

East-West Rail Service Plans

The approved plans for the first stage of the reopening and redevelopment of the East-West Rail route, between Oxford and Bedford, are making good progress, and the strong support for the second stage, through to Cambridge, is very encouraging, although as yet without any definite consensus on its precise route. It is recognised that East-West Rail will offer opportunities for many new and innovative through services, linking regions never previously placed in direct contact.

The present article suggests a number of such new services, and develops appropriate service plans. It assumes that stage 2 through to Cambridge will indeed be implemented, preferably following the original route, with local variations to avoid the regrettable and culpable obstructions which were allowed to be perpetrated during the years of its dereliction. Re-implementing the original route is desirable but not absolutely essential, but any variant which involves running over part of the ECML is surely retrograde.

The suggested set of services is (east-west, conforming to its name, and against my normal tendency):

- 2tphR Paddington – Old Oak Common – South Ruislip – Gerrard’s Cross – High Wycombe – Princes Risborough – Haddenham & Thame Parkway – Bicester Village – Oxford Parkway – Oxford
- 2tphR Milton Keynes – Bletchley – Winslow – Verney Junction – Calvert – Bicester Village – Oxford Parkway – Oxford – Radley – Didcot Parkway – Cholsey – Goring & Streatley – Pangbourne – Tilehurst – Reading – Wokingham – Farnborough North – North Camp – Ash – Guildford – Dorking West – Dorking Deepdene – Reigate – Redhill (reverse) – Gatwick Airport
- 2tphR Milton Keynes – Bletchley – Winslow – Verney Junction – Calvert – Quainton Road – Aylesbury Vale Parkway – Aylesbury – Little Kimble – Monks Risborough – Princes Risborough – High Wycombe – Bourne End (connections to and from Marlow) – Maidenhead – Slough – LHR Interchange – LHR Terminal 5 – LHR Terminals 1,2,3 – Old Oak Common – Paddington (LHR Shuttle)
- 2tphR York – Micklefield – Leeds City – Wakefield Westgate – South Yorkshire HL – Rotherham – Sheffield Midland – Chesterfield – Derby – East Midlands Parkway – Loughborough – Leicester – Market Harborough – Kettering – Wellingborough – Bedford Midland – Milton Keynes Parkway – Bletchley – Winslow – Calvert – Bicester Village – Oxford Parkway – Oxford – Wantage Rd. – Swindon – Royal Wootton Bassett – Chippenham – Melksham – Holt Junction – Trowbridge – Westbury – Frome – Castle Cary – Yeovil Pen Mill – Dorchester West – Weymouth
- 2tphR Cleethorpes – Grimsby Town – Barnetby – Market Rasen – Lincoln – Newark Castle – Nottingham – East Midlands Parkway – Loughborough – Leicester – Market Harborough – Kettering – Wellingborough – Bedford Midland – Milton Keynes Parkway – Bletchley – Winslow – Calvert – Bicester Village – Oxford Parkway – Oxford – Wantage Rd. – Swindon – Royal Wootton Bassett – Chippenham – Melksham – Holt Junction – Trowbridge – Westbury – Frome – Castle Cary – Yeovil Pen Mill – Yeovil Junction – Crewkerne – Chard Parkway – Axminster – Seaton Junction – Honiton – Exeter Central – Exeter St. David’s – Crediton – Okehampton – Tavistock – Bere Alston – Plymouth
- 2tphR Norwich – Wymondham – Thetford – Ely – Cambridge – Sandy – Bedford St. John’s – Milton Keynes Parkway – Bletchley – Winslow – Calvert – Bicester Village – Oxford Parkway – Oxford – Wantage Rd. – Swindon – Royal Wootton Bassett – Chippenham – Melksham – Holt Junction – Trowbridge – Westbury – Frome – Castle Cary – Yeovil Pen Mill – Yeovil Junction –

Crewkerne – Chard Parkway – Axminster – Seaton Junction – Honiton – Exeter Central – Exeter St. David’s – Crediton – Okehampton – Tavistock – Bere Alston – Plymouth

- 2tphRS Cambridge – Lord’s Bridge – Old North Rd. – Gamlingay – Pottton – Sandy – Bluntham – Willington – Bedford St. John’s – Milton Keynes Parkway – Bletchley – Swanthorne – Winslow – Verney Junction – Claydon – Calvert – Marsh Gibbon & Poundon – Launton – Bicester Village – Oxford Parkway – Oxford
- 4tphRS Bedford Midland – Bedford St. John’s – Kempston – Kempston Hardwick – Stewartby – Milbrook – Lidlington – Milton Keynes Parkway – Aspley Guise – Woburn Sands – Bow Brickhill – Fenny Stratford – Bletchley (reverse) – Milton Keynes
- 4tphRS Bedford Midland – Bedford St. John’s – Kempston – Kempston Hardwick – Stewartby – Milbrook – Lidlington – Milton Keynes Parkway – Aspley Guise – Woburn Sands – Bow Brickhill – Fenny Stratford – Bletchley – Swanthorne – Winslow – Verney Junction – Padbury – Buckingham

Milton Keynes Parkway station, incorporating the former Ridgmont station (probably relocated slightly westwards), has the usual double island platforms on HS3, but also the same arrangement on E-W Rail. This allows for cross-platform interchange between E-W Rail services, also (non-cross-platform, of course,) interchange with HS3. The representative hourly cross-platform interchange pattern is:

00H York – Brighton (HS Metro – not cross-platform)

R Norwich – Plymouth

RS Bedford Midland – Buckingham

05H Liverpool / Chester – (join / split) Wolverhampton – St. Pancras West (HS-C)

(connects into the following E-W services)

07H York – St. Pancras West (HS-C – not cross-platform)

RS Cambridge – Oxford

RS Bedford Midland – Milton Keynes

15H Preston - Brighton (HS Metro – not cross-platform)

R Cleethorpes – Plymouth

RS Bedford Midland – Buckingham

23H Manchester Piccadilly – St. Pancras West (HS-C – not cross-platform)

R York – Weymouth

RS Bedford Midland – Milton Keynes

– repeating at 30, 35, 37, 45 and 53 minutes past.

Representative hourly cross-platform interchange pattern at Verney Junction (an island platform):

00R Milton Keynes – Gatwick Airport

RS Buckingham – Bedford Midland

15R Milton Keynes – Paddington (LHR shuttle)

RS Buckingham – Bedford Midland

– repeating at 30 and 45 minutes past.

Representative hourly cross-platform interchange pattern at Calvert:

- 00H Manchester Piccadilly – Margate (HS Metro – not cross-platform)
 - R Norwich – Plymouth
 - R Milton Keynes – Gatwick Airport
- 07H Liverpool – Euston (HS-C – not cross-platform)
 - RS Cambridge – Oxford
- 15H Blackpool / Windermere – (join / split) Preston – Margate (HS Metro – not cross-platform)
 - R Cleethorpes – Plymouth
 - R Milton Keynes – Paddington (LHR shuttle)
- 23H Edinburgh / Glasgow – (join / split) Carlisle – Euston (HS-C – not cross-platform)
 - R York – Weymouth

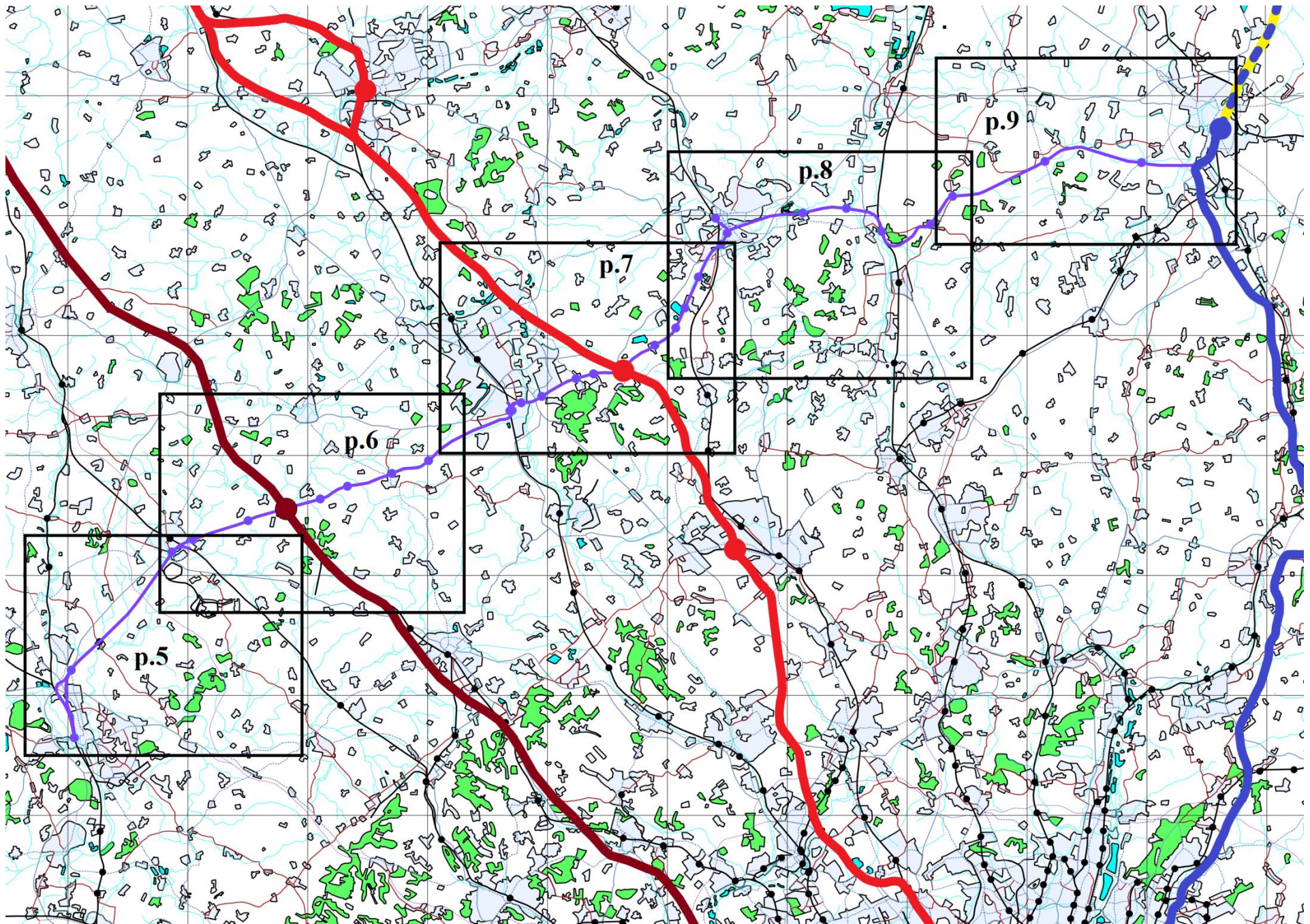
– repeating at 30, 37, 45 and 53 minutes past.

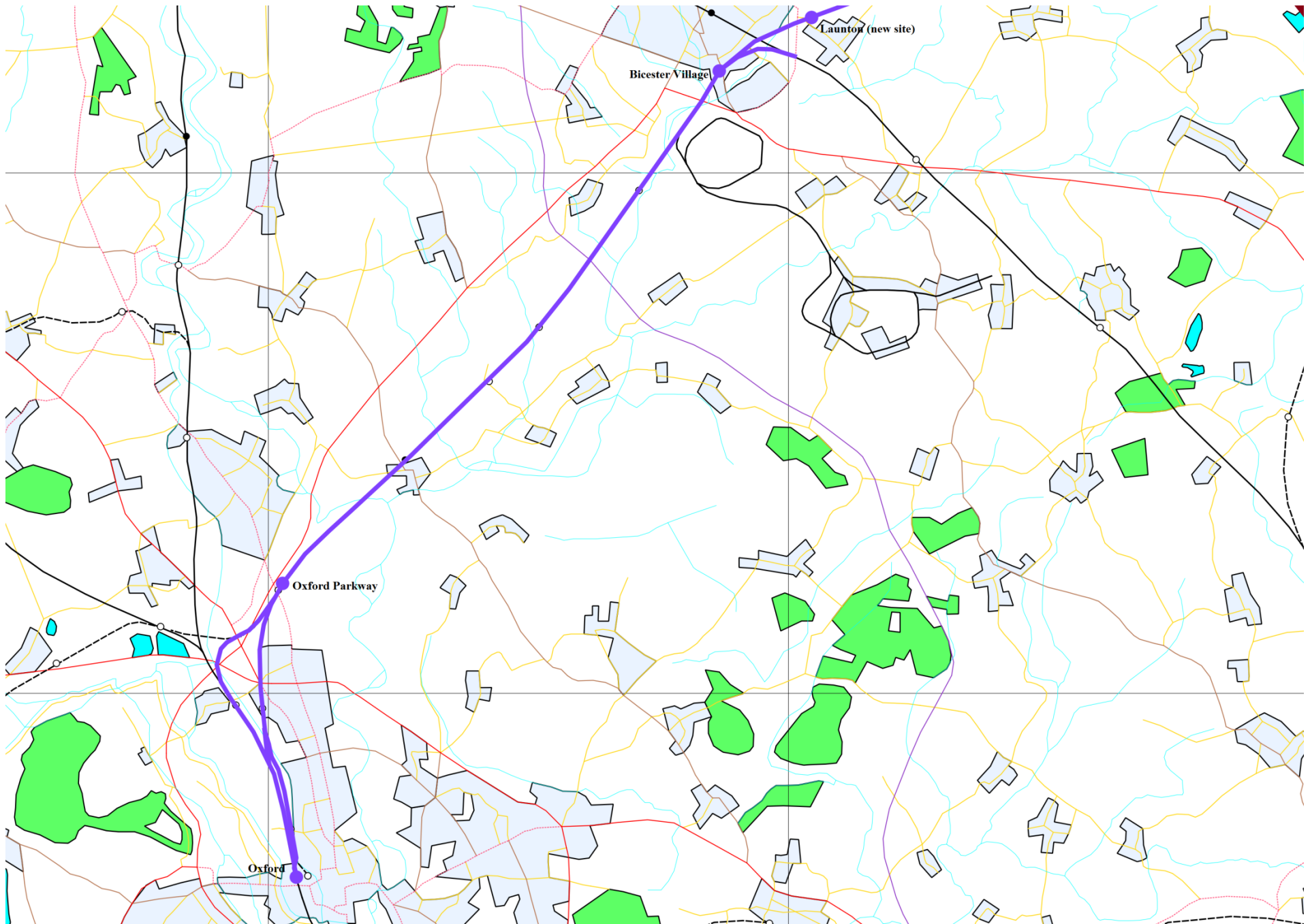
The following page gives the key to the various maps of East-West Rail, followed by the maps themselves, together with overall maps of the complete East-West Rail network of inter-regional services, as detailed above – which demonstrates in very vivid form what a remarkable enabler of inter-regional connections East-West Rail is. (Note that in the network maps, only those stations on East-West Rail itself served by the inter-regional services are shown, - otherwise, at this scale, they'd all merge into a blur.) In the network maps I have included the LHR Shuttle services to Oxford (thus including the section of route between Maidenhead and Reading), since although, terminating at Oxford, it doesn't actually run on the East-West route itself, it makes connections with services which do.

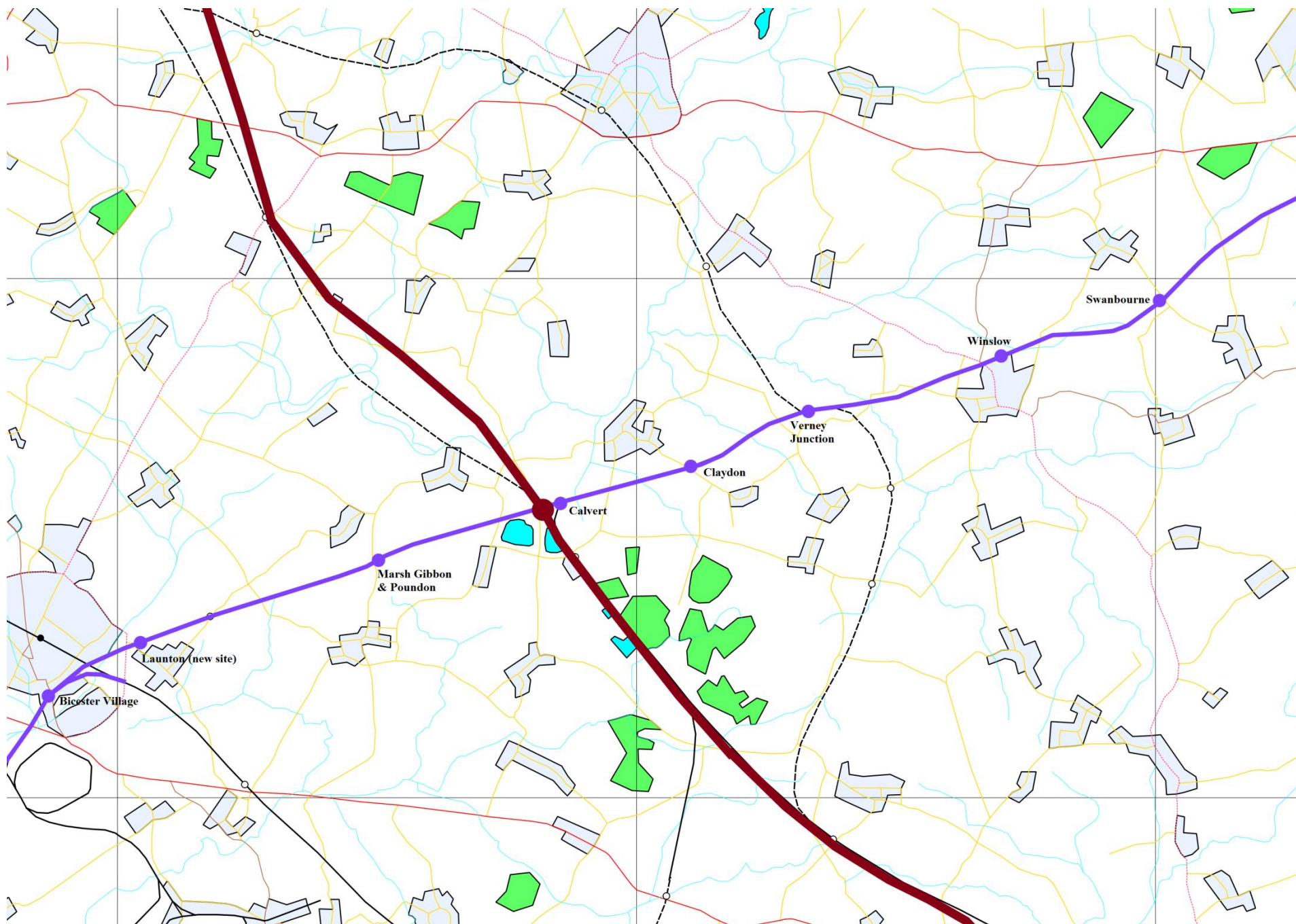
Note that the custom colour for East-West Rail in the maps is deep violet (R/G/B values 128/64/255).

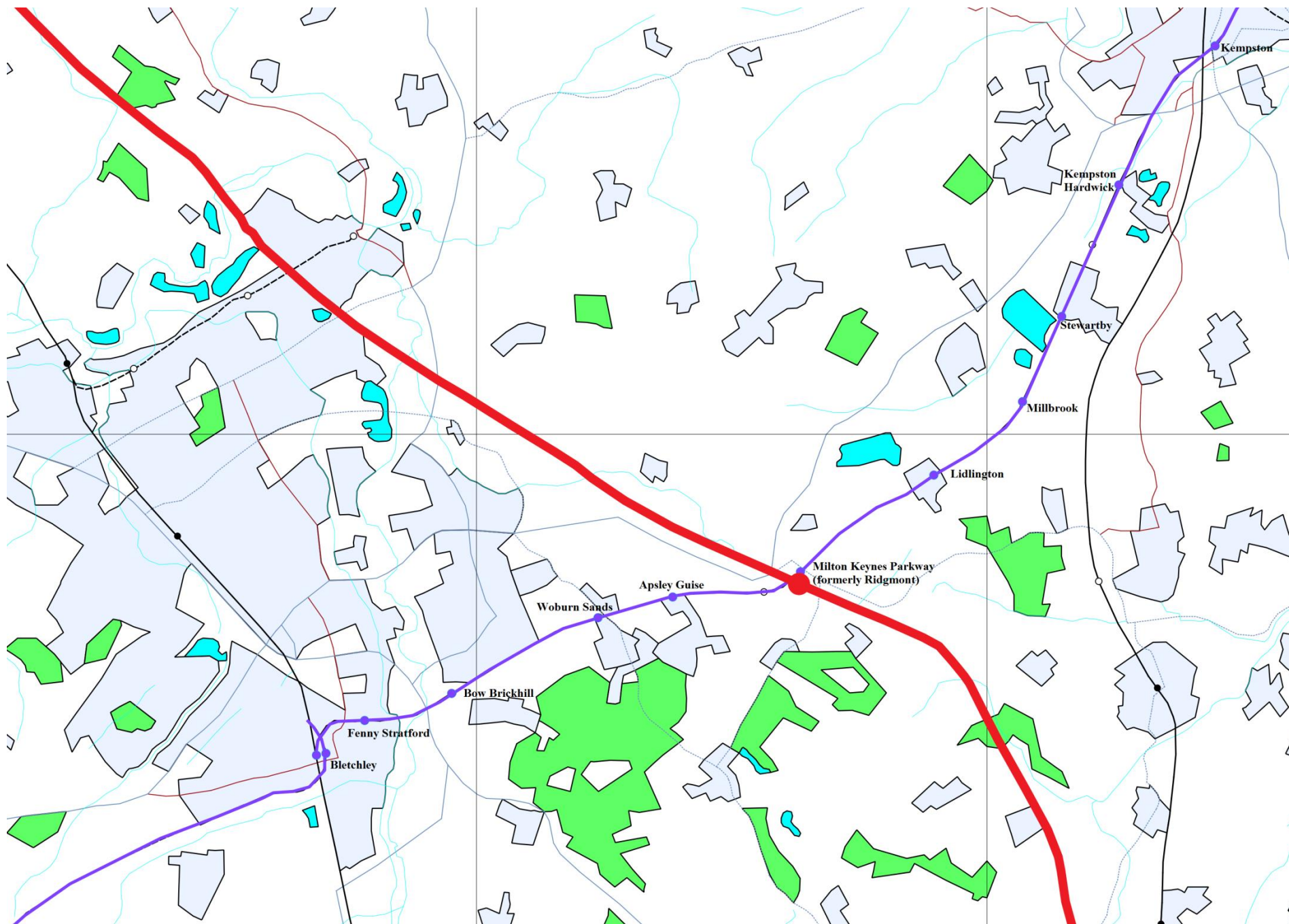
Reference should also be made to the article 'The Oxford Metro', since this is closely connected, and thus, for example, Islip station is served by the 4tph metro service between Abingdon and Bicester North, rather than by the East-West stopping service from Cambridge. In order to accommodate the metro services, there are 4 tracks between Didcot North Junction and Wolvercote North Junction, and between Oxford and Bicester. See appendix A for full details of track layouts, and Oxford station in particular, but it is worth pointing out one ingenious feature here: in order to accommodate 4 tracks on the East-West route in the Wolvercote area, which would be difficult, owing to Wolvercote tunnel and main road overbridges, the extra two tracks diverge at Water Eaton Junction and follow the former freight chord (which linked across to the Worcester line) underneath the ring road and then join the GW tracks at the new Wolvercote South Junction (which is a better arrangement anyway for the services passing through Oxford; only the Chiltern service from Paddington and the stopping service from Cambridge need to pass along through Wolvercote tunnel to reach the north-side terminal platforms). That explains the otherwise confusing small loop immediately north of Oxford on the maps.

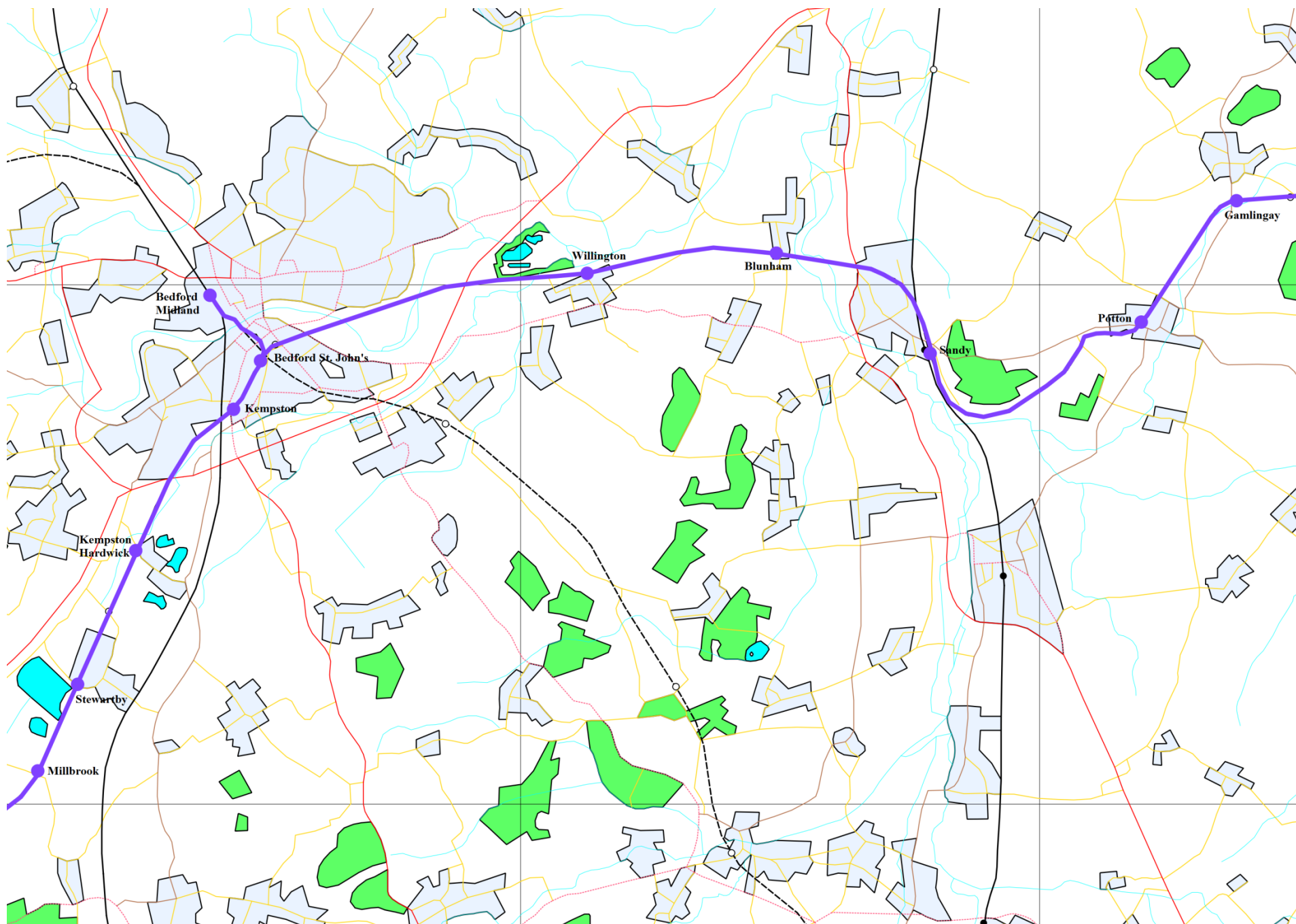
The principal interchanges with the East-West route itself are at Cambridge, with HS6 services to Norwich and King's Lynn, and with HS6/HS10 services to the north via Peterborough; at Sandy, with Thameslink and ECML services; at Bedford with MML services; at Milton Keynes Parkway with HS3's HS Metro and HS-C services; at Bletchley, with WCML services; at Calvert, with HS2's HS-C services and with Crossrail 4; and at Oxford, with the Oxford Metro, the Cotswold line and Cross-Country services.

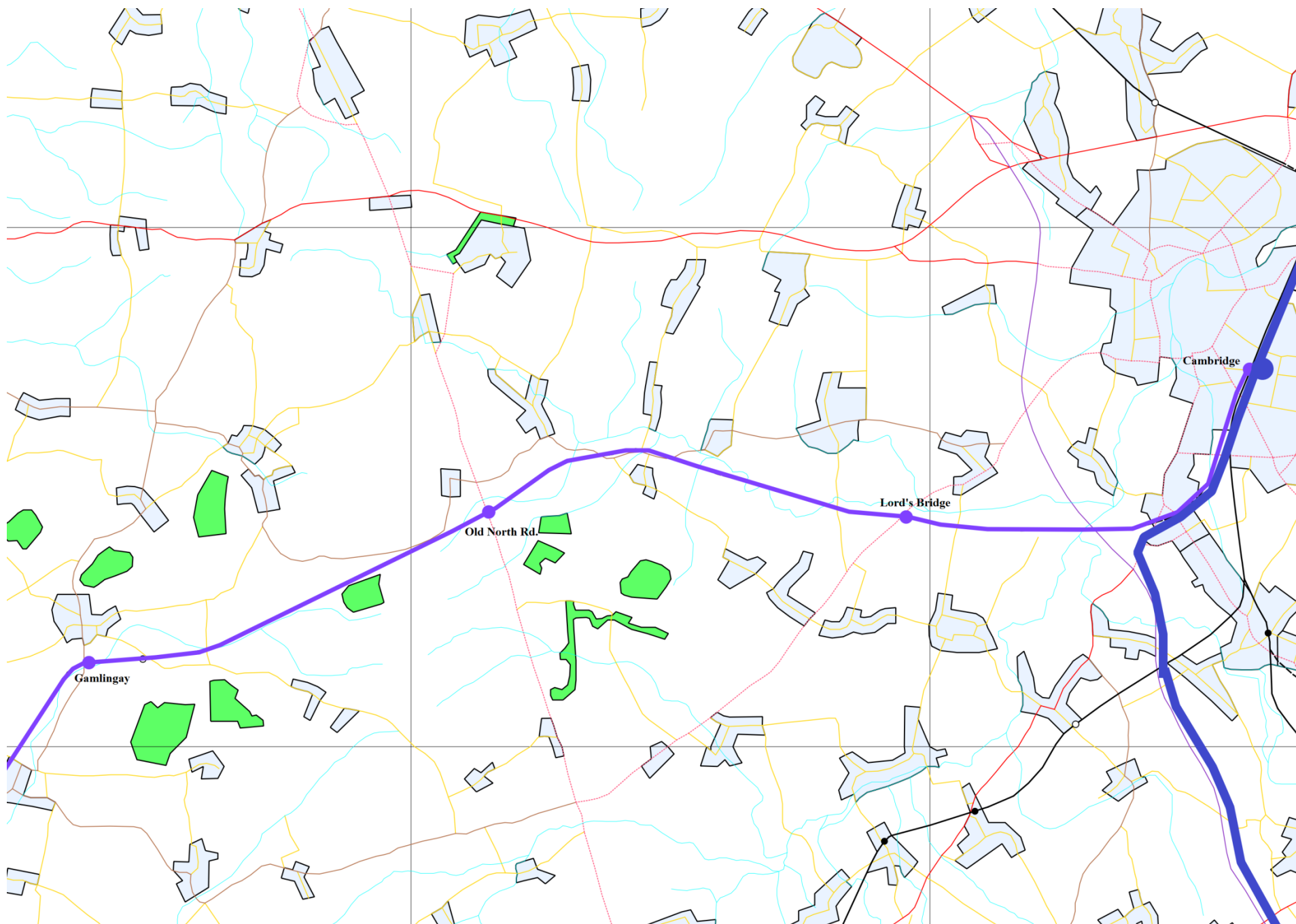


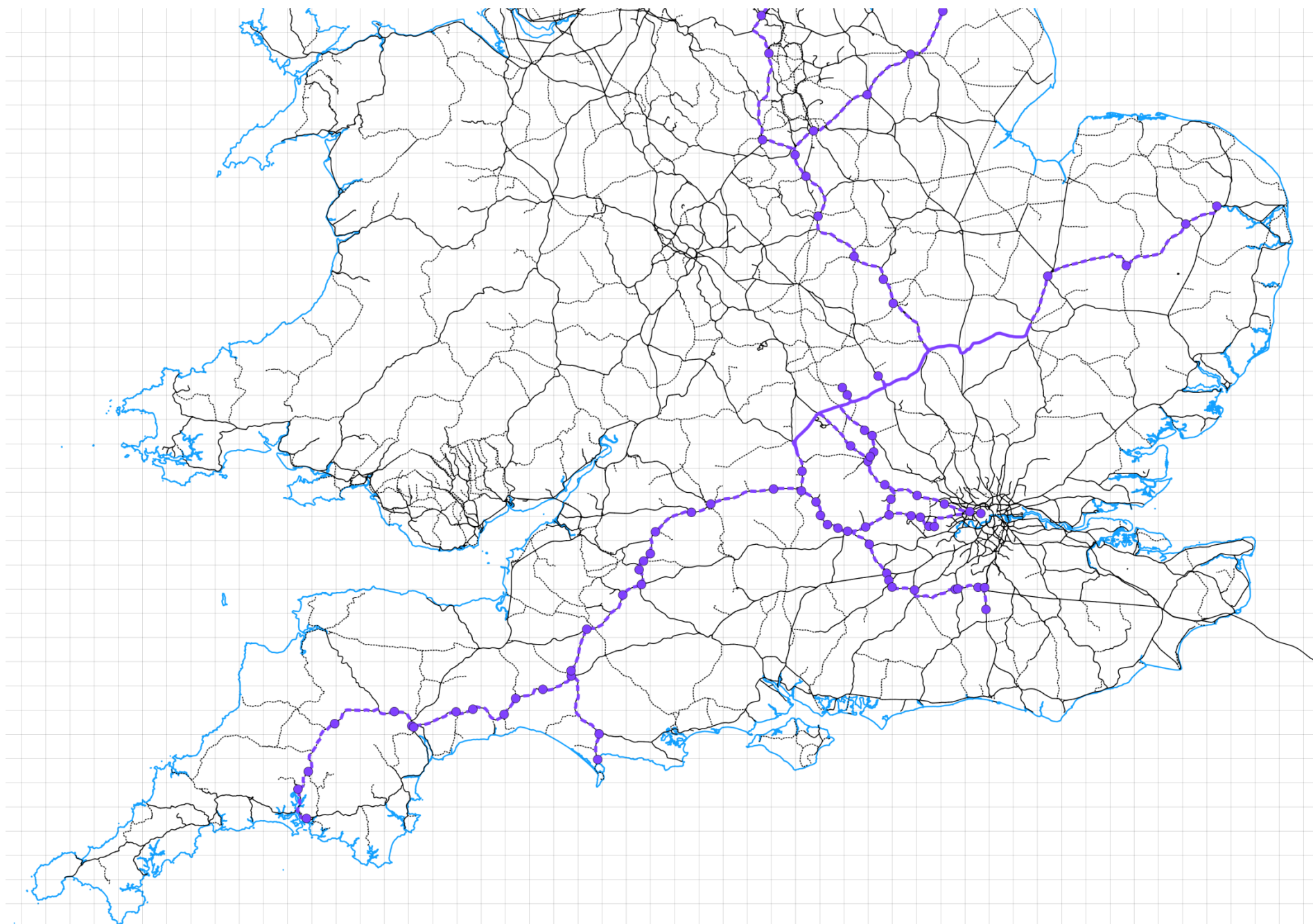


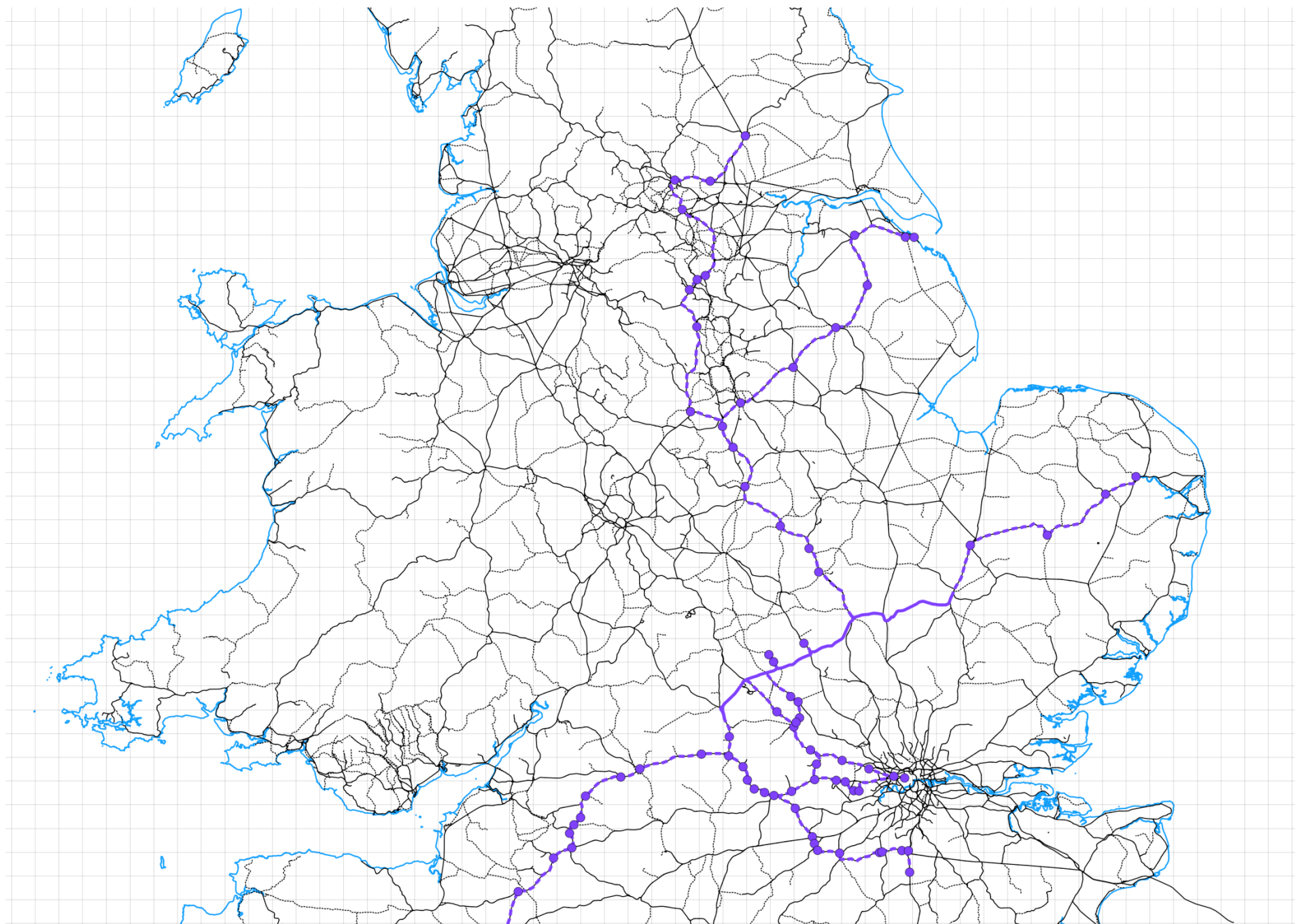




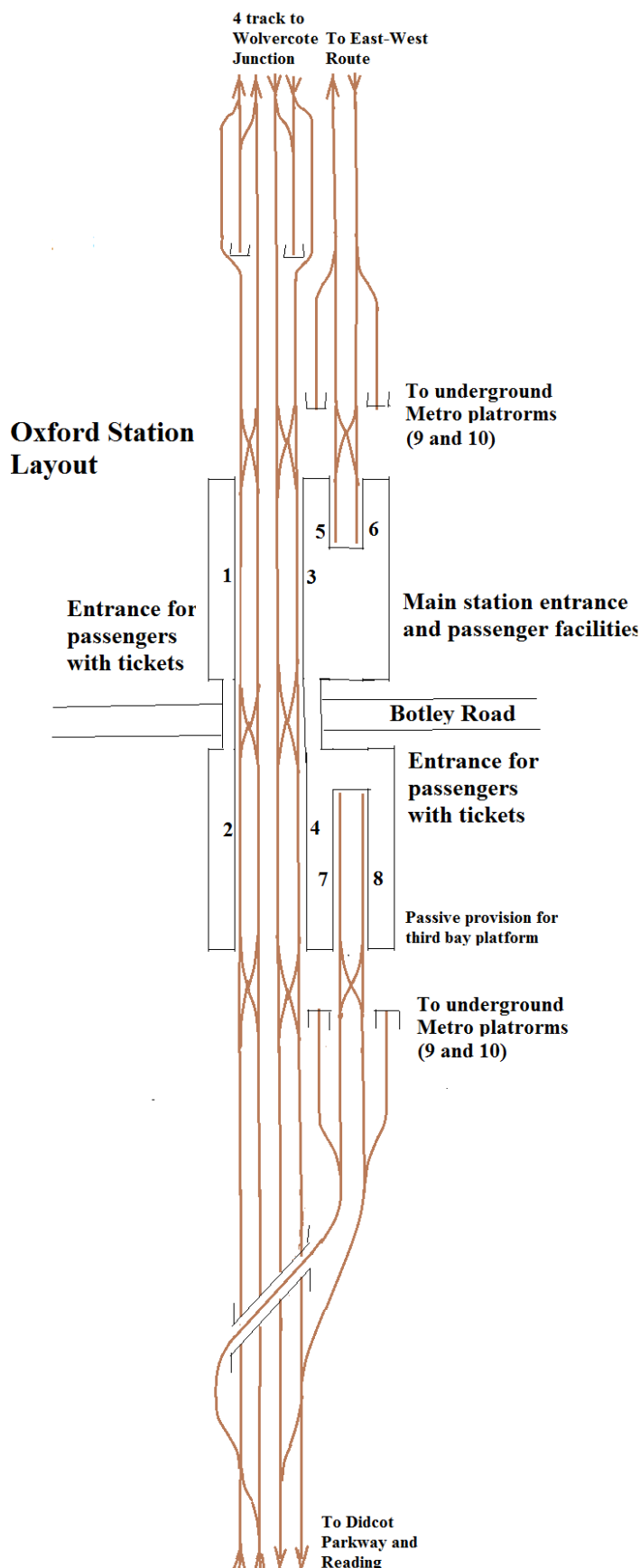








Appendix A – Track Layout between Didcot North Junction and Wolvercote Junction



The most critical location is Oxford station. The layout given here is a development of the original proposal, to include the Oxford Metro. See the article ‘The Oxford Metro’ for further details.

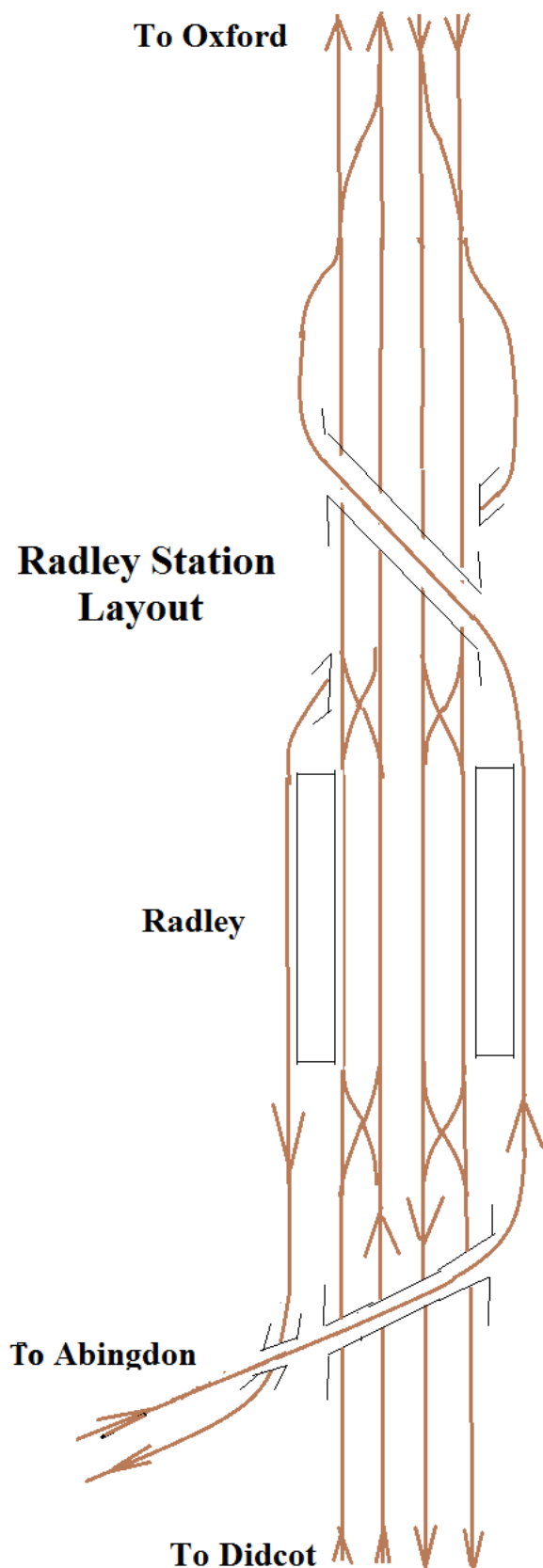
Oxford needs several more platforms. Because of the laterally-constrained site of the existing station, the new platforms should be continuations of the existing two through platforms, on the south side of Botley Road. Scissors crossovers are required at the north and south ends of the platforms, and in the centre, on the Botley Road bridge. Each platform can thus contain two trains simultaneously, and they can overtake. This is same-platform interchange – not as good as cross-platform interchange, as it requires the passengers to walk further, but still quite good (no steps). The southern-facing bay platforms are on the east side, and definitely require access from the south via a flyover, because of the intensity of traffic. Extra entrances for passengers with tickets, closer to their trains, are recommended, as indicated.

Note that this design retains all of the existing infrastructure.

The Oxford Metro platforms are underground, beneath the station buildings or, more likely, in a cut-and-cover construction beneath the station forecourt. They are approached by lines branching from the approaches to the terminal platforms, north and south and also from the main lines to the north.

The southern terminal platforms accommodate the Oxford branch of the Heathrow Shuttle and the Bristol – Oxford service. The northern terminal platforms accommodate the London via Bicester and the Cambridge services.

There are four tracks (at least) between Didcot North Junction and Wolvercote Junction, paired by direction.



The layout at Radley, left, is notable. Since the purpose is to provide cross-platform connections between the Abingdon-Bicester service and the Heathrow Shuttle to London, also the (alternating) Milton Keynes – Gatwick Airport services, a contraflow arrangement is adopted such that trains **from** Abingdon have the cross-platform connection into trains **to** London via Heathrow or to Gatwick, and trains **from** London / Gatwick have cross-platform connections into trains **to** Abingdon. This is a very elaborate (and expensive!) arrangement, but it provides very great convenience for the passenger.

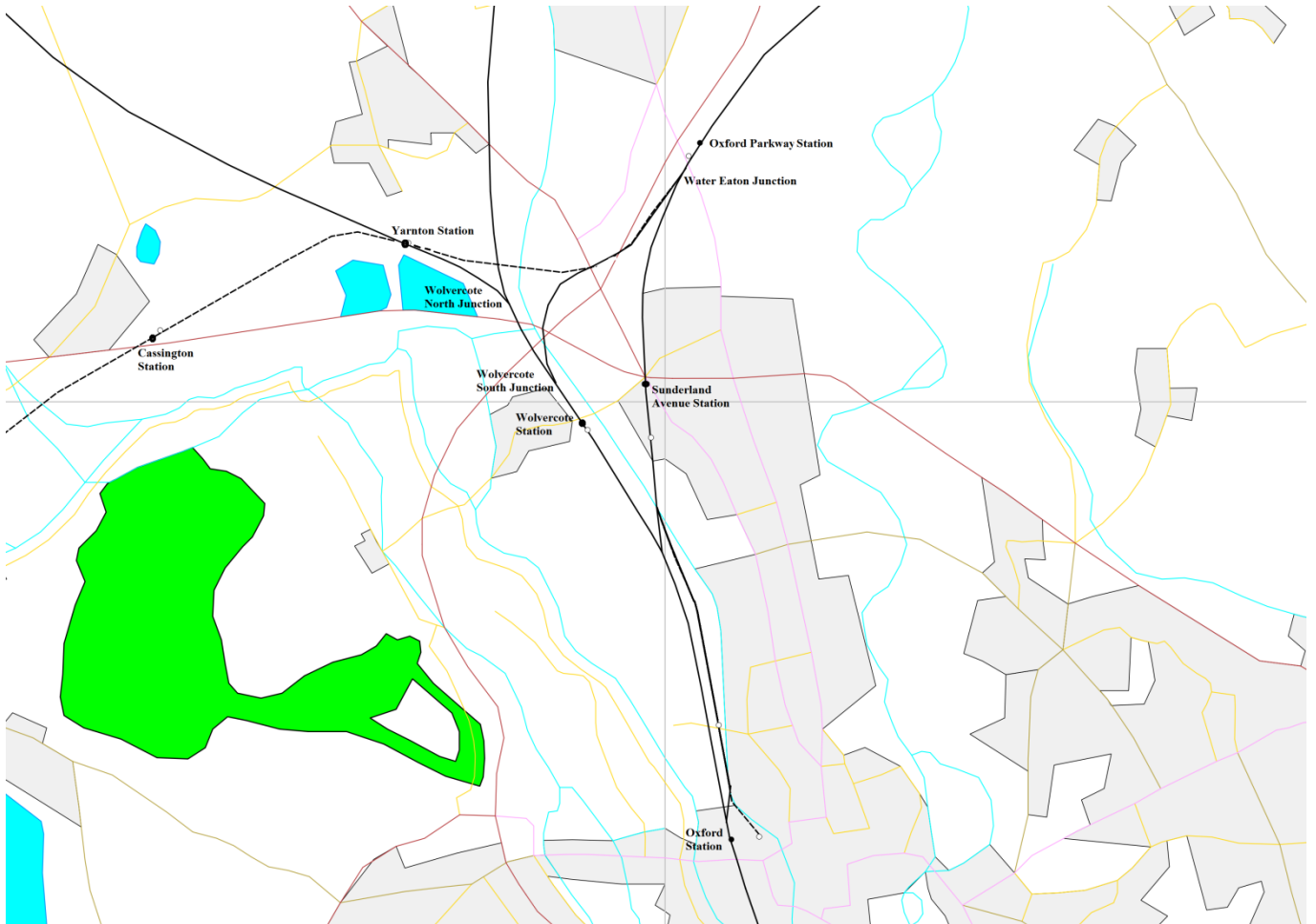
The idea is that the services **from** Abingdon of the Oxford Metro (4tph Abingdon – Bicester North and 4tph Abingdon – Woodstock, alternating,) all make southbound connections at Radley, (to the 2tph Oxford – Paddington Shuttle / 2tph Milton Keynes – Gatwick Airport, and the 2tph Banbury – Didcot / 2tph Moreton-in-Marsh – Didcot services). Likewise the northbound services make connections at Radley **to** Abingdon.

The Abingdon branch is double track.

The lines switch to the usual arrangement, paired by direction, north of Radley, since otherwise it would not be possible to have straightforward crossovers between fast and relief lines between Radley and Oxford. (A very luxury arrangement would have 6 tracks between Radley and Kennington Junction, the outer tracks being contraflow, and make the switch at Kennington.)

Radley also, very usefully, provides an overtaking facility for non-stop trains.

Actually, it would be quite easy to add the contraflow arrangement later, having seen if demand justifies it. Initially, the Abingdon branch would come in with the normal flyover junction, to the south of the station. Subsequently switching the direction over the flyover would be trivial. (The rest of the work, north of the station, would not, of course, be trivial.)



As noted above, there are (at least) 4 tracks between Didcot North and Wolvercote North (the original Wolvercote) Junctions. There are also 4 tracks between Oxford and Bicester Village, for the East-West route and the Oxford Metro. But to avoid the problems of widening Wolvercote Tunnel and the surrounding cuttings, the extra two tracks are routed over part of the former freight chord between Water Eaton Junction and Yarnton. After passing beneath the Woodstock Road, the two new tracks curve to the south and join the main line, with flyover, at the new Wolvercote South Junction. The above map illustrates the arrangement.

East-West services terminating at Oxford, in the two north bay platforms, (these are the Chiltern service from Paddington via High Wycombe and the stopping service from Cambridge,) and also the Abingdon – Bicester North service of the Oxford Metro, use the original two (LNW) tracks between Water Eaton and Oxford, via Wolvercote Tunnel. All through East-West services use the new connection to Wolvercote South Junction, which leads them straight to/from the double-length through platforms at Oxford (1,2 and 3,4).