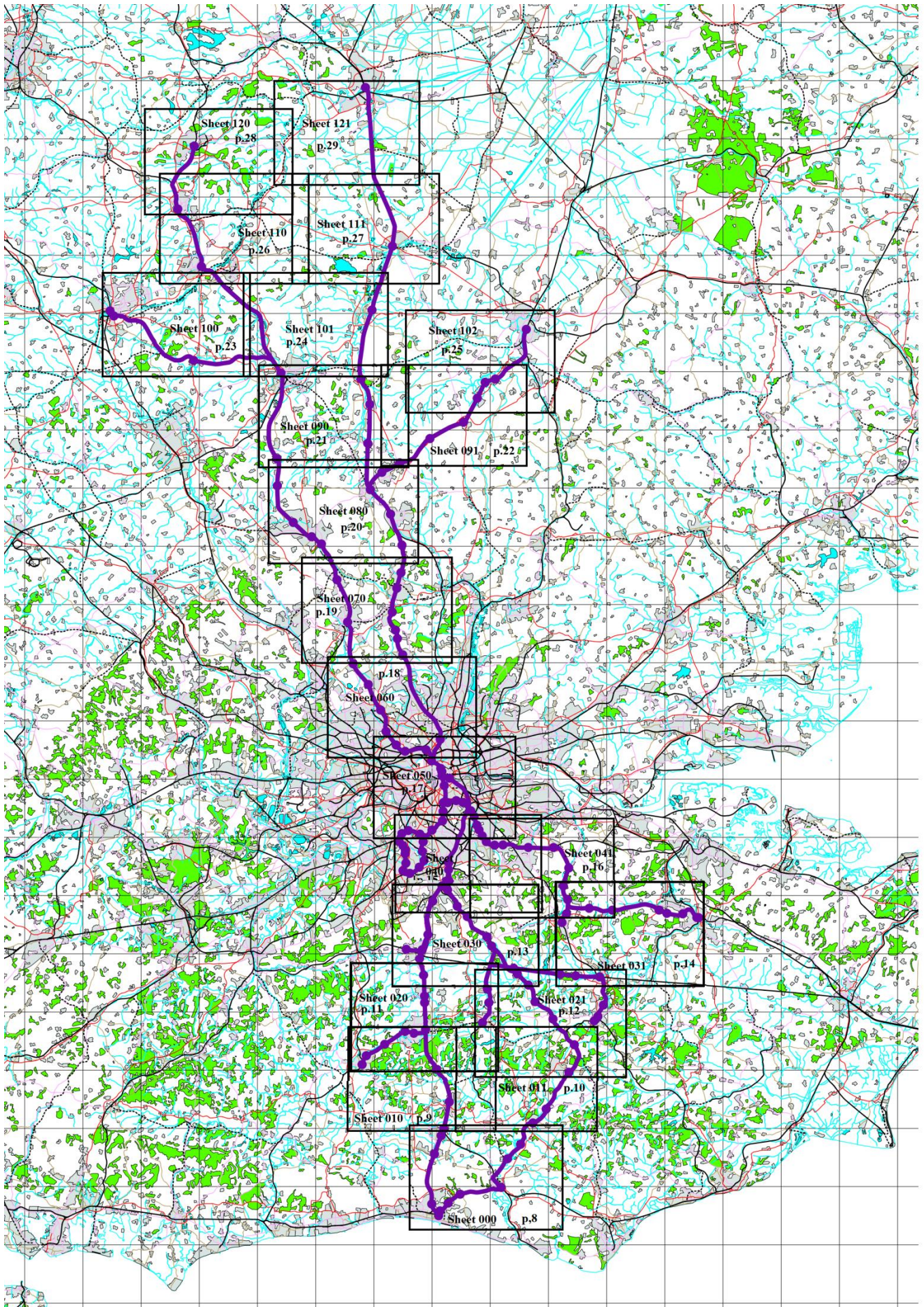
The metro service plan is trivial in comparison with the above complexity.

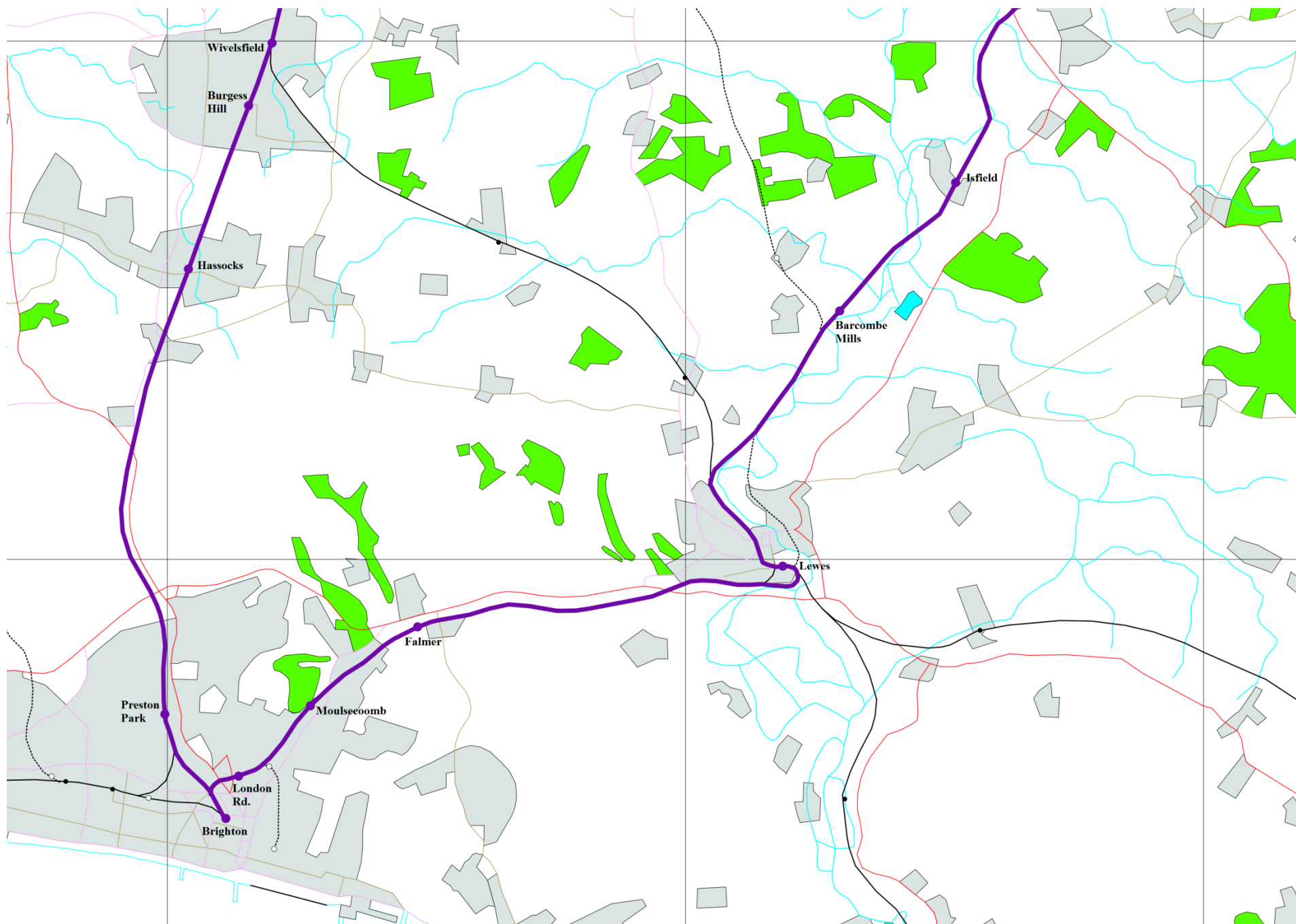
- 4tph Blackfriars – Elephant & Castle – Loughborough Junction – Herne Hill – Tulse Hill – Streatham – Mitcham Eastfields – Mitcham Junction – Hackbridge – Carshalton – Sutton – West Sutton – St. Helier – Morden South – South Merton – Wimbledon Close – Wimbledon – Haydons Rd. – Tooting – Streatham – Tulse Hill – Herne Hill – Loughborough Junction – Elephant & Castle – Blackfriars (Sutton / Wimbledon Circle, clockwise)
- 4tph Blackfriars – Elephant & Castle – Loughborough Junction – Herne Hill – Tulse Hill – Streatham – Tooting – Haydons Rd. – Wimbledon – Wimbledon Chase – South Merton – Morden South – St. Helier – West Sutton – Sutton – Carshalton – Hackbridge – Mitcham Junction – Mitcham Eastfields – Streatham – Tulse Hill – Herne Hill – Loughborough Junction – Elephant & Castle – Blackfriars (Sutton / Wimbledon Circle, counter-clockwise)
- 4tph Blackfriars – Elephant & Castle – Loughborough Junction – Denmark Hill – Peckham Rye – Nunhead – Crofton Park – Catford – Bellingham – Beckenham Hill – Ravensbourne – Shortlands – Bromley South – Bickley – St. Mary Cray – Swanley – Eynsham – Shoreham – Otford – Bat & Ball – Sevenoaks
- 4tph Blackfriars – Elephant & Castle – Loughborough Junction – Denmark Hill – Peckham Rye – Nunhead – Crofton Park – Catford – Bellingham – Beckenham Hill – Ravensbourne – Shortlands – Bromley South – Bickley – St. Mary Cray – Swanley – Eynsham – Shoreham – Otford – Kemsing – Borough Green & Wrotham – West Malling – East Malling – Barming – Maidstone Barracks / HS1 – Maidstone East

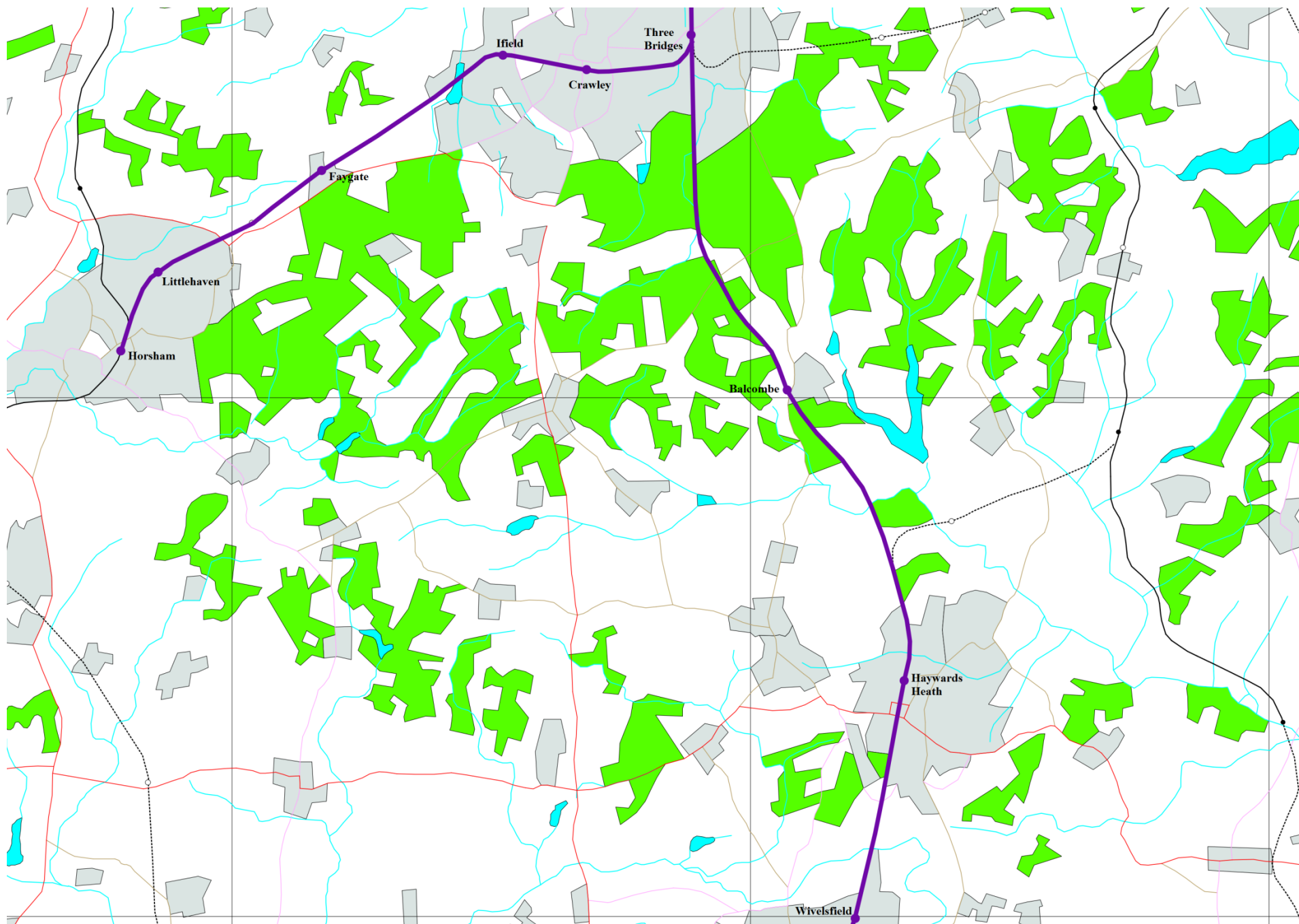
I've included Loughborough Junction on both routes on the grounds that if it's important enough for one, it's important enough for both, hence the currently-disused eastbound platforms are restored. Maidstone Barracks / HS1 is a new station (as far as this route is concerned), where the HS1 Maidstone branch terminates at the site of the existing Barracks station on the Strood – Paddock Wood line. The Maidstone East line crosses over nearby, and high level platforms have often been suggested, but never built. Full details are given in the article 'HS1 Route and Service Plans'.

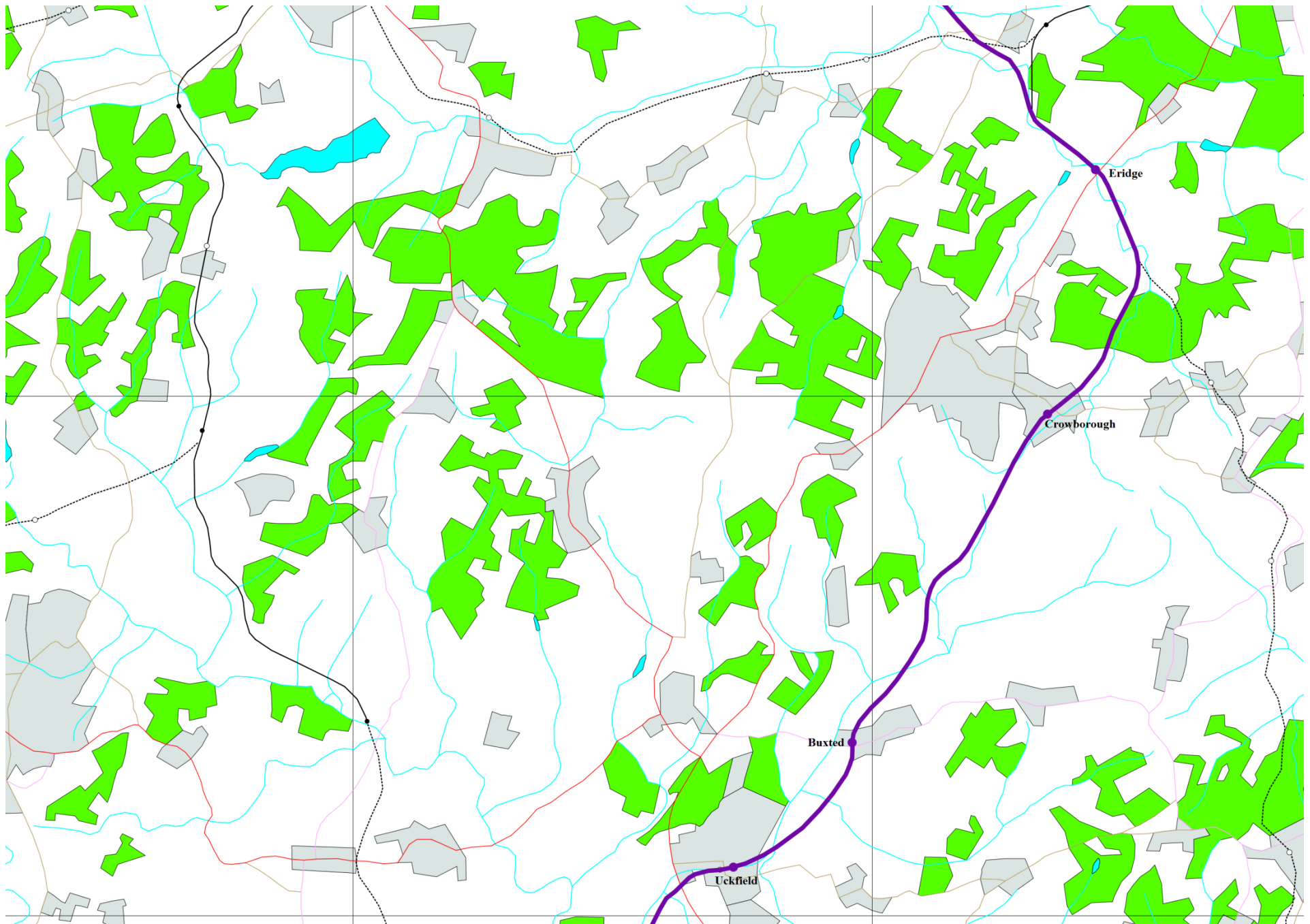
No formal interchange arrangements are specified, though interchange is readily available at several locations, but metro frequencies are sufficiently high that formal arrangements are unnecessary. I would just point out that the section between Denmark Hill and Peckham Rye (the same pair of tracks), and on to Nunhead, is shared with Crossrail 5's service of 4tph from Victoria to Dartford via Woolwich. Full details are given in the article 'Overground into Crossrail'.

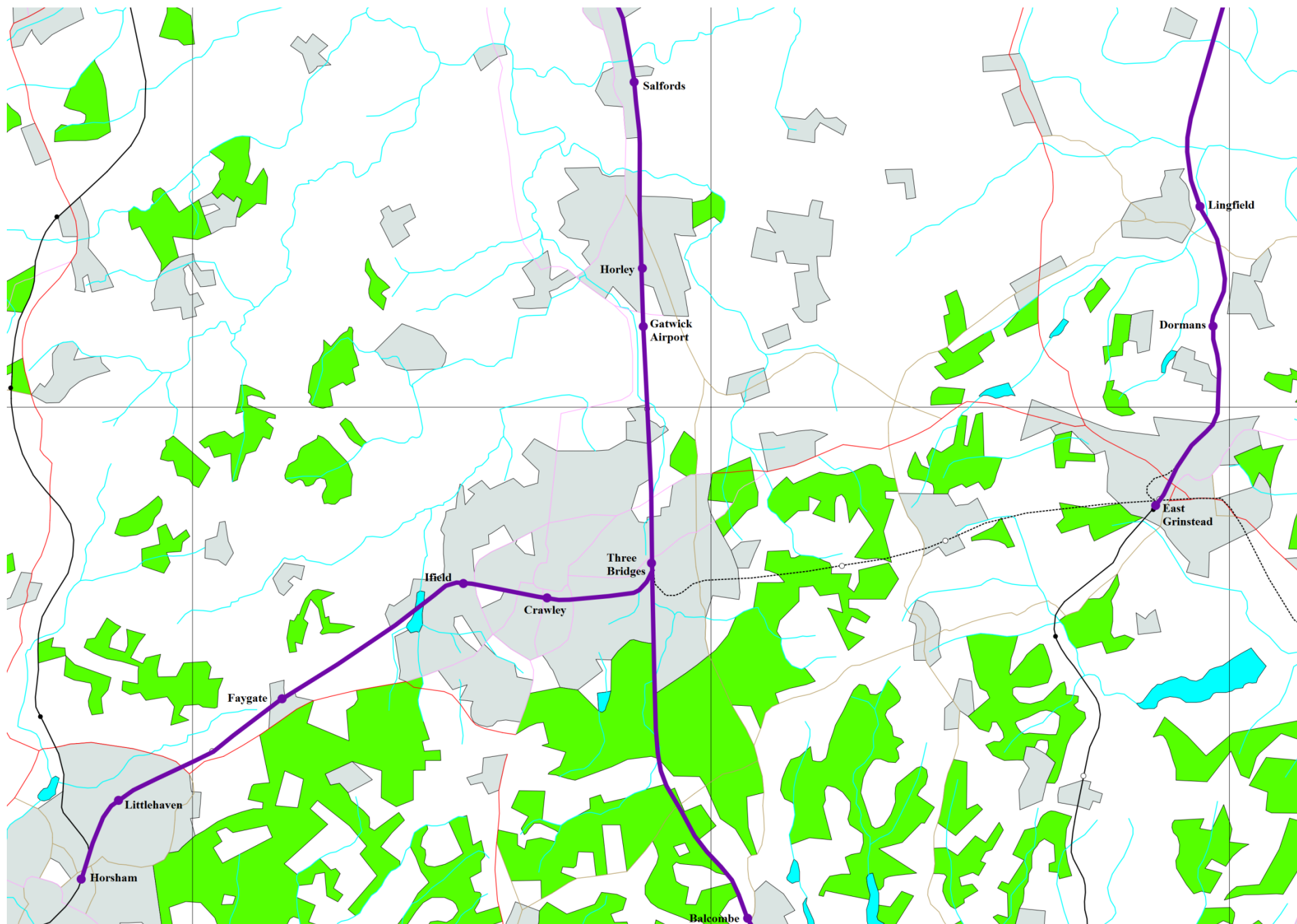
There now follows the Thameslink Key map, followed by the individual maps. (The custom colour for Thameslink services is Deep Purple, R/G/B values 111/8/167.)

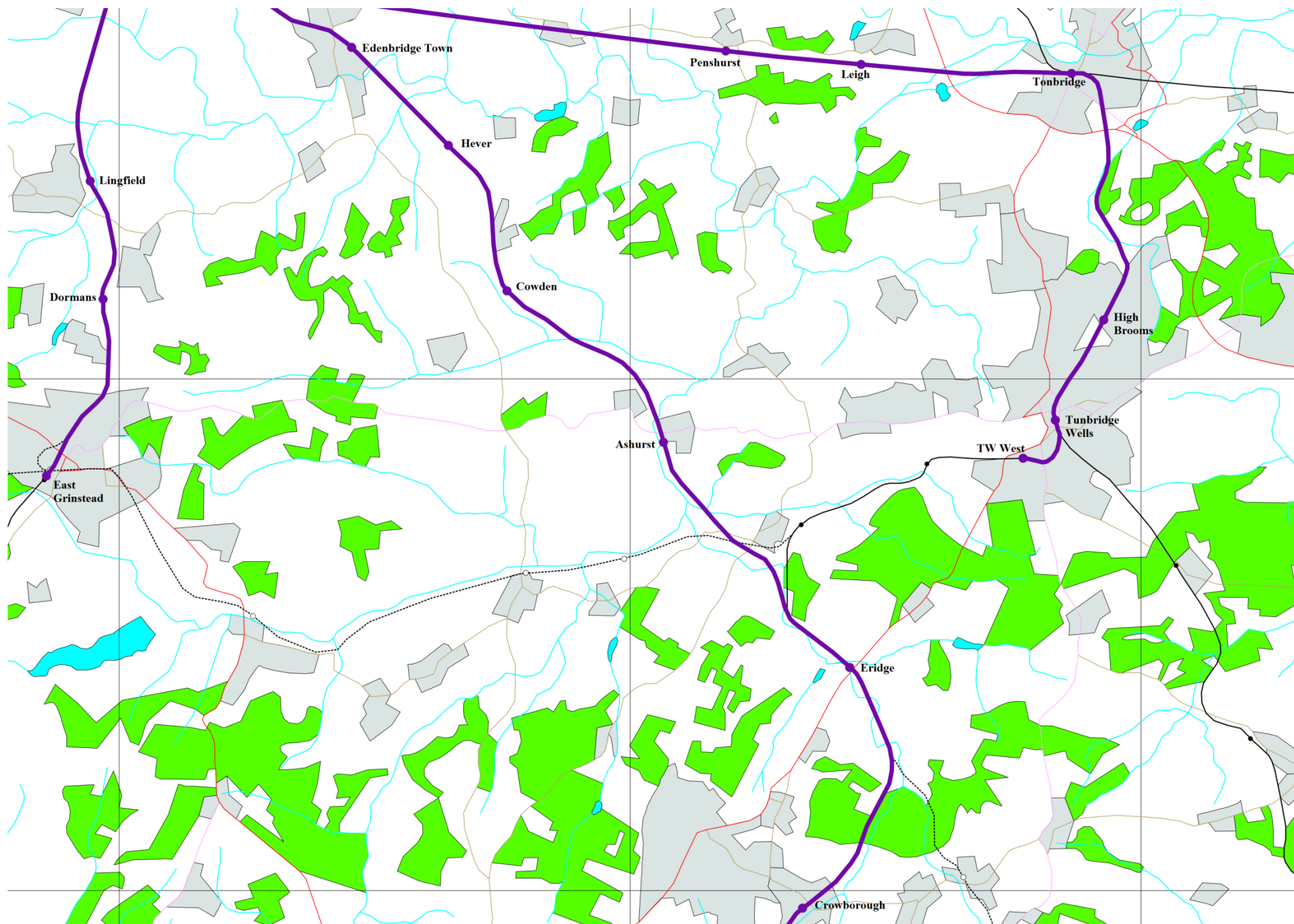


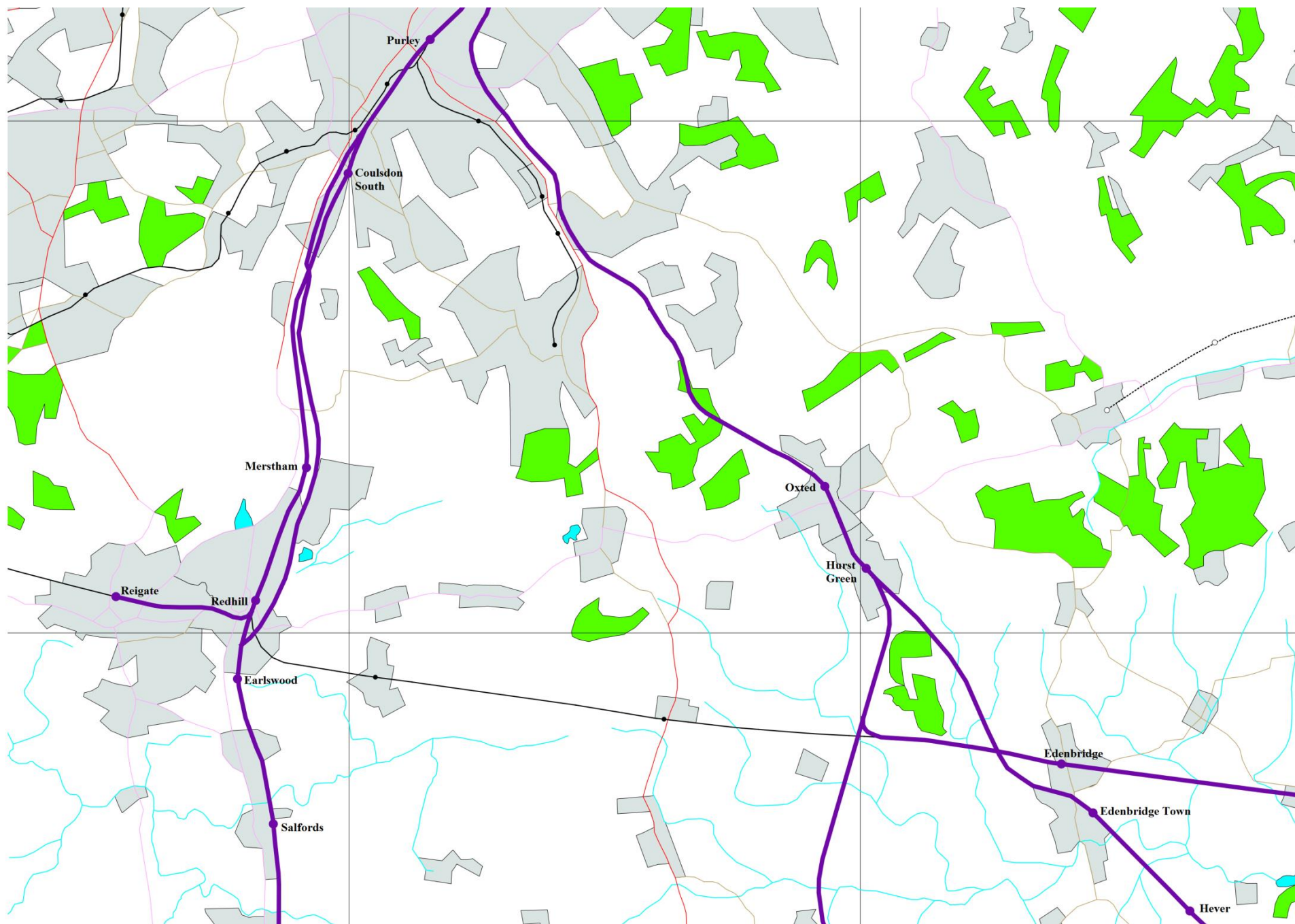


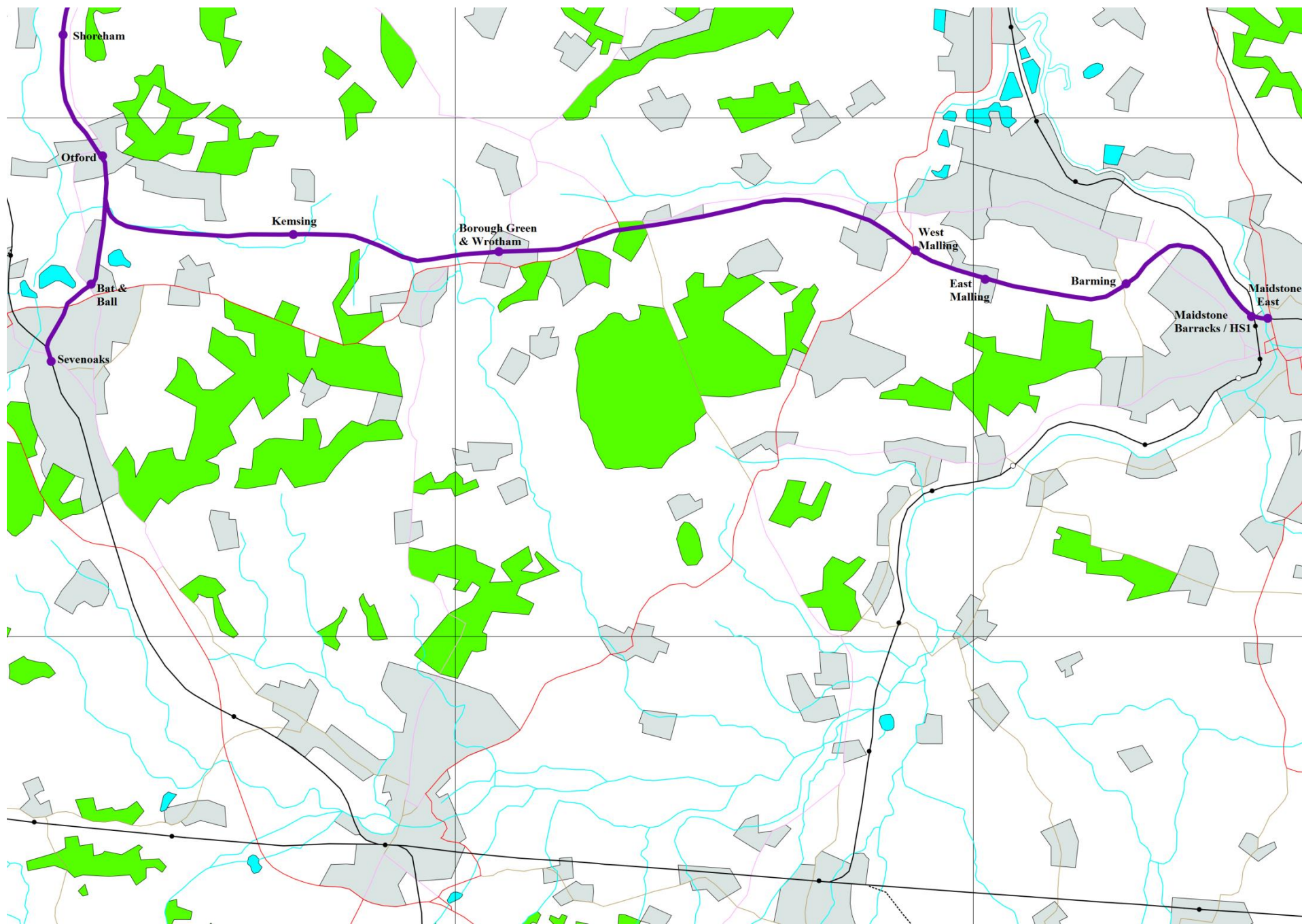


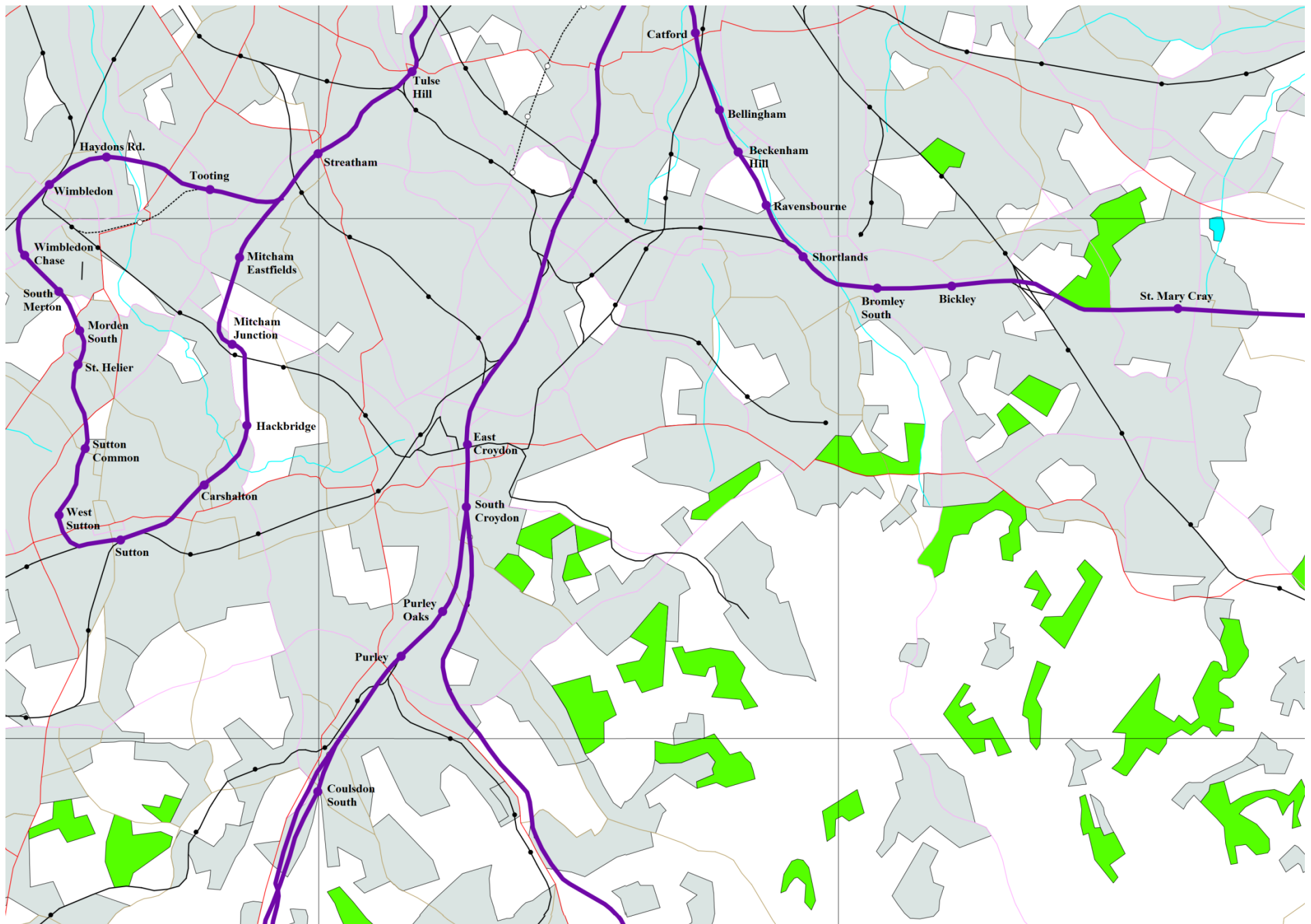


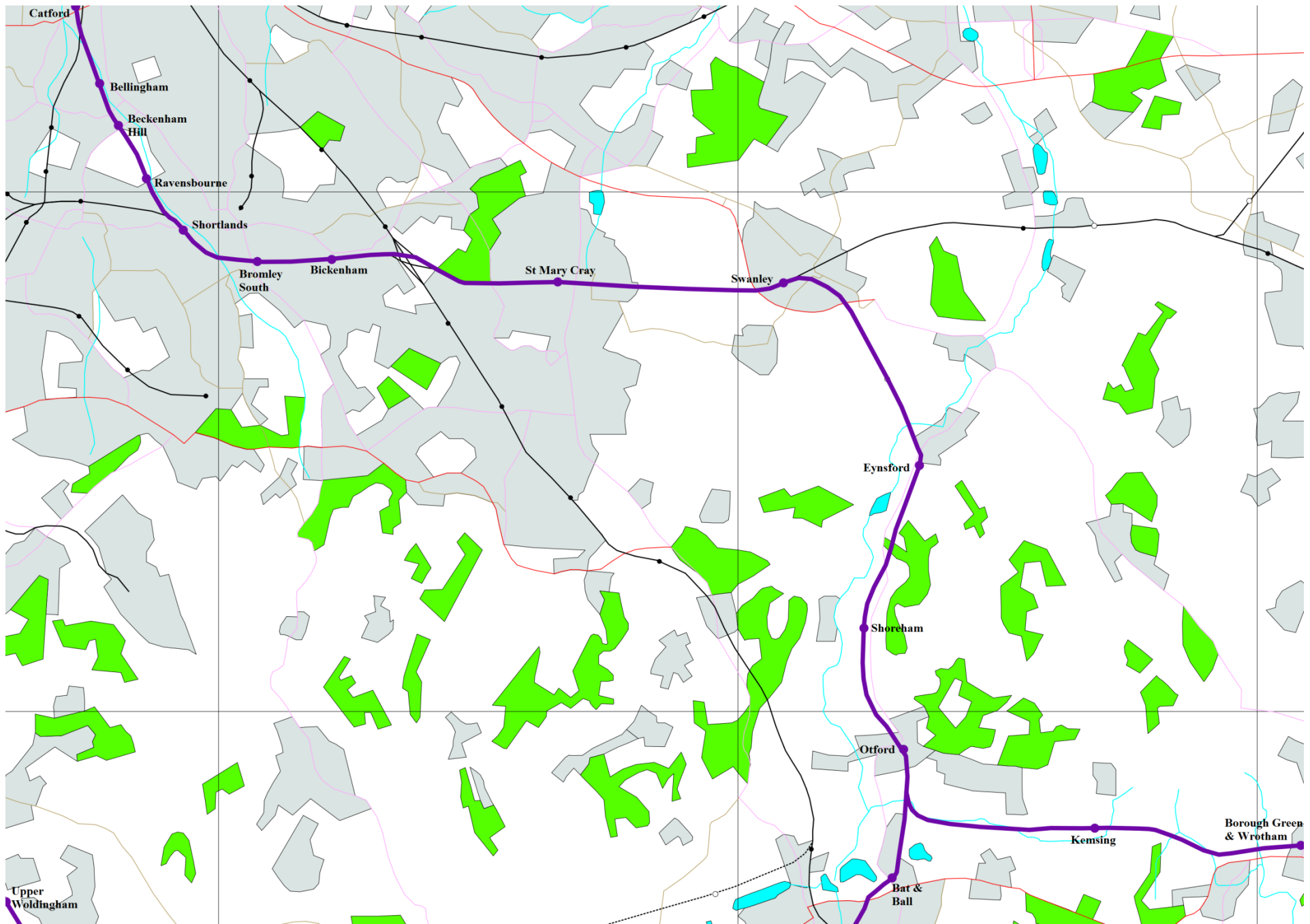


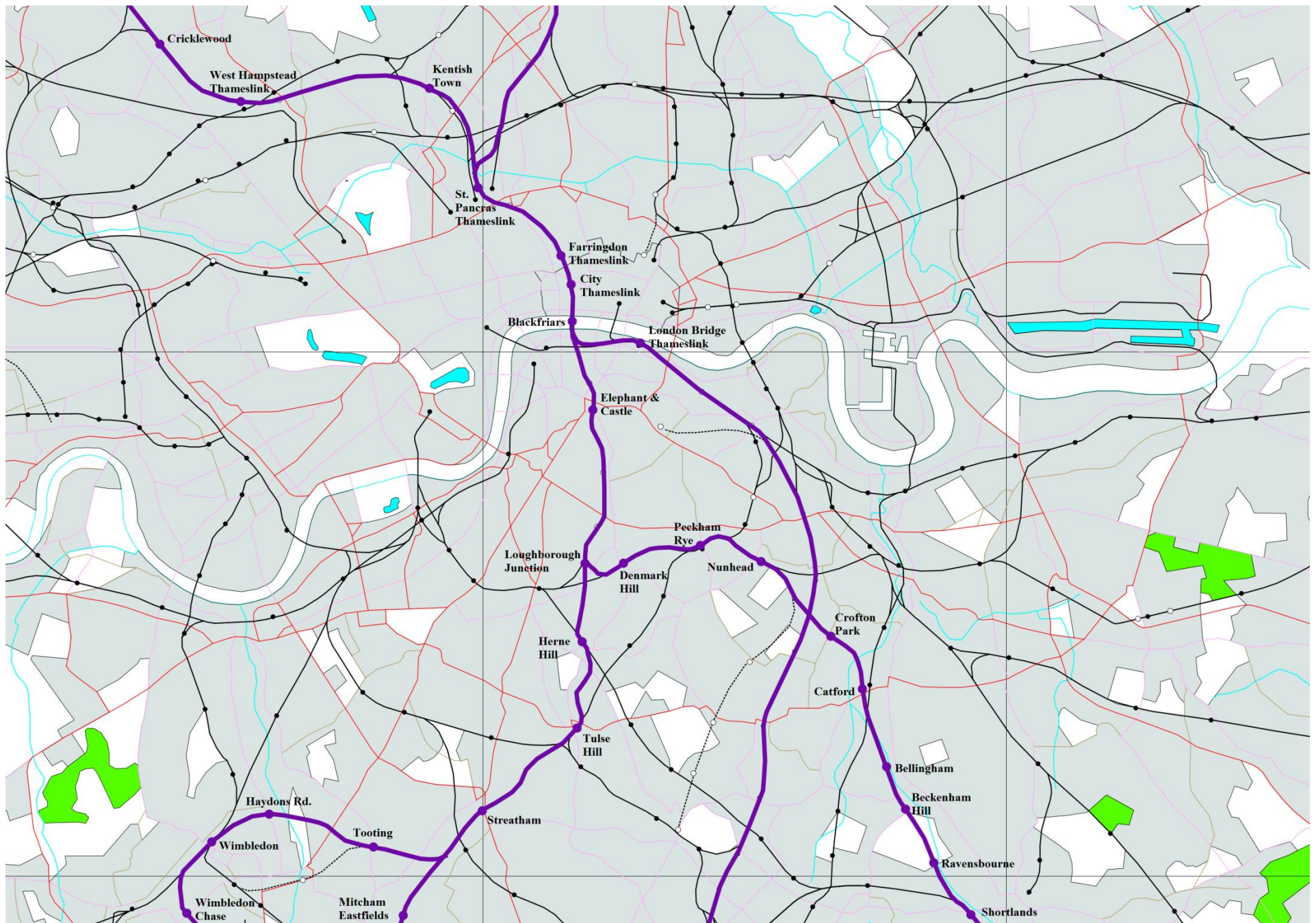


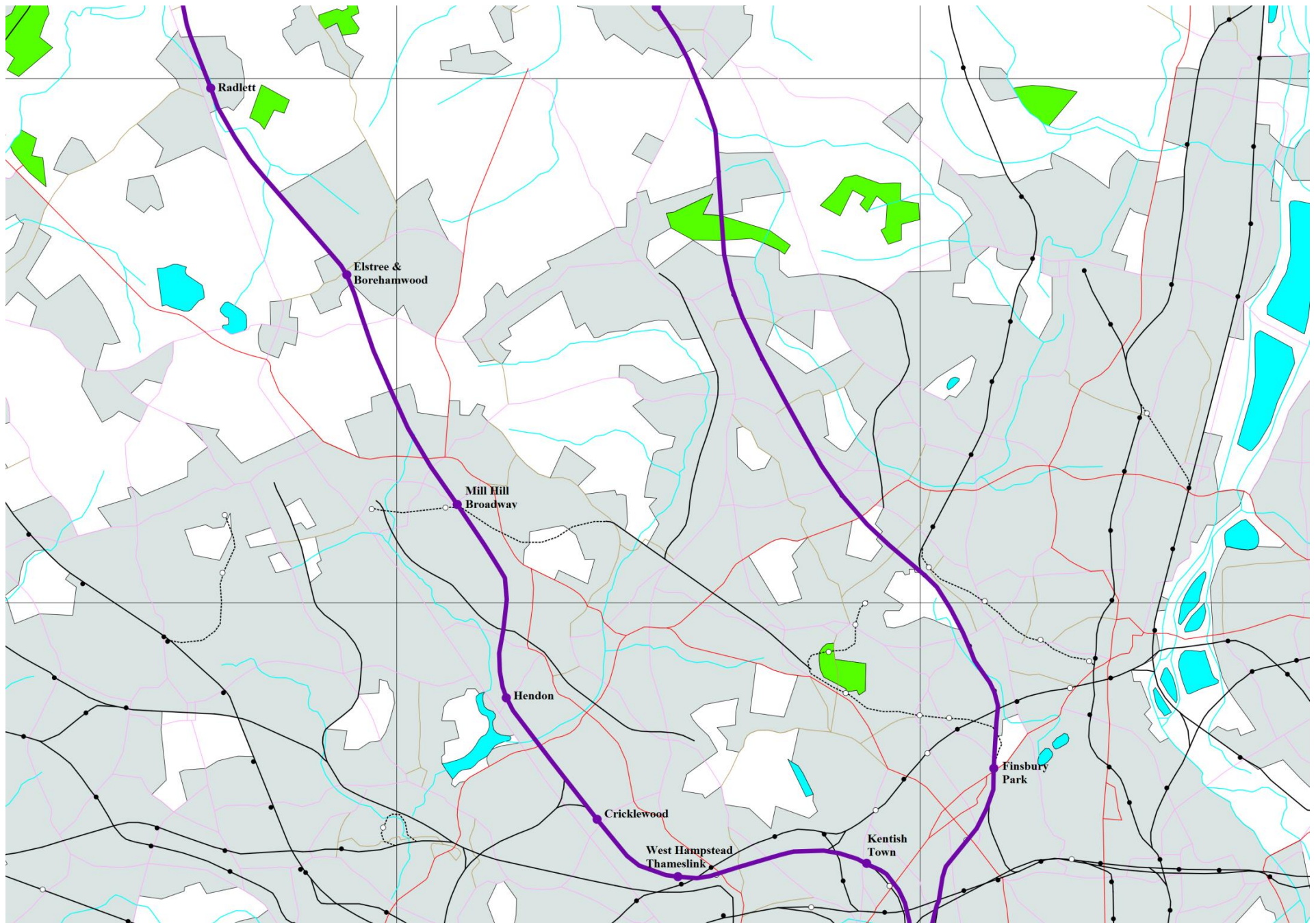


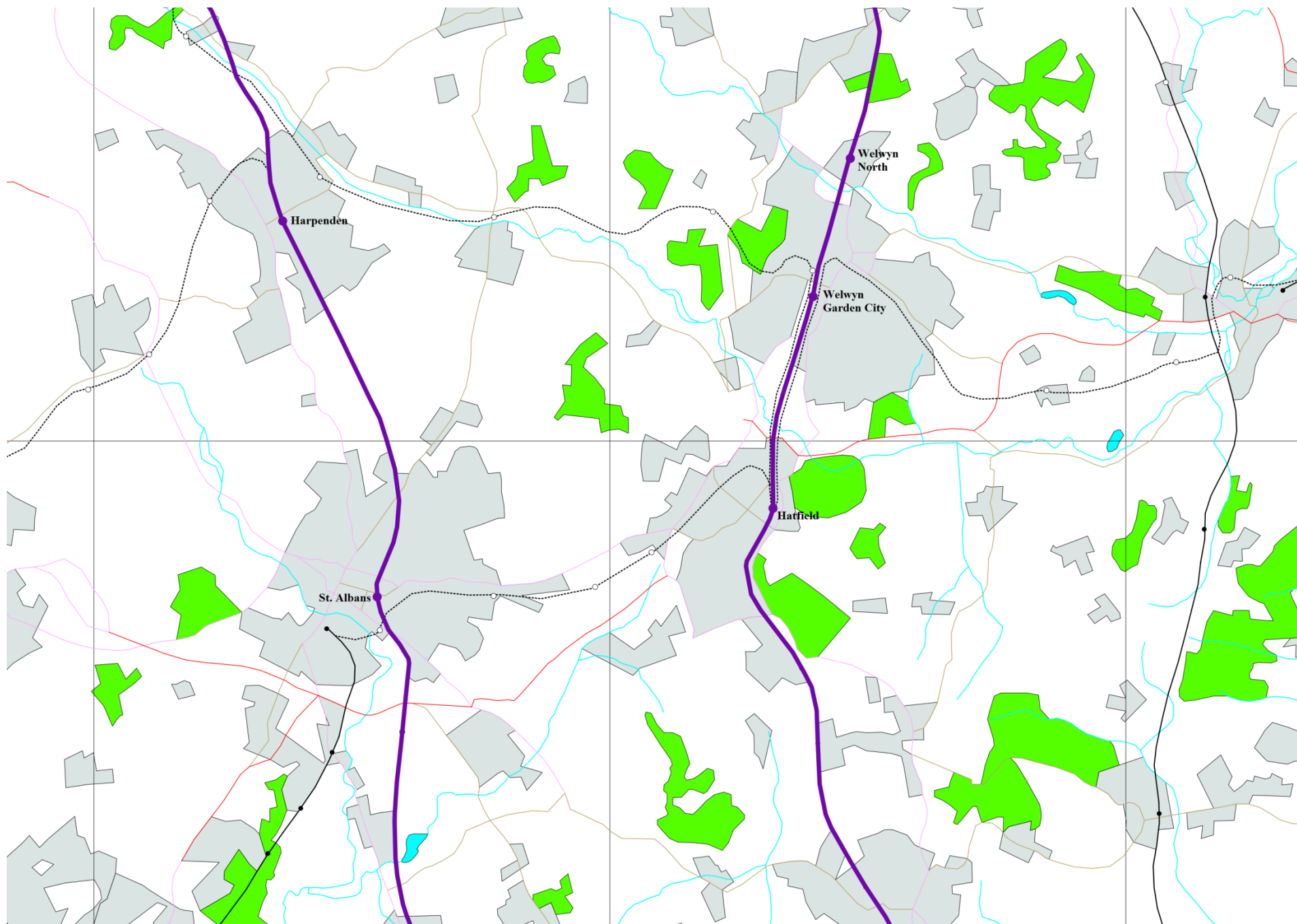


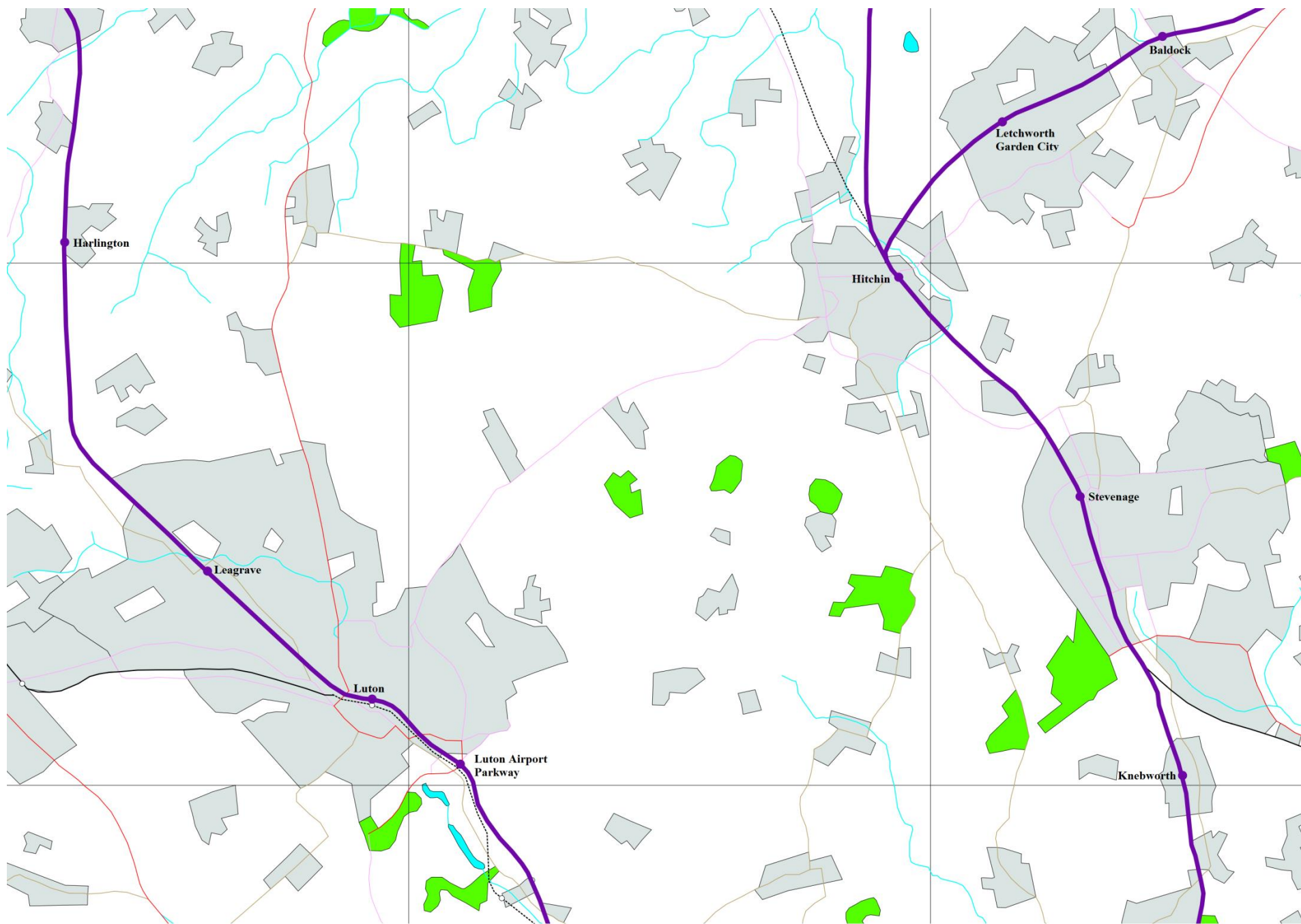


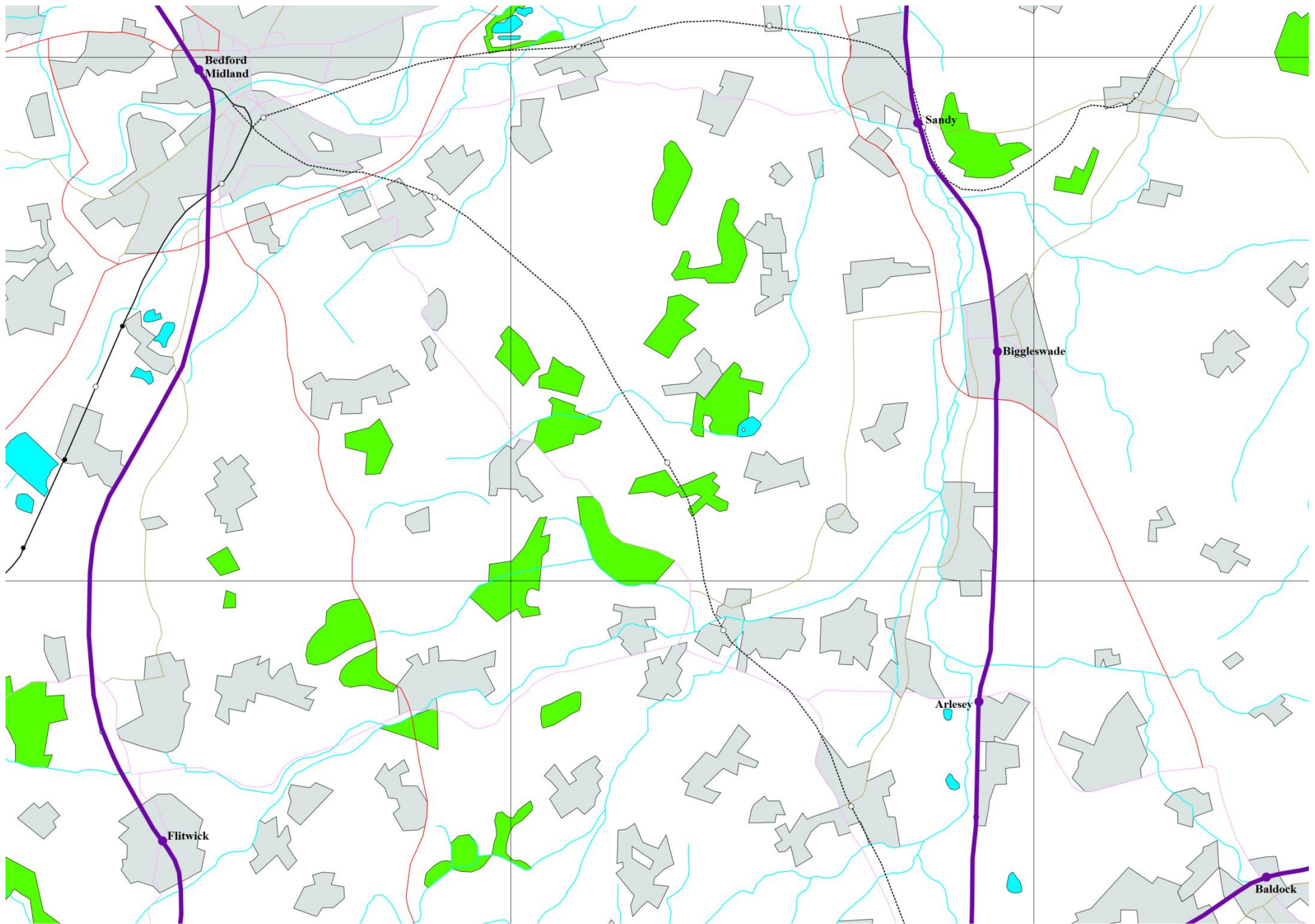


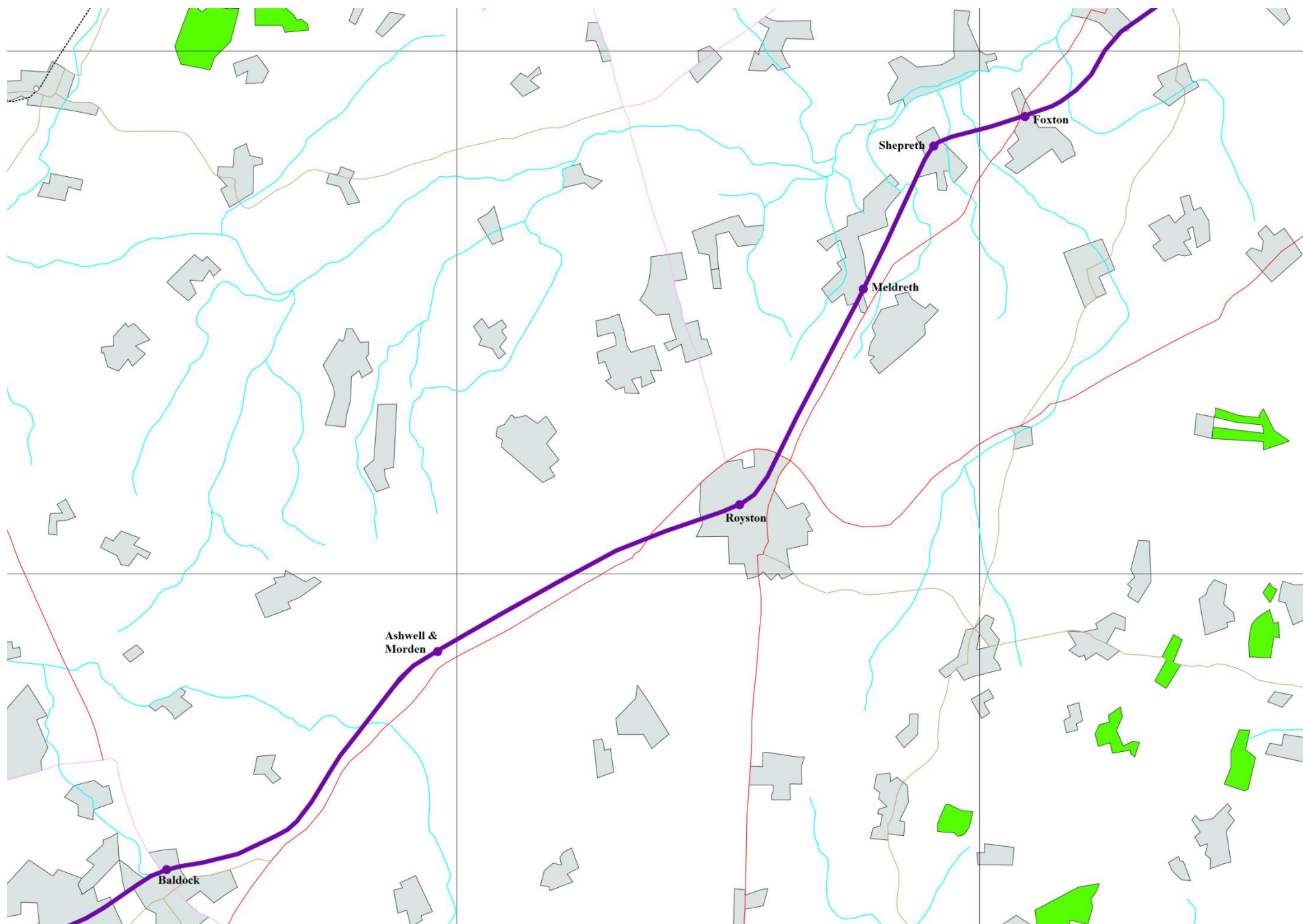


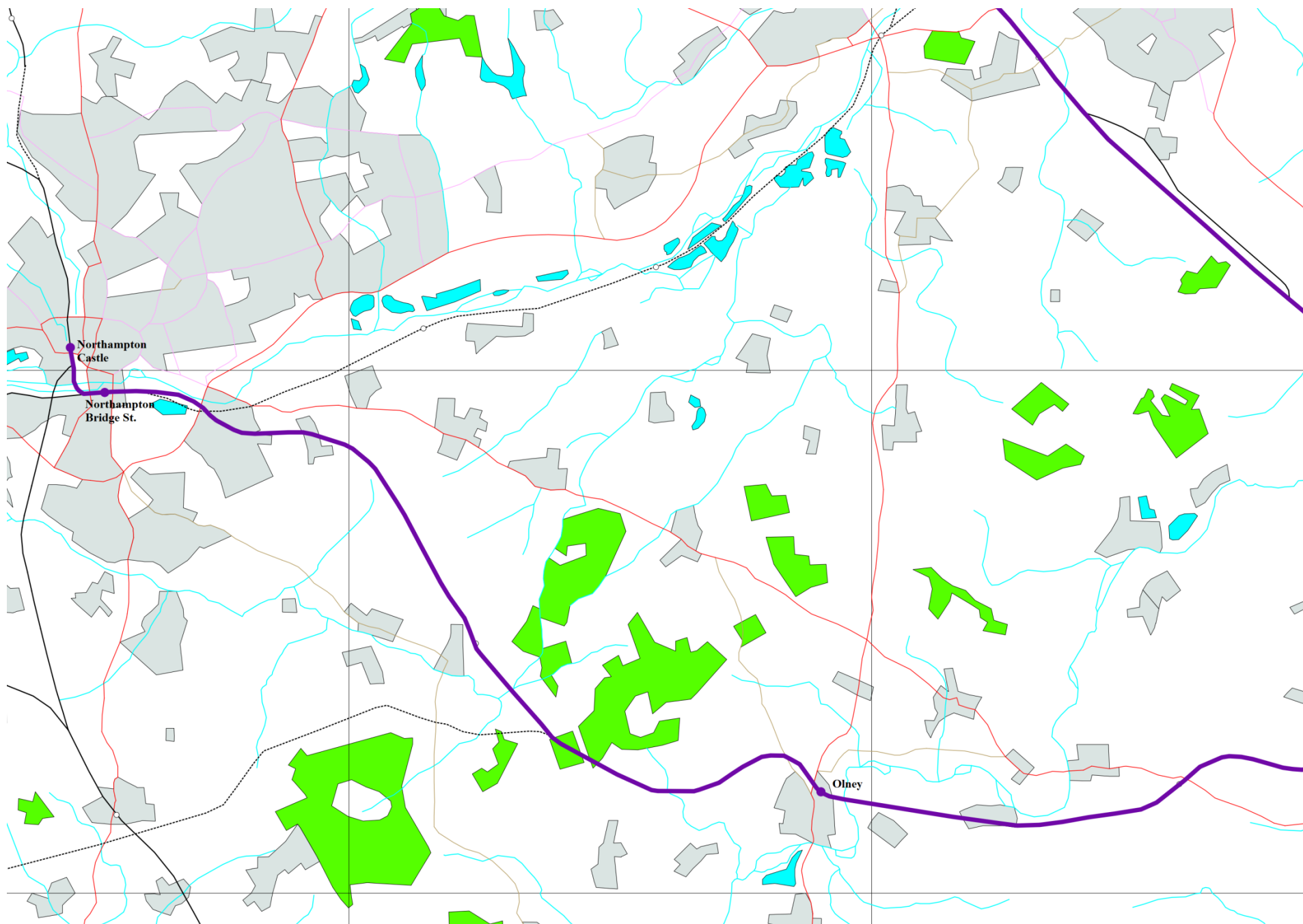


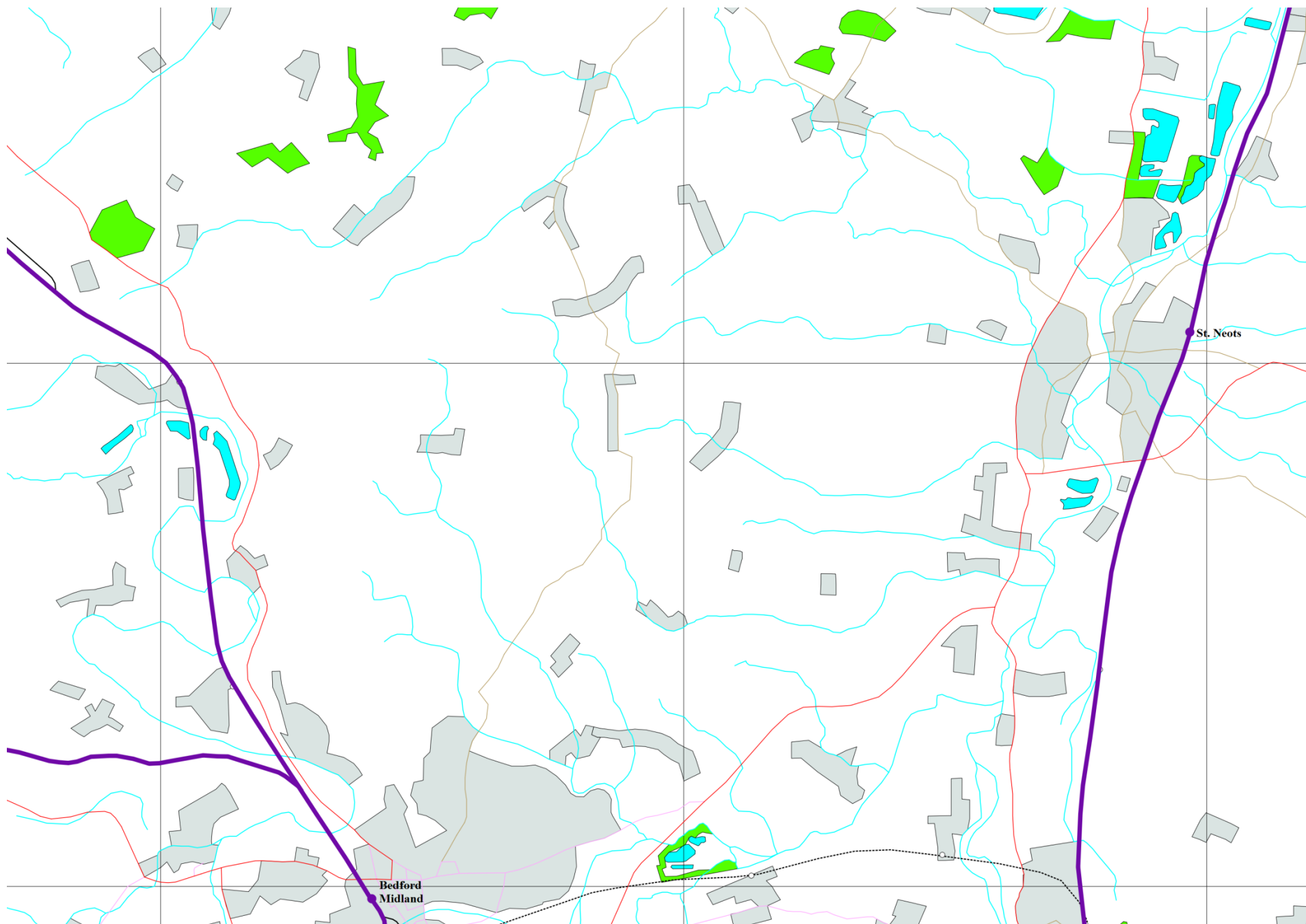


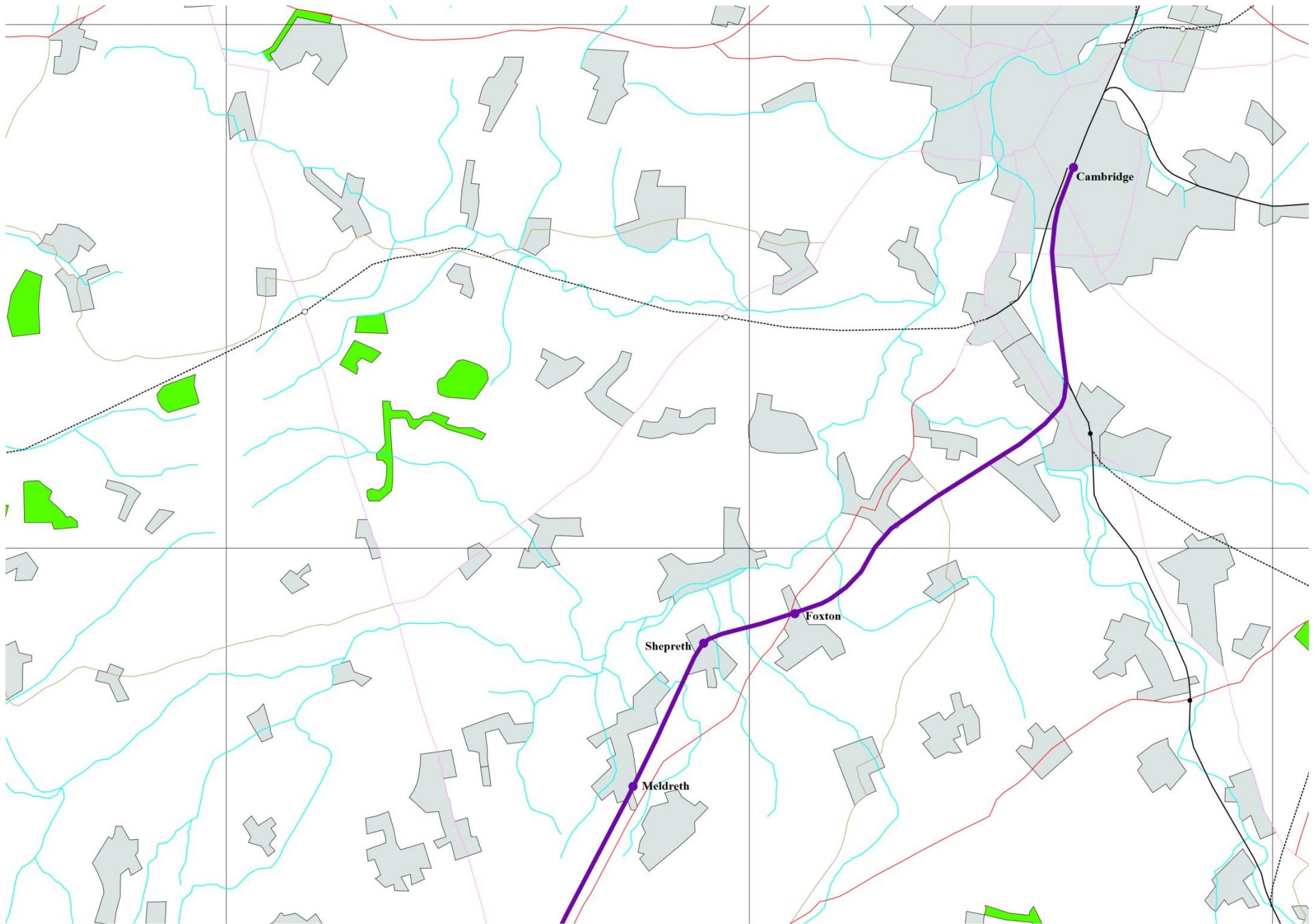


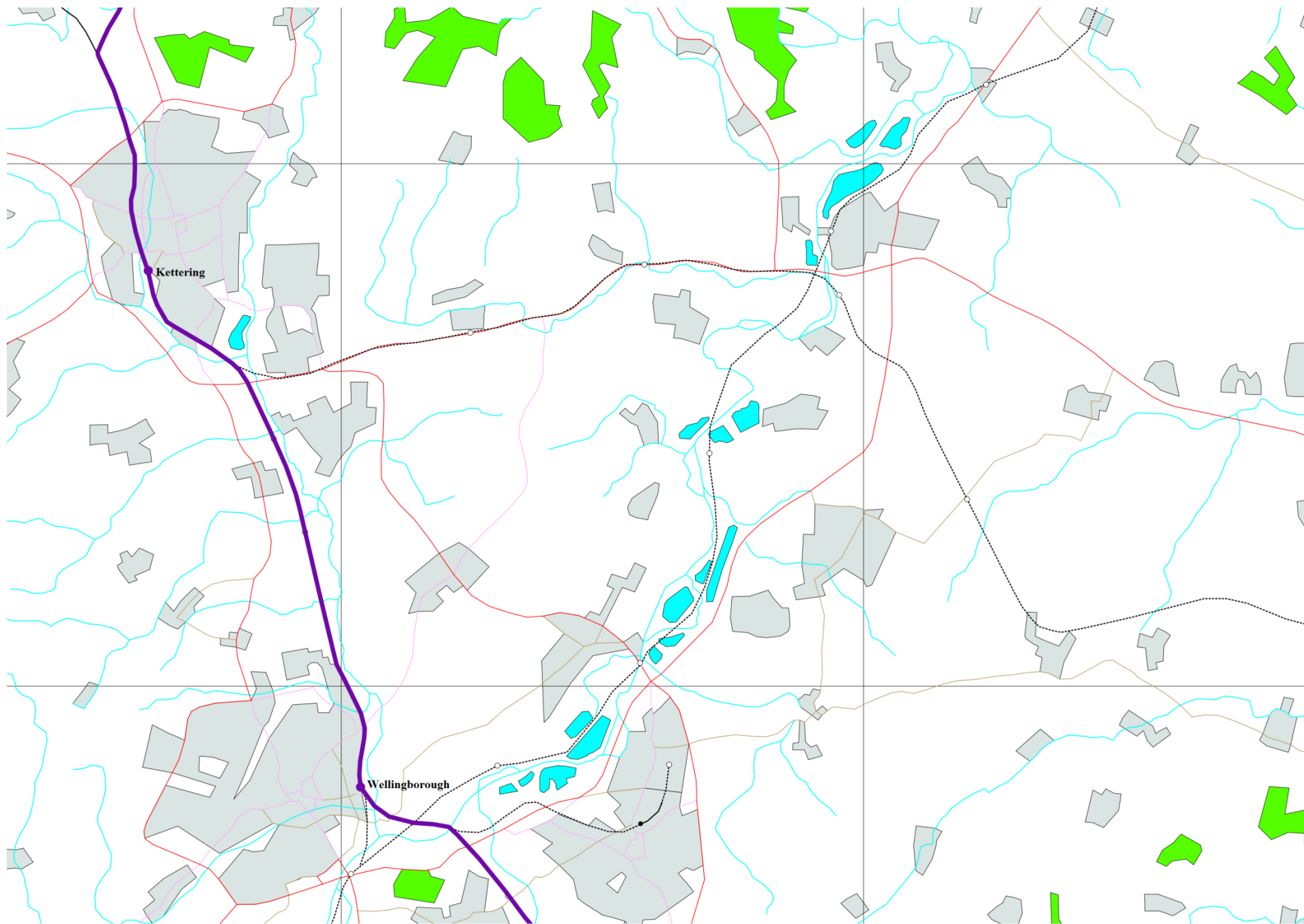


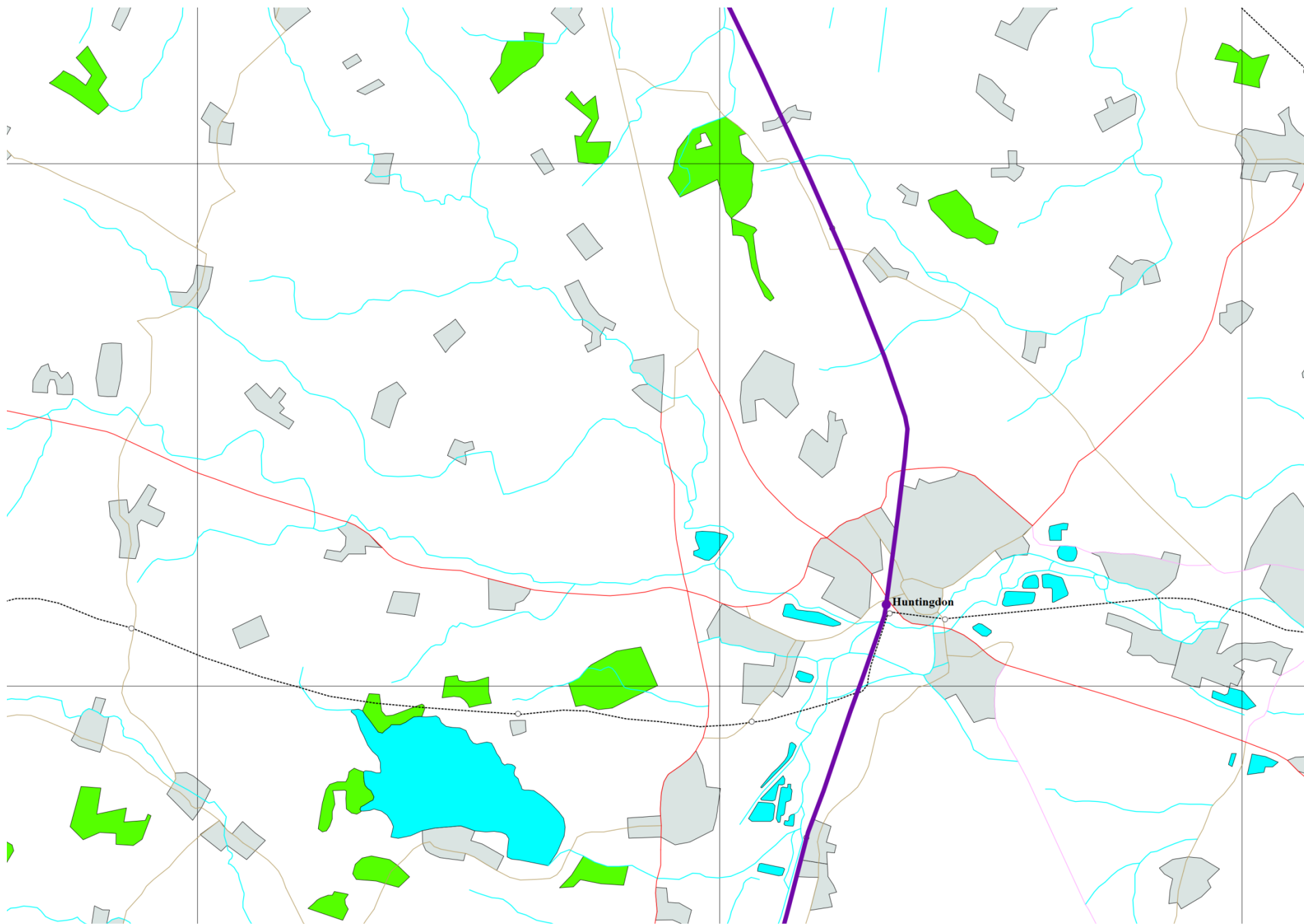


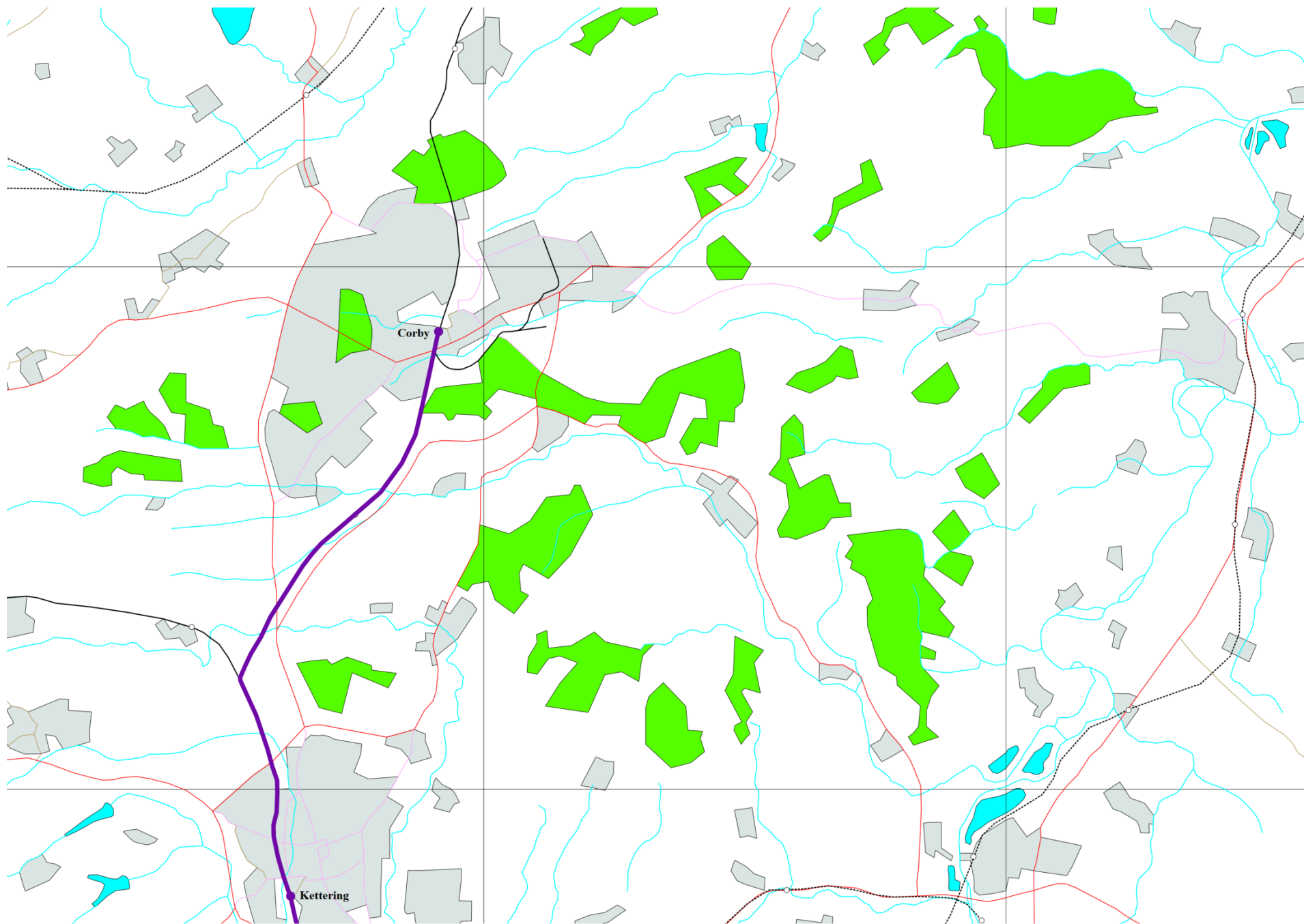


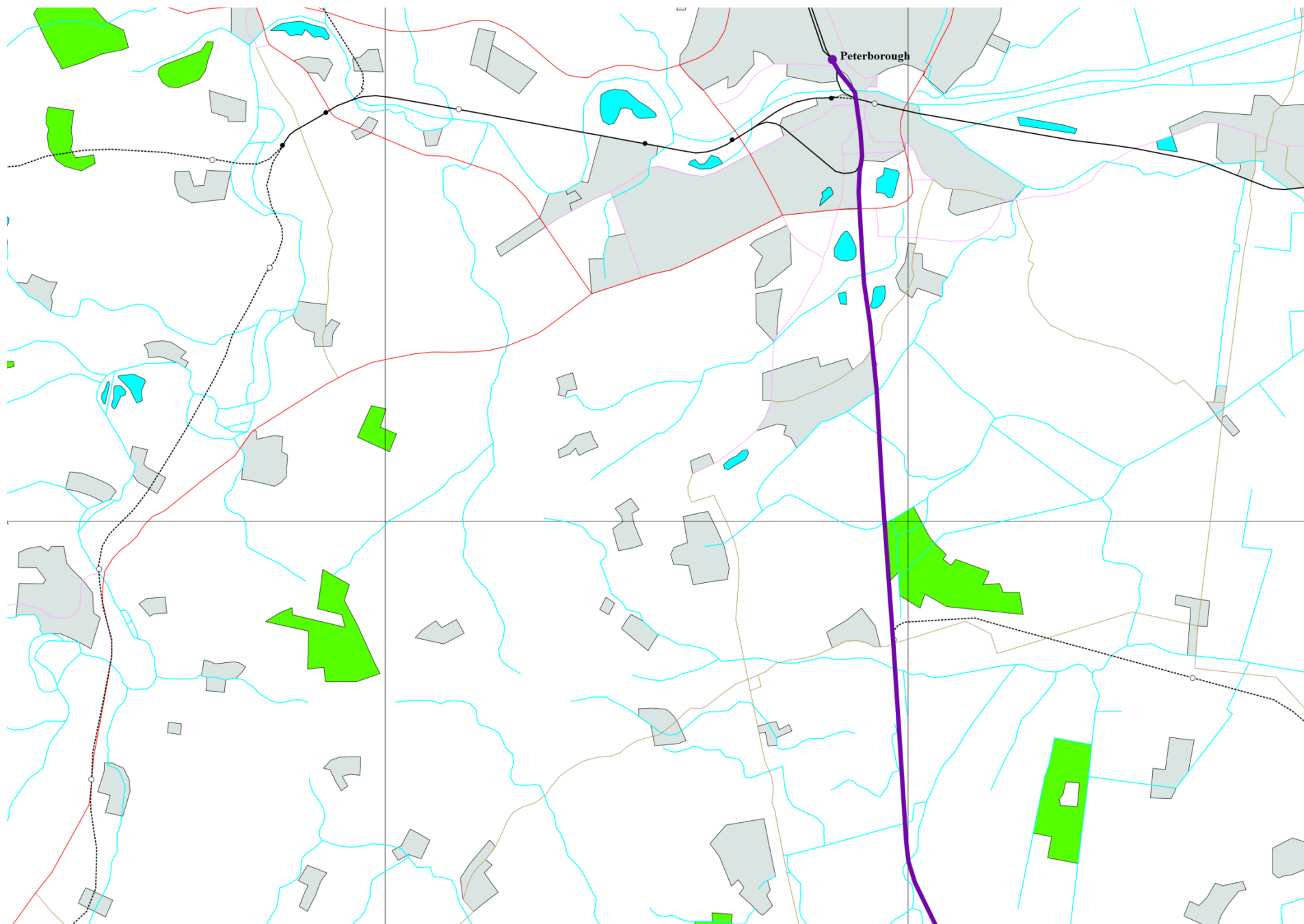












Appendix A – Timings from Luton and Stevenage

These values are derived from the new Govia Thameslink timetables.

1. Luton:

Luton	00:00	00:00	00:00
Luton AP	00:02	00:02	00:02
Harpenden	00:08		00:08
St. Albans	00:14		00:14
Radlett			00:19
Elstree & B			00:23
Mill Hill B			00:28
Hendon			00:31
Cricklewood			00:36
West Hampstead	00:27	00:25	00:39
Kentish Town			00:44
St. Pancras	00:35	00:33	00:48

The first and third columns are exact timings. Column 2 assumes 2 minutes are saved by omitting the Harpenden and St. Albans stops.

2. Stevenage

Stevenage	00:00	00:00	00:00
Knebworth		00:04	00:04
Welwyn North		00:09	00:09
Welwyn Garden City		00:13	00:13
Hatfield		00:17	00:17
Potters Bar		00:23	
Finsbury Park	00:20	00:34	00:33

The first two columns are exact timings. The third assumes 1 minute is saved by omitting the Potters Bar stop.

So, between Luton and St. Pancras Thameslink, the stopping service takes 15 minutes longer than the fast service. Between Stevenage and Finsbury Park, the stopping service takes 13 minutes longer than the fast service.

The Stevenage timing is fortuitively exactly right, as it is required to reach Finsbury Park 13 minutes after the Brighton service (from Cambridge, as it happens). The Luton timing likewise requires to arrive at St. Pancras 13 minutes after the Brighton service (from Bedford / Corby), but takes 2 minutes longer. We thus need to accelerate it by 2 minutes; slowing the Brighton service by 2 minutes is not an option as it would then take as long as the Horsham service, and result in conflict at St. Pancras. I can't prescribe how this is to be achieved, but merely flag up the requirement.