

The Oxford Metro

The Oxford Metro covers the area from Fairford in the west to Princes Risborough in the east, and from Didcot in the south to Banbury in the north.

It consists of heavy- and light-rail components. The proposed metro services on the heavy-rail routes are:

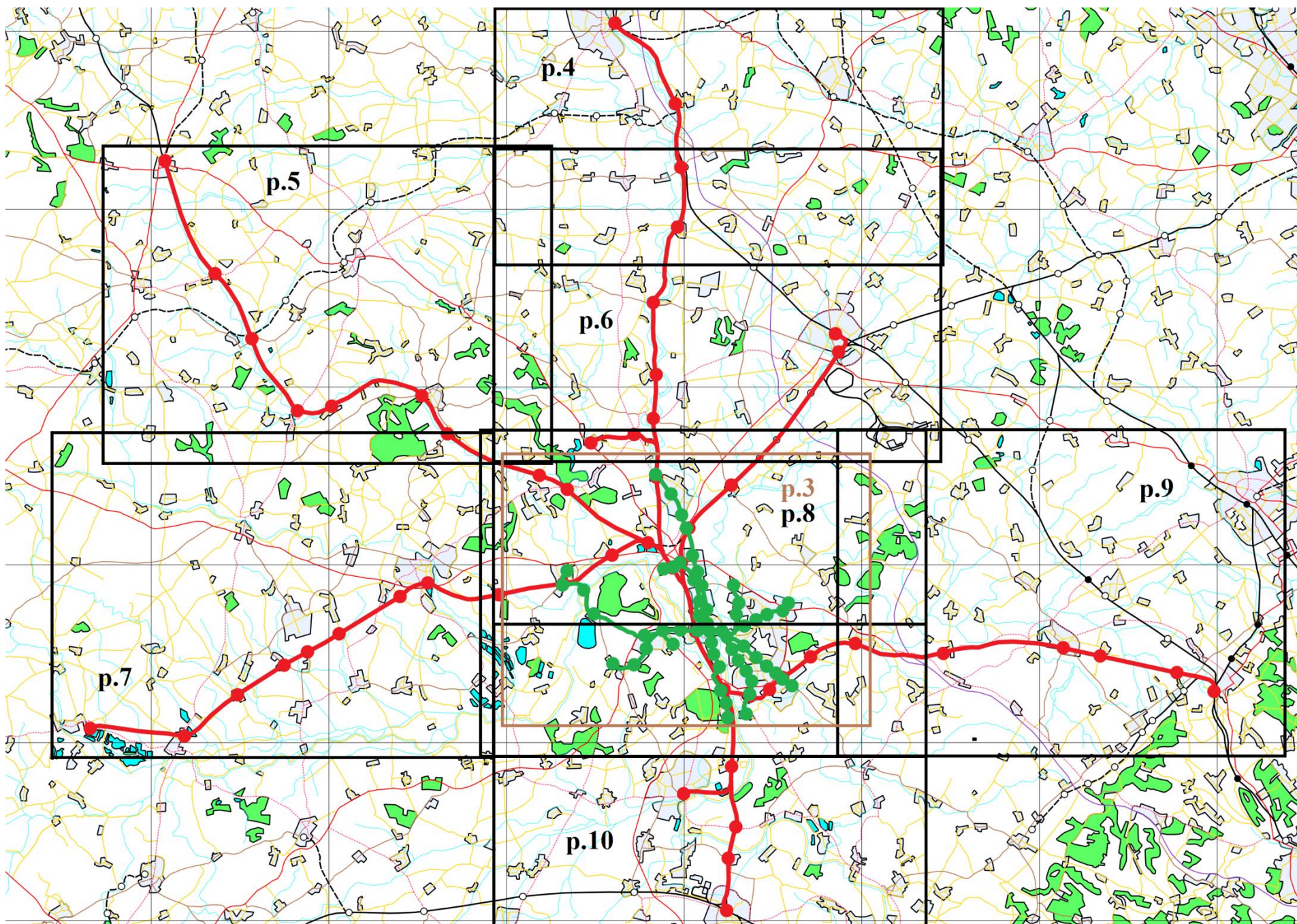
- 2tphRS Didcot Parkway – Appleford – Culham – Radley – Kennington Junction – Oxford – Wolvercote – Kidlington – Bletchington – Tackley – Heyford – Aynho – King’s Sutton – Banbury
- 2tphRS Didcot Parkway – Appleford – Culham – Radley – Kennington Junction – Oxford – Wolvercote – Yarnton – Hanborough – Combe – Finstock – Charlbury – Ascot-under-Wychwood – Shipton – Kingham – Adlestrop – Moreton-in-Marsh
- 4tphRS Abingdon – Radley – Kennington Junction – Oxford – Sunderland Avenue – Oxford Parkway – Islip – Bicester Town – Bicester North
- 4tphRS Abingdon – Radley – Kennington Junction – Oxford – Kidlington – Shipton-on-Cherwell – Woodstock
- 4tphRS Wheatley – Horspath – Cowley – Blackbird Leys – Littlemore – Kennington Junction – Oxford – Wolvercote – Yarnton – Cassington – Eynsham – South Leigh – Witney
- 4tphRS Princes Risborough – Bledlow – Towersey – Thame – Tiddington – Wheatley – Horspath – Cowley – Blackbird Leys – Littlemore – Kennington Junction – Oxford – Wolvercote – Yarnton – Cassington – Eynsham – South Leigh – Witney – Curbridge & Ducklington – Brize Norton & Bampton – Carterton – Alvescot – Kelmscot & Langford – Lechlade – Fairford

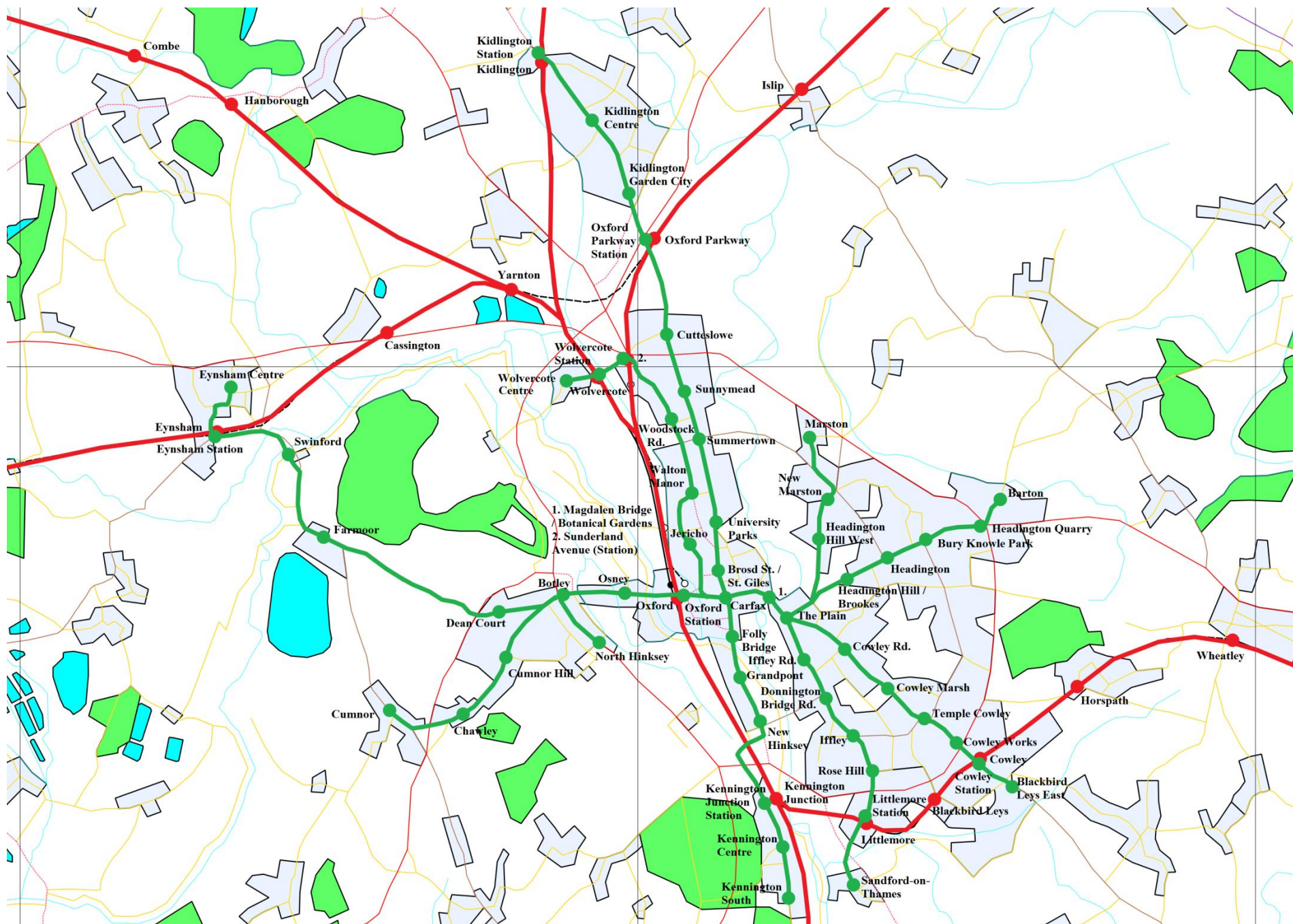
Light rail routes are proposed on a west – east axis from Eynsham to Cowley, Cumnor to Barton and North Hinksey to Marston. These all share the same route between Botley and The Plain. Two further routes are proposed on a north – south axis from Kidlington Station to Kennington and from Wolvercote to Sandford-on-Thames; these don’t share any route, but the Wolvercote – Sandford service shares route with the west – east services between Gloucester Green and The Plain. The light rail routes are on-road, or at the side of the road where space permits. They are defined on the larger-scale central-sheet map. A number of specimen stops are noted, for illustration, but there will certainly be many more. On the other maps, the light rail stops are not named.

The following page gives the key to the various maps of the Oxford Metro, followed by the maps themselves.

After that come the detailed service plans and timetables.

Appendix A describes the layout between Radley and Wolvercote Junction, including, most importantly, the layout of Oxford station.

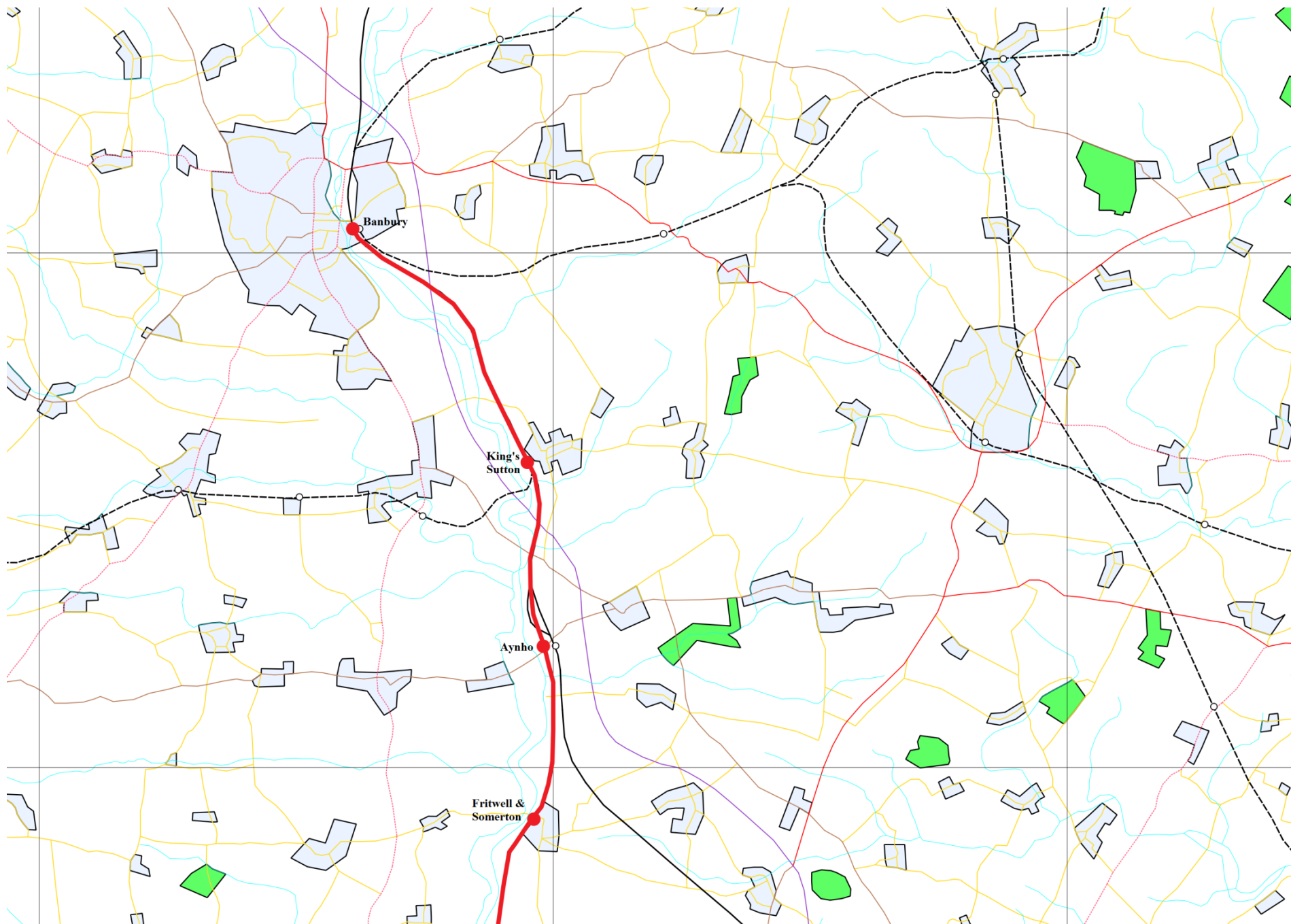


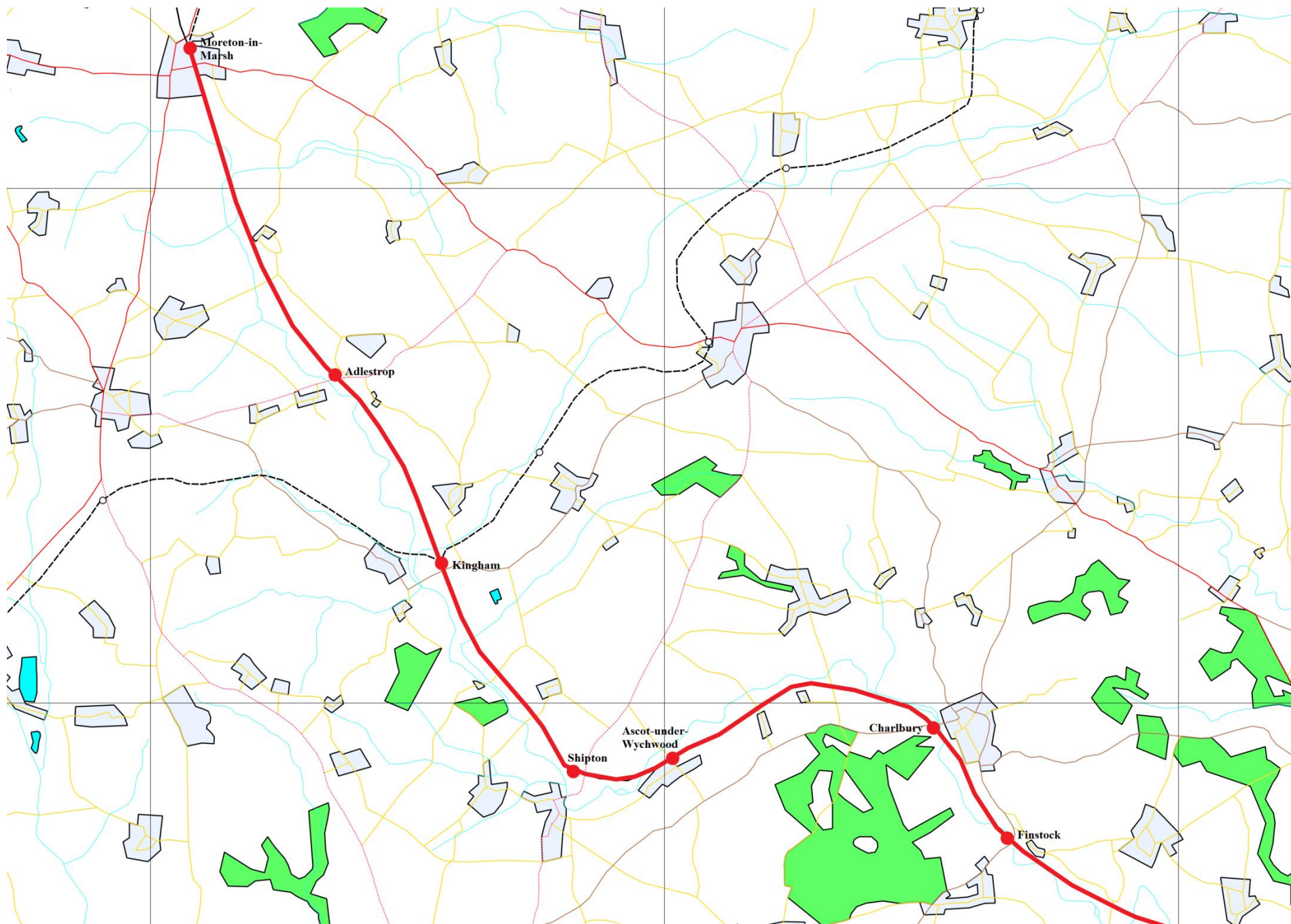


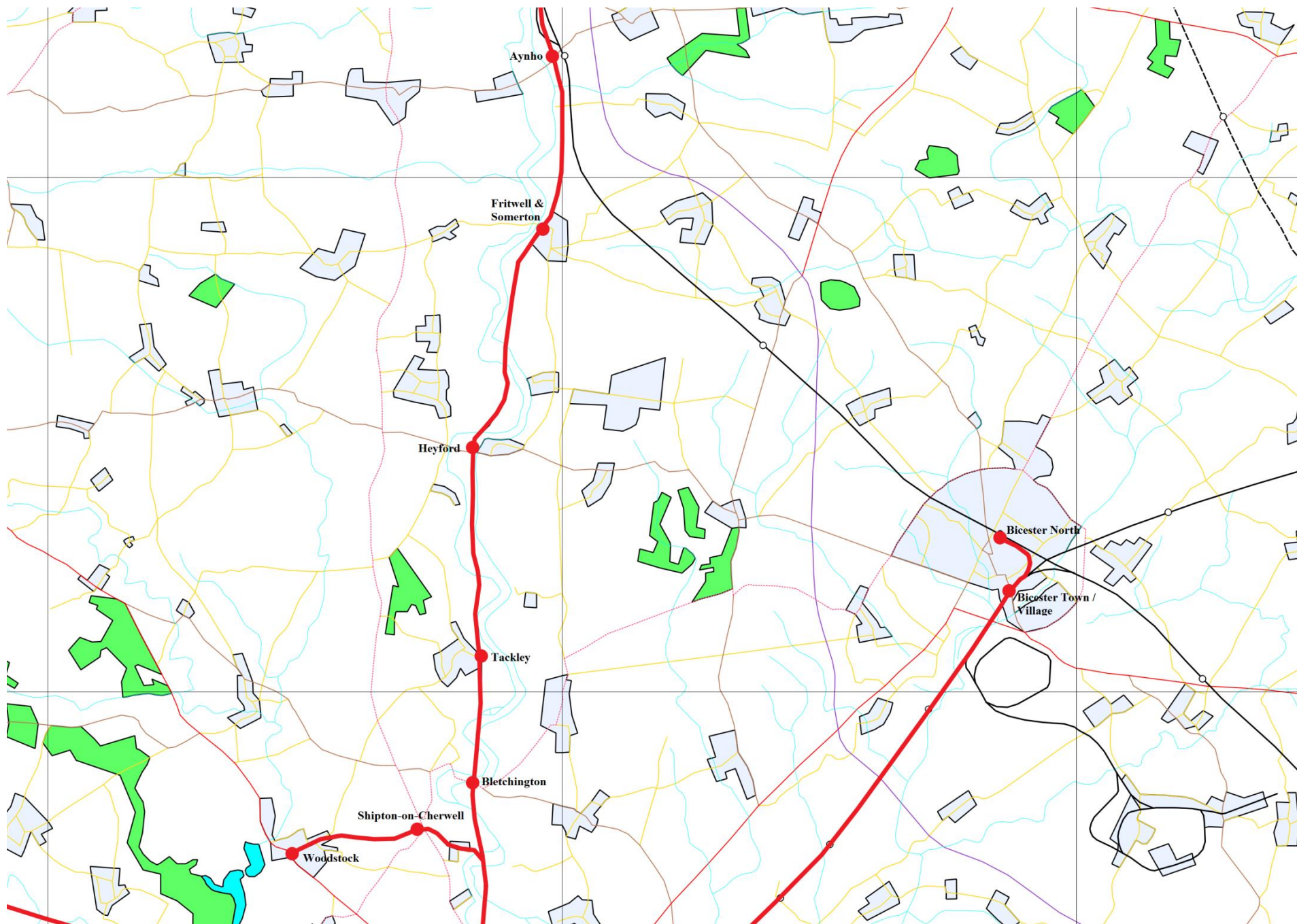
Oxford Metro Central Sheet (Larger Scale)

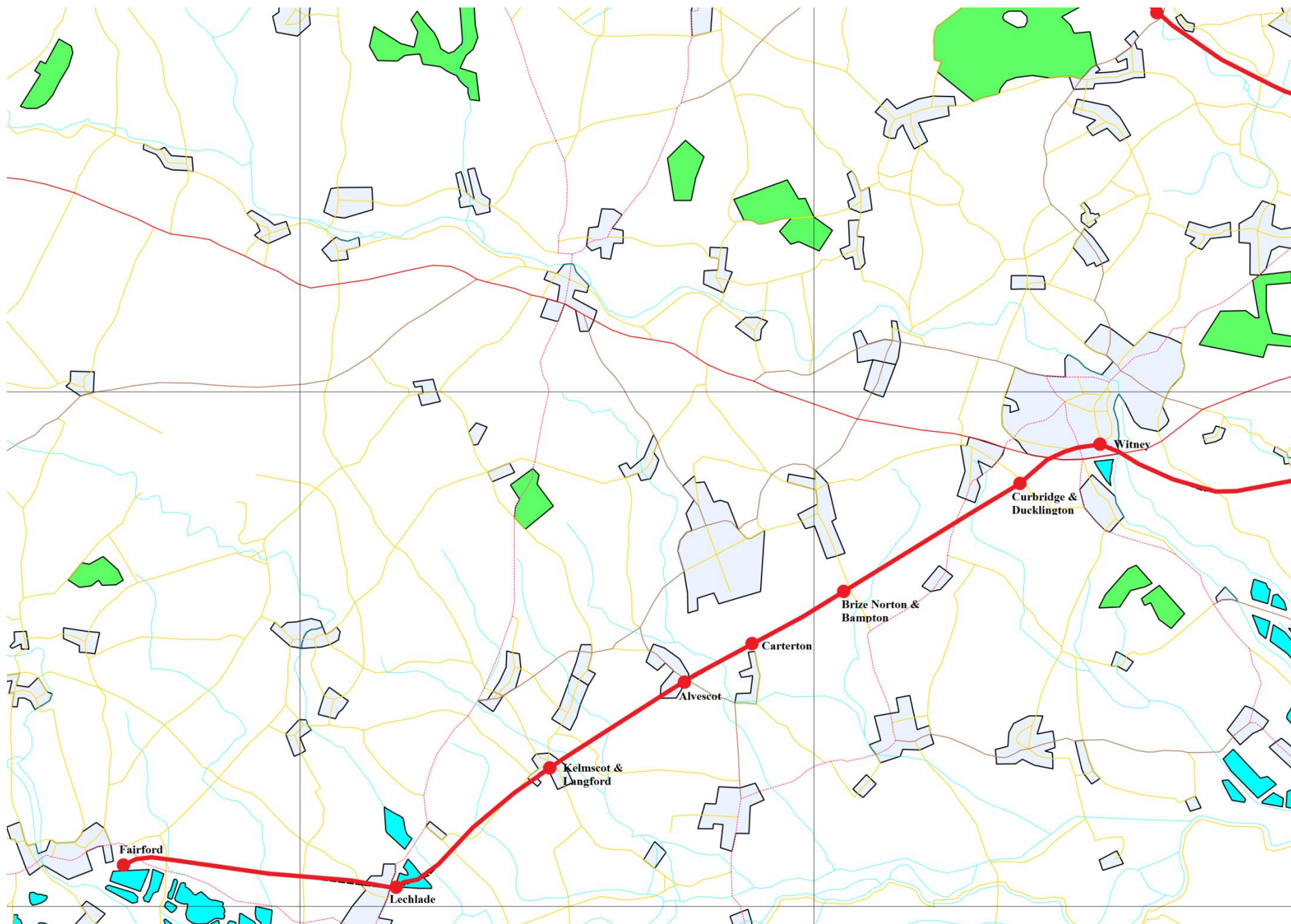
The Oxford Metro v1.1

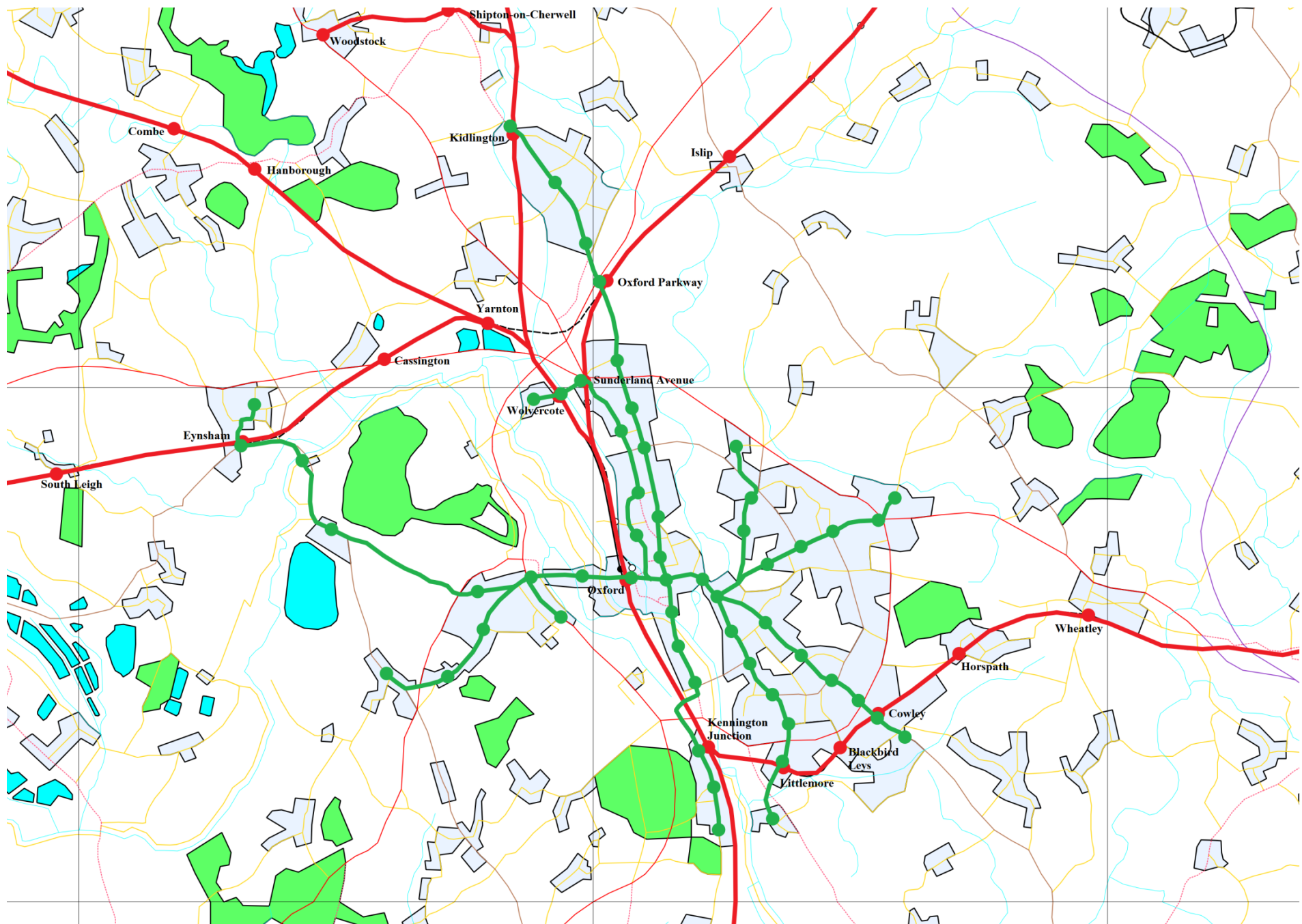
Contains Ordnance Survey data © Crown copyright and database right 2011

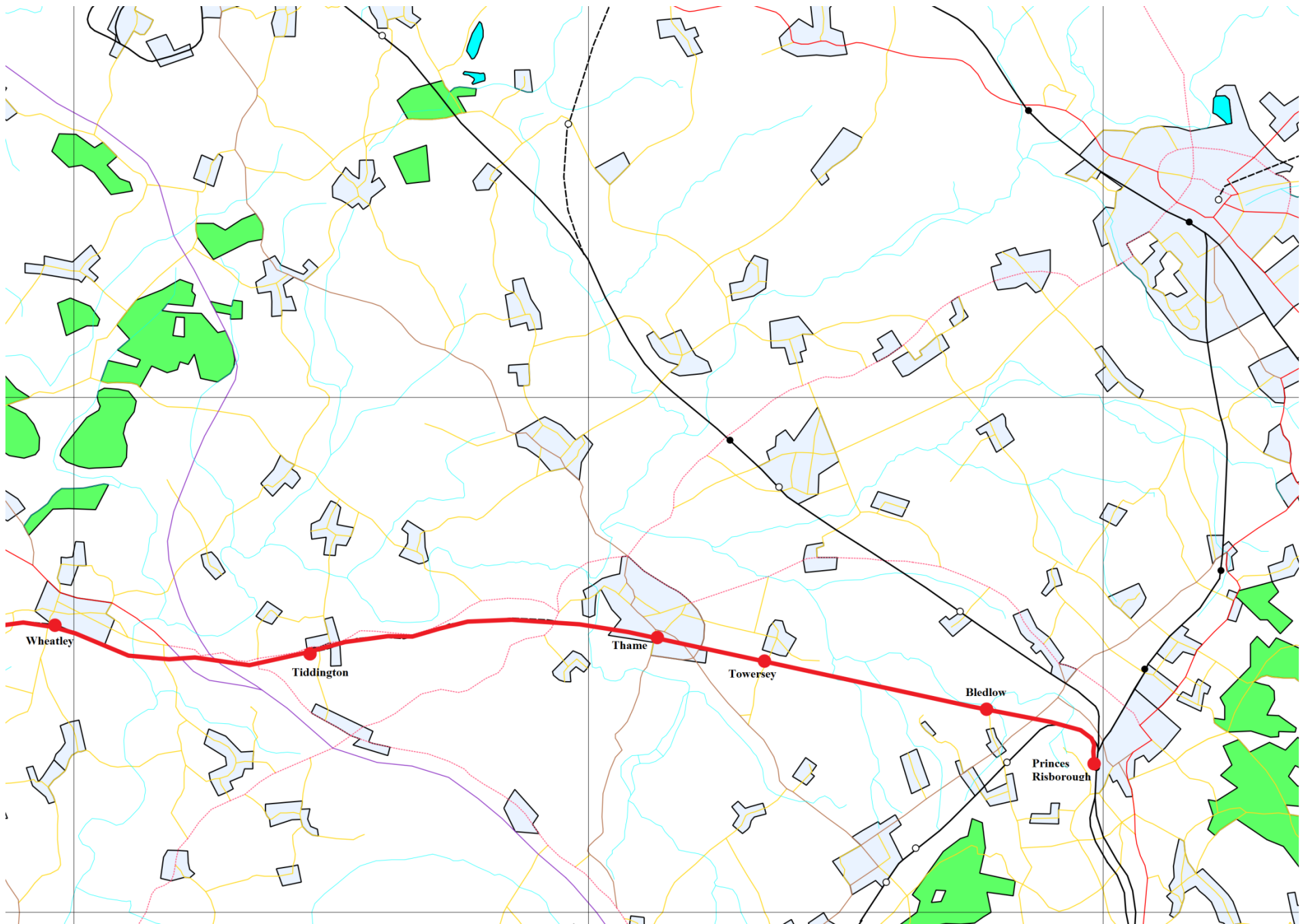


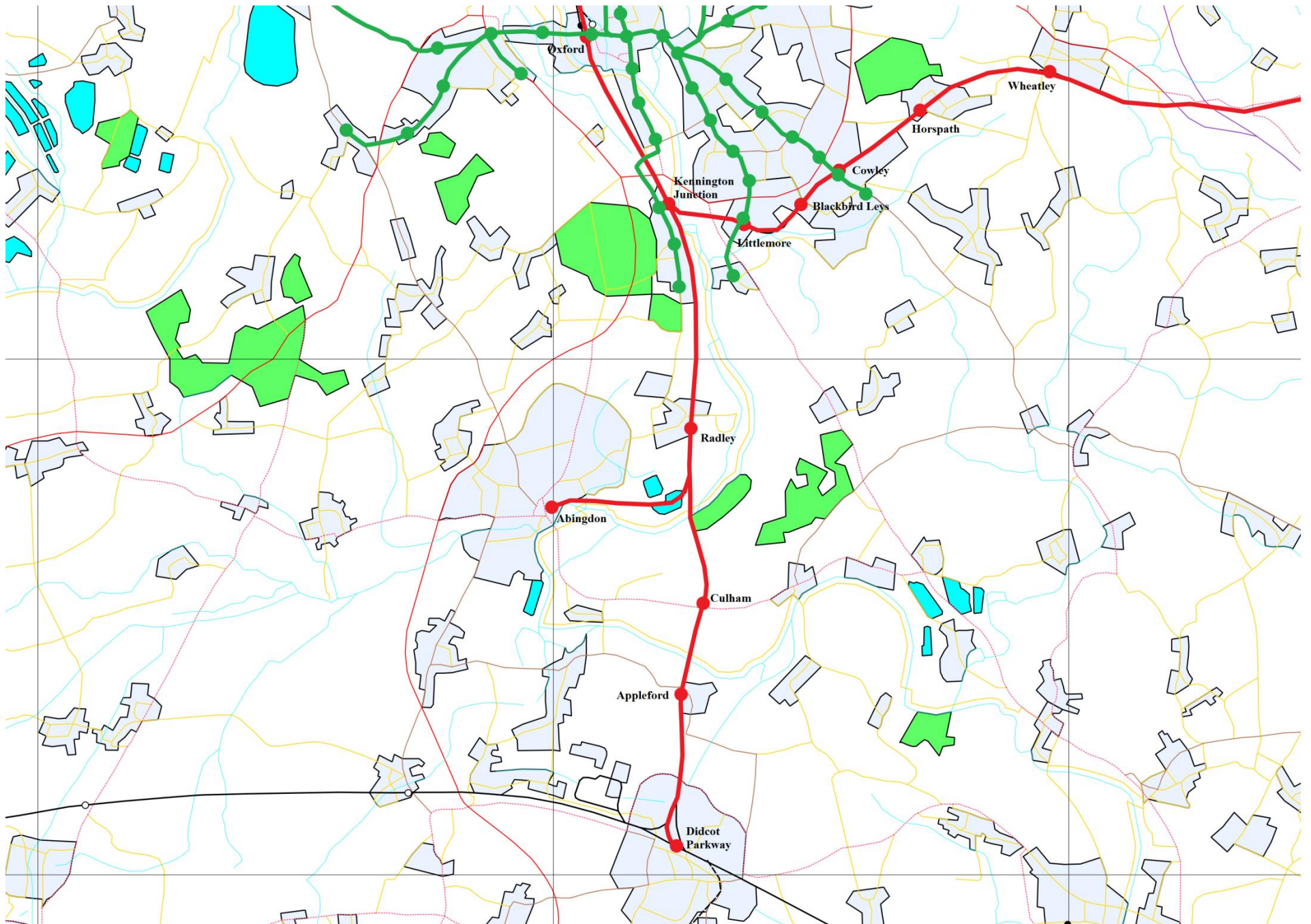












The Service Plans

In deriving the service plans, it is assumed that 4 tracks will be available between Didcot North Junction and Wolvercote Junction. It is also assumed that Oxford station has been completely rebuilt, as the existing station can barely accommodate the existing services, let alone the metro. Full details of the layouts are contained in appendix A. It is found also that an overtaking facility is required at Aynho station, thus with the platforms on stopping loops, allowing cross-country services to overtake on the central through lines.

The metro services are listed at the beginning of the article. The following Regional Metro services must also be accommodated (see the article ‘GWML Service Plans’ for full details):

- 2tphR Paddington – Old Oak Common – LHR Interchange – Reading – Oxford – Hanborough – Charlbury – Kingham – Moreton-in-Marsh – Honeybourne – Evesham – Pershore – Worcester Shrub Hill – Worcester Foregate Street – Malvern Link – Great Malvern – Colwell – Ledbury – Hereford
- 2tphR Bournemouth – Brockenhurst – Southampton Central – Southampton Airport Parkway – Winchester – Basingstoke – Reading – Oxford – Banbury – Leamington Spa – Coventry – Birmingham International – Birmingham New St. – Wolverhampton – Stafford – Stoke on Trent – Macclesfield – Stockport – Manchester Piccadilly (Cross-Country)
- 2tphR Bournemouth – Brockenhurst – Southampton Central – Southampton Airport Parkway – Winchester – Basingstoke – Reading – Oxford – Banbury – Leamington Spa – Coventry – Birmingham International – Birmingham New St. (reverse) – Tamworth – Burton on Trent – Derby – Chesterfield – Sheffield Midland – South Yorkshire (Meadowhall) – Rotherham – Wakefield Westgate – Leeds City – Micklefield – York (Cross-Country)
- 2tphR Plymouth – Bere Alston – Tavistock – Okehampton – Crediton – Exeter St. David’s Exeter Central – Honiton – Seaton Junction – Axminster – Chard Parkway – Crewkerne – Yeovil Junction – Yeovil Pen Mill – Castle Cary – Frome – Westbury – trowbridge – Holt Junction – Melksham – Chippenham – Royal Wootton Bassett – Wantage Rd. – Swindon – Oxford – Oxford Parkway – Bicester Village – Calvert – Winslow – Bletchley – Bedford St. John’s Sandy – Cambridge – Ely – Thetford – Wymondham – Norwich (Cross-Country)
- 2tphR Plymouth – Bere Alston – Tavistock – Okehampton – Crediton – Exeter St. David’s Exeter Central – Honiton – Seaton Junction – Axminster – Chard Parkway – Crewkerne – Yeovil Junction – Yeovil Pen Mill – Castle Cary – Frome – Westbury – trowbridge – Holt Junction – Melksham – Chippenham – Royal Wootton Bassett – Wantage Rd. – Swindon – Oxford – Oxford Parkway – Bicester Village – Calvert – Winslow – Bletchley – Bedford Midland – Wellingborough – Kettering – Market Harborough – Leicester – Loughborough – East Midlands Parkway – Nottingham – Newark Castle – Lincoln – Market Rasen – Barnetby – Grimsby Town – Cleethorpes (Cross-Country)
- Weymouth – Dorchester West – Yeovil Pen Mill – Castle Cary – Frome – Westbury – trowbridge – Holt Junction – Melksham – Chippenham – Royal Wootton Bassett – Wantage Rd. – Swindon – Oxford – Oxford Parkway – Bicester Village – Calvert – Winslow – Bletchley – Bedford Midland – Wellingborough – Kettering – Market Harborough – Leicester – Loughborough – East Midlands Parkway – Derby – Chesterfield – Sheffield Midland – South Yorkshire (Meadowhall) – Rotherham – Wakefield Westgate – Leeds City – Micklefield – York (Cross-Country)

- 2tphR Paddington – Old Oak Common – LHR Terminals 1,2,3 – LHR Terminal 5 – LHR Interchange – LHR Interchange – Slough – Maidenhead – Twyford – Reading – Tilehurst – Pangbourne – Goring and Streatley – Cholsey – Didcot – Radley – Oxford (LHR Shuttle)
- 2tph Gatwick Airport – Redhill (reverse) – Reigate – Dorking Deepdene – Dorking West – Guildford – Ash – North Camp – Farnborough North – Wokingham – Reading – Tilehurst – Pangbourne – Goring and Streatley – Cholsey – Didcot Parkway – Radley – Oxford – Oxford Parkway – Bicester Village – Calvert – Winslow – Bletchley – Milton Keynes
- 2tphR Bristol Temple Meads – Bath – Chippenham – Royal Wootton Bassett – Swindon – Oxford
- 2tphR Oxford – Oxford Parkway – Bicester Village – Haddenham & Thame Parkway – Princes Risborough – High Wycombe – Gerrard’s Cross – South Ruislip – Old Oak Common – Paddington (Chiltern)
- 2tphRS Oxford – Oxford Parkway – Bicester Village – Launton – Marsh Gibbon & Poundon – Calvert – Claydon – Verney Junction – Swanbourne – Bletchley – Bedford St. John’s – Willington – Bluntham – Sandy – Potton – Gamlingay – Old North Rd. – Lord’s Bridge - Cambridge

We need to analyse closely the timings between Reading and Oxford, since six services share this section, and we must ensure that they can all be fitted in. (Again, see the ‘GWML Service Plans’ article for full details; not all the services are relevant in the present context.) From the current timetable, the various timings are:

Reading	00:00						
Didcot dep	00:12	00:00	00:00	00:00	00:00	00:00	00:00
Foxhall Junction	00:00						
Appleford					00:05	00:05	
Culham					00:08	00:08	
Radley	00:03	00:03	00:04	00:05	00:12	00:12	
Kennington Junction						00:17	
Oxford	00:22	00:10	00:10	00:12	00:14	00:21	00:22

As always, an *italicised* time is an estimated passing time. We likewise need to analyse closely the timings between Oxford and Banbury / Moreton-in-Marsh. From the current timetable, the various timings are:

Oxford	00:00	00:00	00:00	
Wolvercote			00:03	
Kidlington			00:08	
Bletchington			00:11	
Tackley	00:09	00:13		
Heyford	00:13	00:17		
Fritwell & Somerton		00:23		
Aynho	00:11	00:26		
King’s Sutton	00:22	00:30		
Banbury	00:15	00:28	00:34	
Oxford	00:00	00:00	00:00	00:00
Wolvercote			00:03	

Yarnton				00:06
Hanborough	00:09	00:09	00:11	
Combe		00:12	00:14	
Finstock		00:18	00:20	
Charlbury	00:16	00:23	00:25	
Ascott-u-Wychwood		00:28	00:30	
Shipton		00:32	00:34	
Kingham	00:25	00:37	00:39	
Adlestrop			00:43	
Moreton-in-Marsh	00:24	00:32	00:44	00:47

The following timings, though plausible, are entirely speculative:

Oxford	00:00	00:00	00:00
Sunderland Avenue			00:03
Oxford Parkway	00:05	00:05	00:06
Islip		00:07	00:08
Bicester Village	00:10	00:12	00:13
Bicester North			00:15

Oxford	00:00
Wolvercote	00:03
Kidlington	00:08
Shipton-on-Cherwell	00:11
Woodstock	00:13

Abingdon	00:00
Radley	00:05

Oxford	00:00
Wolvercote	00:03
Yarnton	00:06
Cassington	00:08
Eynsham	00:11
South Leigh	00:14
Witney	00:18
Curbridge & Ducklington	00:20
Brize Norton & Bampton	00:24
Carterton	00:26
Alvescot	00:28
Kelmscot & Langford	00:31
Lechlade	00:35
Fairford	00:40

Princes Risborough	00:00
Bledlow	00:02
Towersey	00:05
Thame	00:07
Tiddington	00:12

Wheatley	00:16
Horspath	00:18
Cowley	00:20
Blackbird Leys	00:21
Littlemore	00:23
Kennington Junction	00:25
Oxford	00:30

The formerly single track branches to Abingdon, Princes Risborough and Fairford are doubled, to Abingdon throughout, to Princes Risborough at least as far as Wheatley, and to Fairford at least as far as Witney. Beyond those, all stations have crossing loops.

The following representative mini-timetables are built using the above figures:

1. Didcot – Banbury and Moreton-in-Marsh:

	XCBY	XCPN	MiM	GMK	B-O	Ban	XCBM	XCPC	(Ban)	HS-O	XCWY	Hfd
Didcot	-01:55		-01:47	00:00		00:02	00:10			00:15		00:19
Foxhall Jn.					00:03			00:11				00:18
Appleford		-01:56	-01:52			00:07						
Culham			-01:55			00:10						
Radley	-01:58	-01:59	-01:59	00:05	00:06	00:14	00:13	00:14		00:20	00:21	00:22
Kennington Jn.			00:04			00:19			➔			
Oxford arr.	00:05	00:06	00:09	00:14	00:13	00:24	00:20	00:21	00:24	00:29	00:28	00:29
(platform)	(2)	(1)	(9)	(1)	(7/8)	(9)	(2)	(1)	(9)	(7/8)	(2)	(1)
Oxford dep.	00:10	00:11	00:11	00:19	=====	00:26	00:25	00:26	00:26	=====	00:33	00:34
Wolvercote			00:14			➔				00:29		
Kidlington										00:34		
Bletchington						➔				00:37		
Tackley						00:09				00:39		
Heyford						00:13				➔		
Fritwell & S.						00:19						
Aynho	00:22					00:22	00:37					
King's Sutton						00:26						
Banbury	00:26					00:30	00:41					
Yarnton			00:17			=====						
Hanborough			00:22									00:43
Combe			00:25									
Finstock			00:31									
Charlbury			00:36									00:50
Ascott-u-Wychwood			00:41									
Shipton			00:45									
Kingham			00:50									00:59
Adlestrop			00:54									
Moreton-in-Marsh			00:58									01:06

	XCBY	XCPN	MiM	GMK	B-O	Ban	XCBM	XCPC	(Ban)	HS-O	XCWY	Hfd
Didcot	00:25		00:17	00:30		00:32	00:40			00:45		00:49
Foxhall Jn.		00:26			00:33			00:41			00:48	
Appleford			00:22			00:37						
Culham			00:25			00:40						
Radley	00:28	00:29	00:29	00:35	00:36	00:44	00:43	00:44		00:50	00:51	00:52
Kennington Jn.			00:32			00:49			➔			
Oxford arr. (platform)	00:35 (2)	00:36 (1)	00:39 (9)	00:44 (1)	00:43 (7/8)	00:54 (9)	00:50 (2)	00:51 (1)	00:54 (9)	00:59 (7/8)	00:58 (2)	00:59 (1)
Oxford dep.	00:40	00:41	00:41	00:49	=====	00:56	00:55	00:56	00:56	=====	01:03	01:04
Wolvercote			00:44			➔			00:59			
Kidlington									01:04			
Bletchington						➔			01:07			
Tackley						00:39			01:09			
Heyford						00:43			➔			
Fritwell & S.						00:49						
Aynho	00:52					00:52	01:07					
King's Sutton						00:56						
Banbury	00:56					01:00	01:11					
Yarnton			00:47			=====						
Hanborough			00:52									01:13
Combe			00:55									
Finstock			01:01									
Charlbury			01:06									01:20
Ascott-u-Wychwood			01:11									
Shipton			01:15									
Kingham			01:20									01:29
Adlestrop			01:24									
Moreton-in-Marsh			01:28									01:36

Key: ===== terminates

➔ (below a column of timings) continues in a later column

➔ (above a column of timings) continued from an earlier column

(XX) service XX continued from an earlier column

XCBM Cross-Country services Bournemouth – Manchester

XCBY Cross-Country services Bournemouth – York

XCPC Cross-Country services Plymouth – Cleethorpes

XCPN Cross-Country services Plymouth – Norwich

XCWY Cross-Country services Weymouth – York

Hfd Paddington – Hereford service

HS-O Heathrow Shuttle service, Paddington – Oxford

B-O Bristol – Oxford

GMK Gatwick Airport – Milton Keynes service, alternates with HS-O Reading – Oxford

Ban Metro service Didcot – Banbury

MiM Metro service Didcot – Moreton-in-Marsh

2. Abingdon – Woodstock and Bicester; complete metro service:

	MiM	Ffd	Cam	GMK	Wsk	Wit	XCPC	Bic
Abingdon					00:00			00:07
Radley	-01:59			00:05	00:05		00:14	00:12
Kennington Junction	00:04	00:06			00:10	00:13		00:17
Oxford arr	00:09	00:11		00:14	00:15	00:18	00:21	00:22
(platform)	(9)	(9)	(5/6)	(1)	(9)	(9)	(2)	(9)
Oxford dep	00:11	00:13	00:13	00:19	00:17	00:20	00:26	00:24
Wolvercote	00:14	00:16			00:20	00:23		
Kidlington					00:25			
Shipton-on-Cherwell				00:28				
Woodstock					00:30			
Sunderland Avenue					=====			00:27
Oxford Parkway			00:18	00:24			00:31	00:30
Islip								00:32
Bicester Village			00:23	00:29			00:36	00:37
Bicester North								00:39

	Ban	Ffd	O-PW	HS-O	XCWY	Wsk	Wit	XCPN	Bic
Abingdon						00:15			00:22
Radley	00:14			00:20	00:21	00:20		00:29	00:27
Kennington Junction	00:19	00:21				00:25	00:28		00:32
Oxford arr	00:24	00:26		00:29	00:28	00:30	00:33	00:36	00:37
(platform)	(9)	(9)	(5/6)	(7/8)	(2)	(9)	(9)	(2)	(9)
Oxford dep	00:26	00:28	00:28	=====	00:33	00:32	00:35	00:41	00:39
Wolvercote	00:29	00:31				00:35	00:38		
Kidlington	00:34					00:40			
Shipton-on-Cherwell						00:43			
Woodstock						00:45			
Sunderland Avenue						=====			00:42
Oxford Parkway			00:33		00:38			00:46	00:45
Islip									00:47
Bicester Village			00:38		00:43			00:51	00:52
Bicester North									00:54

– repeating at 30 minutes past.

Key: XCPC Cross-Country services Plymouth – Cleethorpes
XCPN Cross-Country services Plymouth – Norwich
XCWY Cross-Country services Weymouth – York
Wsk Abingdon – Woodstock
Bic Abingdon – Bicester North
Wit Wheatley – Witney
Ffd Princes Risborough – Fairford
Ban Didcot – Banbury
MiM Didcot – Moreton-in-Marsh

O-PW Oxford – Paddington via High Wycombe
 GMK Gatwick Airport – Milton Keynes
 HS-O Heathrow Shuttle, Paddington – Oxford
 Cam Oxford – Cambridge

3. Princes Risborough – Fairford (all platform 9 at Oxford):

Princes Risborough	-01:56	00:11		
Bledlow	-01:58	00:13		
Towersey	00:01	00:16		
Thame	00:03	00:18		
Tiddington	00:08	00:23		
Wheatley	00:04	00:12	00:19	00:27
Horspath	00:06	00:14	00:21	00:29
Cowley	00:08	00:16	00:23	00:31
Blackbird Leys	00:09	00:17	00:24	00:32
Littlemore	00:11	00:19	00:26	00:34
Kennington Junction	00:13	00:21	00:28	00:36
Oxford arr	00:18	00:26	00:33	00:41
Oxford dep	00:20	00:28	00:35	00:43
Wolvercote	00:23	00:31	00:38	00:46
Yarnton	00:26	00:34	00:41	00:49
Cassington	00:28	00:36	00:43	00:51
Eynsham	00:31	00:39	00:46	00:54
South Leigh	00:34	00:42	00:49	00:57
Witney	00:38	00:46	00:53	01:01
Curbridge & Ducklington	00:48			01:03
Brize Norton & Bampton	00:52			01:07
Carterton	00:54			01:09
Alvescot	00:56			01:11
Kelmscot & Langford	00:59			01:14
Lechlade	01:03			01:18
Fairford	01:08			01:23

– repeating at 30 minutes past.

Representative Hourly Same-Platform Interchange Pattern at Oxford:

00R Paddington – Hereford
 R Weymouth – York
 R Paddington – Oxford (non-same-platform)

07R Bournemouth – York
 R Plymouth – Norwich

15R Gatwick – Milton Keynes
 R Bristol – Oxford (non-same-platform)

23R Bournemouth – Manchester
R Plymouth – Cleethorpes

– repeating at 30 minutes past.

The above gives the connection pattern. To correlate these times with the actual times in timetable no. 1, subtract 1 minute from the time of the first (or only) member of each pair, and 2 minutes from that of the second member, to get the actual times of arrival at Oxford. Thus Paddington – Hereford -01:59 and Weymouth – York -01:58 (or 00:29 and 00:28, or 00:59 and 00:58) and these are the arrival times at Oxford of those services.

Representative Hourly Cross-Platform Interchange Pattern at Radley:

00R Paddington – Oxford
RS Bicester North – Abingdon
RS Abingdon – Woodstock

07RS Abingdon – Bicester North
RS Moreton-in-Marsh – Didcot

09RS Didcot – Moreton-in-Marsh

15R Gatwick Airport – Milton Keynes
RS Bicester North – Abingdon
RS Abingdon – Woodstock

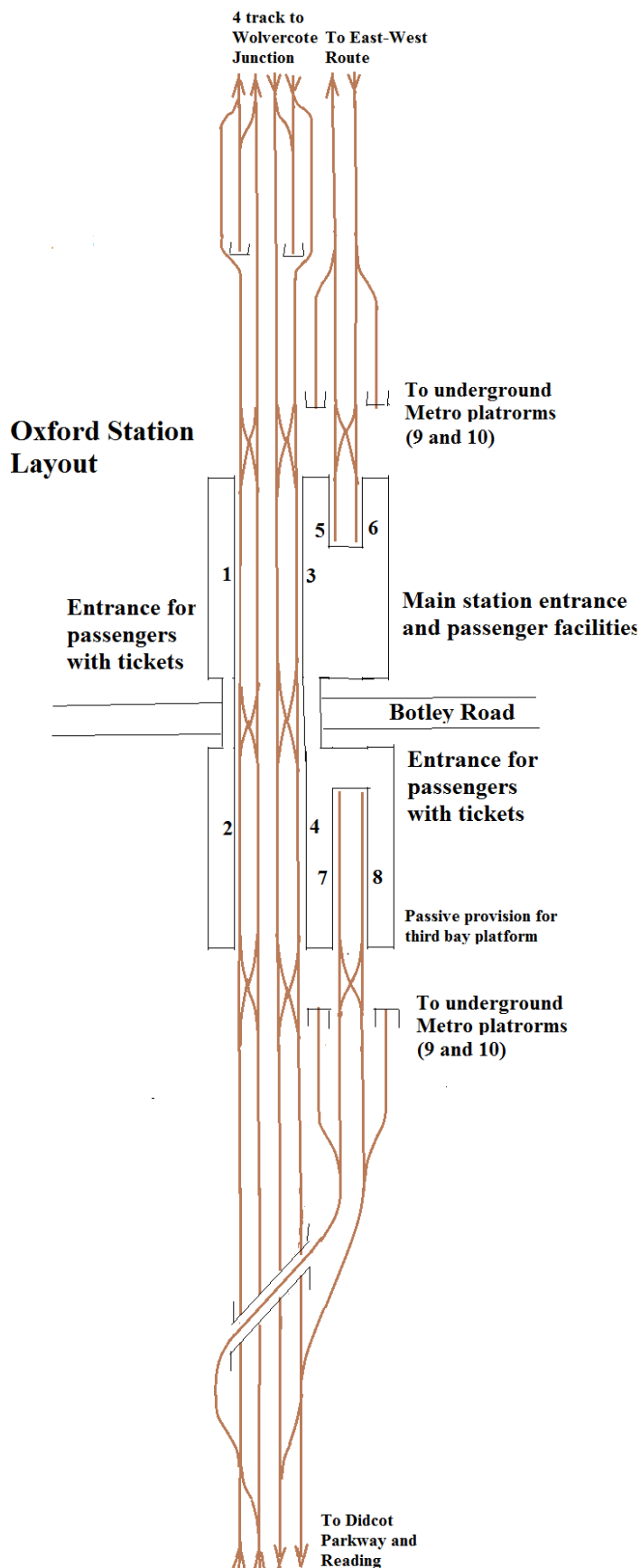
23RS Abingdon – Bicester North
RS Banbury – Didcot

25RS Didcot – Banbury

– repeating at 30 minutes past.

If the contraflow arrangement at Radley has been implemented, (see appendix A,) then the cross-platform interchange is between the first two services in each trio above. If not, then it is between the first and third (necessarily one way only when between two metro services, as at 07/09 and 23/25 minutes past).

Appendix A – Track Layout between Radley Junction and Wolvercote Junction



The most critical location is Oxford station. The layout given here is a development of that originally proposed in the ‘GWML Service Plans’ article, to include the Oxford Metro.

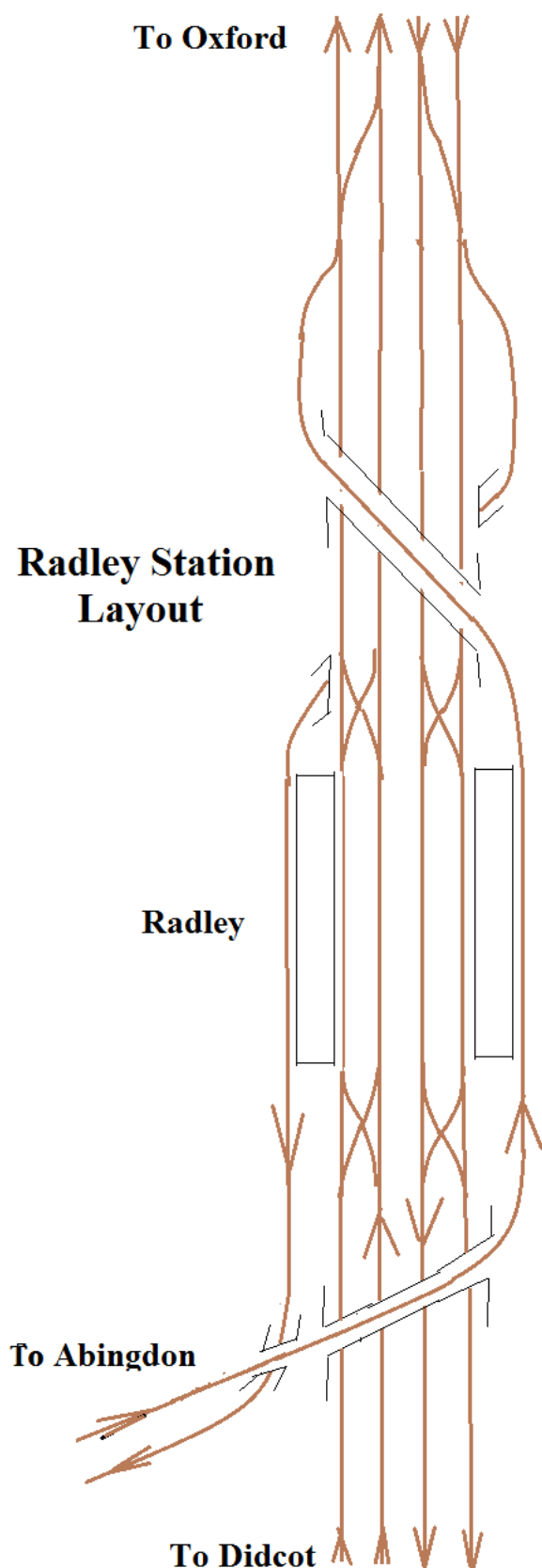
Oxford needs several more platforms. Because of the laterally-constrained site of the existing station, the new platforms should be continuations of the existing two through platforms, on the south side of Botley Road. Scissors crossovers are required at the north and south ends of the platforms, and 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.

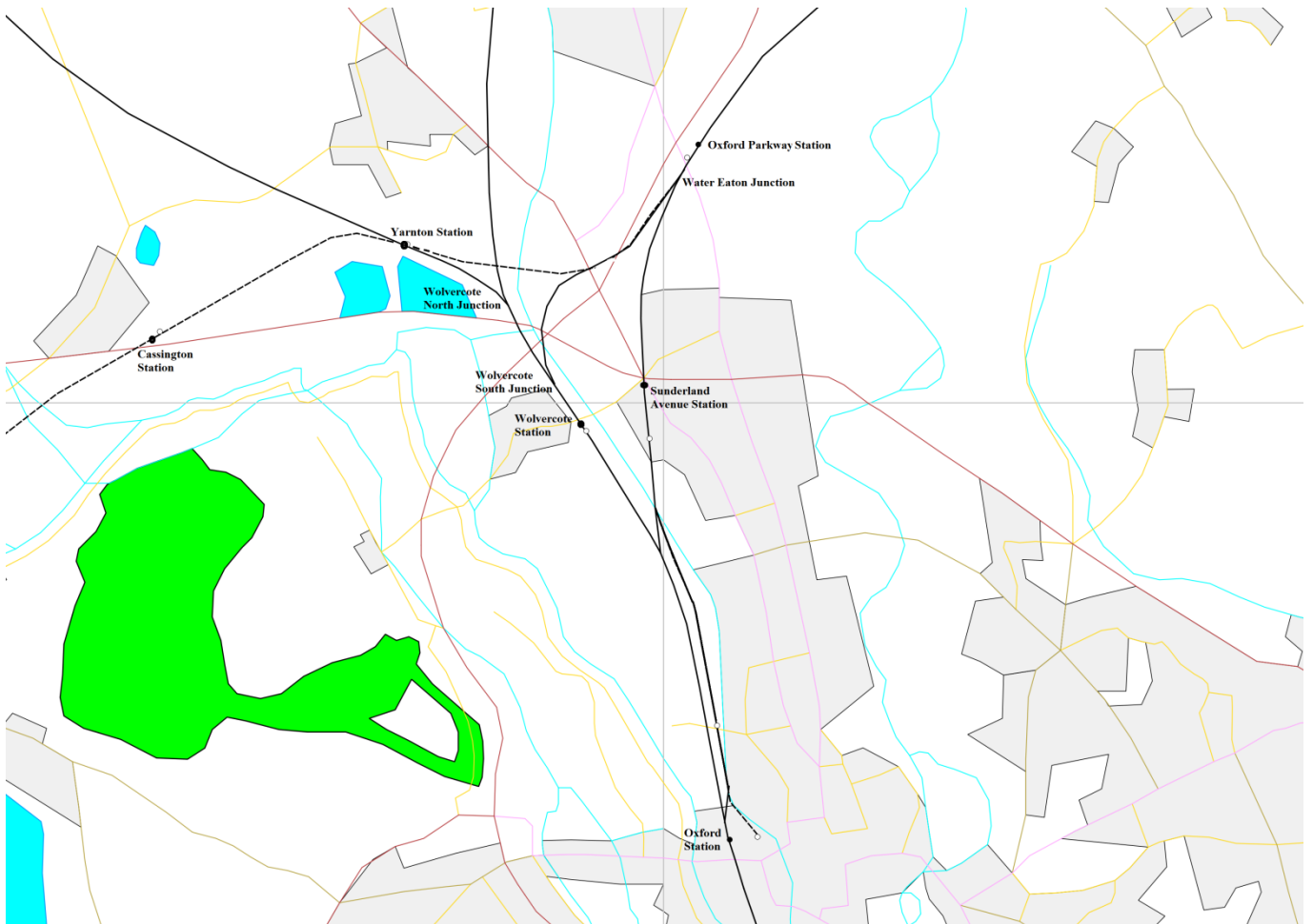
The idea is that the services **from** Abingdon of the Oxford Metro (4tph Abingdon – Bicester North and 4tph Abingdon – Woodstock, alternating,) all make southbound connections at Radley, (to the 2tph Oxford – Paddington Shuttle / 2tph Milton Keynes – Gatwick Airport, and the 2tph Banbury – Didcot /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