railfuture
EAST ANGLIA

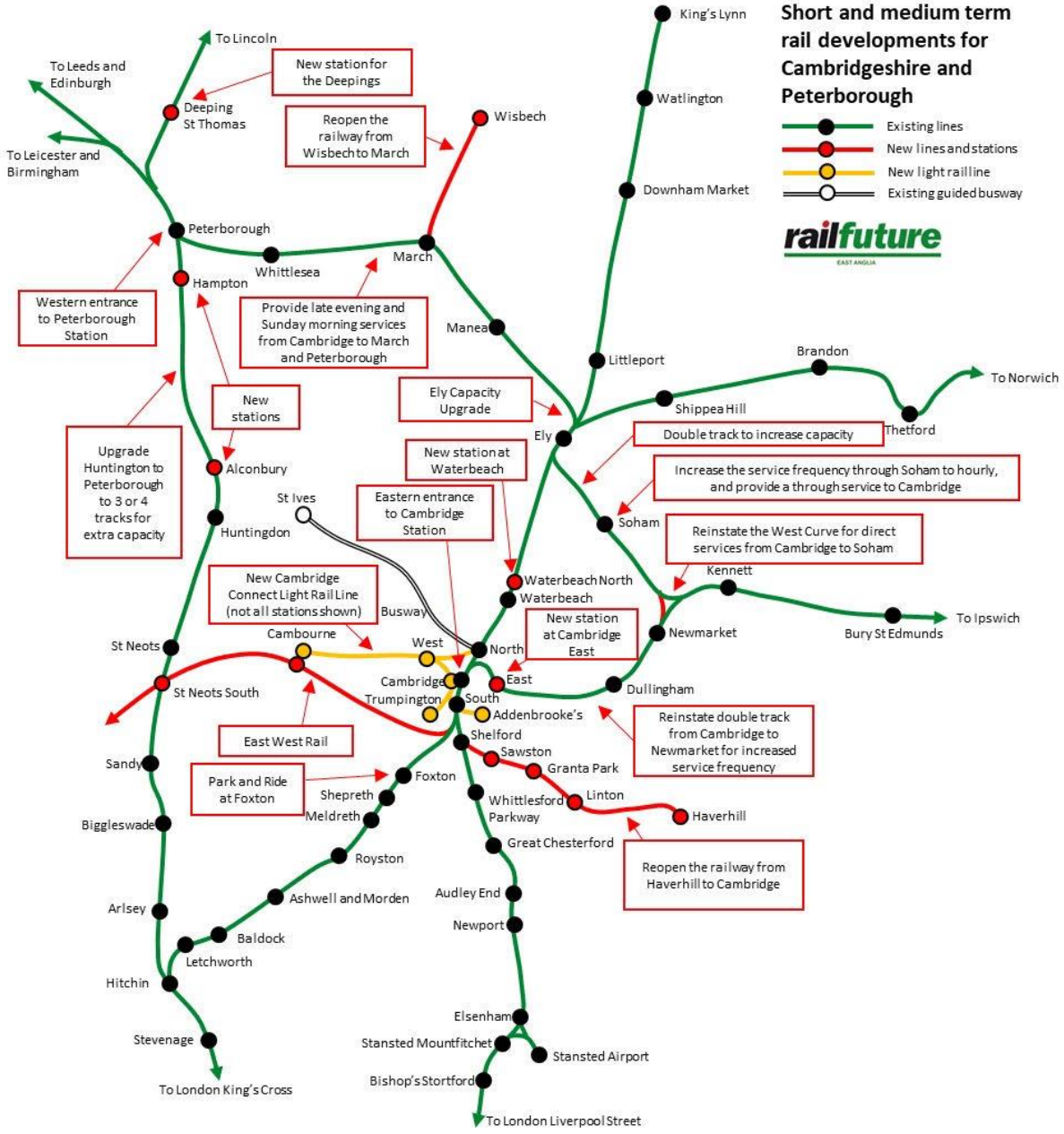
Railfuture East Anglia and the Cambridgeshire railway network

Railfuture is the UK's leading independent organisation campaigning for better rail services and is a voluntary group representing rail users with 20,000 affiliated and individual members. Railfuture wants a bigger and better railway to serve Cambridgeshire's fast-growing population and the associated economy.

Here we set out how the railway can enable that growth to develop sustainably as well as help mitigate some of the downsides of growth.

The railway network within Cambridgeshire and its adjacent regions

Map 1 shows the extent of the local network and the additions needed both to unblock constraints on capacity and to enlarge it.



Map1: Cambridgeshire Rail Network

All the links between the major nodes of Cambridge, Ely and Peterborough are so well used by train services that they can be described as the backbone of Cambridgeshire's public transport network.

Capacity, sustainability, safety

The railway is the most sustainable way of moving goods in large quantities and people in large numbers at speed and in safety because of the low friction between steel rail and steel wheel. There is little “rolling resistance”.

The railway is a developing technology since its inception in a modern form 200 years ago.

No other transport system can match a railway’s capacity with so little land take.

The population of Cambridgeshire and adjacent regions is growing fast and only rail can cope with current and future demands for mobility.
The table below shows the population of all the Districts in the East of England recorded in the 2021 census. Cambridgeshire and adjacent areas have seen high growth over 10 years between 2011 and 2021.

District/Council	Population 2021	% increase 2011-21	Population increase	Population per km^2
Bedford Borough	185.3k	17.7%	27.9k	389
Cambridge	147.7k	17.6%	22.1k	3580
Peterborough	216.0k	17.5%	32.2k	628
Central Beds	292.0k	15.5%	39.2k	411
Uttlesford	91.0k	14.9%	11.8k	142
South Norfolk	142.0k	14.4%	17.9k	156
Colchester	193.0k	11.3%	19.6k	587
South Cambridgeshire	162.0k	8.9%	13.2k	180
Norwich	144.0k	8.7%	11.5k	3690
Breckland	141.5k	8.4%	11.0k	108
Fenland	102.5k	7.6%	7.2k	188
Tendring	148.1k	7.3%	10.1k	440
Huntingdonshire	182.0k	6.7%	11.4k	200
Stevenage	89.0k	6.6%	5.5k	3446
Mid Suffolk	102.7k	6.2%	6.0k	118
Broadland	131.7k	5.3%	6.6k	239
West Suffolk	180.0k	5.3%	9.1k	174
Babergh	92.3k	5.2%	4.6k	155
North Hertfordshire	133.2k	4.8%	6.1k	355
Ipswich	139.9k	4.7%	6.3k	3536
East Cambridgshire	87.7k	4.6%	3.9k	135
King’s Lynn and W Norfolk	154.3k	4.6%	6.8k	107
Great Yarmouth	98.8k	2.8%	2.7k	573
East Suffolk (*)	246.0k	2.6%	6.2k	195
North Norfolk	103.0k	1.5%	1.5k	101
Total	3705.7k		300.3k	

*East Suffolk + Suffolk Coastal.

Future Demand for Mobility

National and regional housing policy and industrial strategy will see the growth continuing.
Past growth is reflected on the railway, where passenger numbers increasing by 4% year on year for at least 10 years have been absorbed by running longer trains on all routes. But on some routes, where only one train an hour each way is operated, more services an hour are needed now.
Map 1 shows where capacity constraints at the three main nodes need to be addressed to enable that to happen.

There are other imperatives – the most important is managing climate change

We have noted that the railway is the most sustainable mode of transport.
Adding climate change mitigation to that of managing sustainable growth means there is the urgent need to create conditions for faster modal shift from road to rail.

Each route should have a minimum of 2 trains per hour (tph) in each direction to provide an attractive service frequency **and average speeds** that will rival or better the equivalent car journey – with longer end to end services between important nodes having few stops plus a second-tier service to cover extra shorter distance stops.

The railway must match a parallel road journey with a frequent and fast service to be successful.
For example, between Ely and Cambridge the average speed for the 24 kms to Cambridge Central from Ely station is faster than any road journey. Over 42% of all journeys between the two nodes are by rail simply because the railway provides **a fast frequent service** all day long, early until late.

Where there is capacity to do so, the railway can operate a three-tier service level.
Between Cambridge Central and London King's Cross a non-stop service operates every half hour, a second-tier service operates calling at just six major settlements between them every half hour whilst a third links all settlements along the route at half hourly intervals.

There are gaps in the network

To enable the network to work harder the significant gaps in its capacity must be remedied.
The major gaps are at Ely's junctions, at Cambridge station and the link between Cambridge and Newmarket.

See map 1 again above, showing the current network in green and the gaps in it shown by the red lines and red boxes.

These must be addressed for the railway to increase its share of the market.

Gap 1

At Ely, five major railway routes join so more track is planned to enable all the services needed.
Ironically, much of the work needed is simply to replicate the track provided up until 1985 when it was "rationalised".
The plans to reverse past decisions are made but await funding.

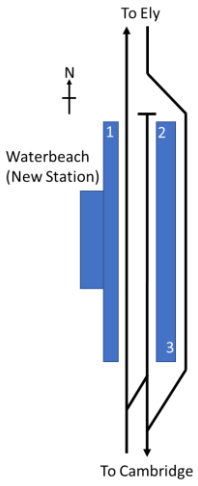
But the situation is so urgent at Ely that the planned additional freight trains can't run – when they can take 1000 HGVs off the A14 trunk road that cuts through all of Cambridgeshire including Cambridge City – 1000 each day! (Source CILT).
More broadly the irony continues. The CPCA has plans to increase the capacity along the A10 road that parallels the Ely - Cambridge railway – in theory this will weaken the railway's current competitive edge. Local authority planners must ensure that different policies are properly coordinated and that they don't work in silos.

Gap 2

At Cambridge, its stations have seen the amount of track increased to cope with continually increasing demand. New platforms have been built, more track through the station provided. Just as important are the new stations being provided at Chesterton "Cambridge North" and at the Bio Medical Campus "Cambridge South".
Currently over 12 million people annually use Cambridge Central and North stations. This is expected to rise rapidly to between 15 and 20 million over the next few years.
Cambridge South will have adjacent to it 50,000 jobs, a large 6th form college, five major regional hospitals. Millions more users will come onto the network through South station.
But more is needed of Cambridge Central.
Already 20 trains arrive and depart from / to the south each hour, with 10 each hour from /to the north. More in the peak hours.
And then a metro frequency of trains will arrive from the south with East West Rail… 4 more trains each way every hour.

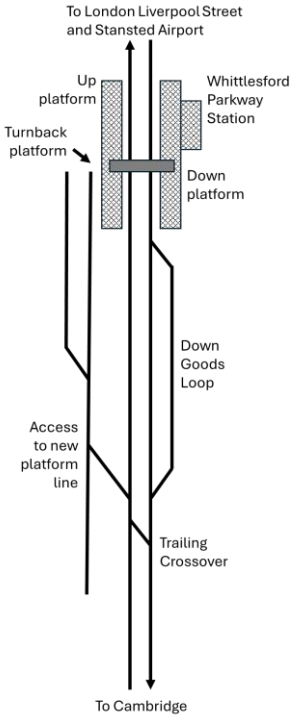
We urge the planners not to start or terminate any train at Cambridge Central.
They all need to carry on to finish their journeys, then return from less congested stations with "turnback" platforms. It is vital to complete the four tracking of the route through the station all the way from Coldham Lane Junction to Shepreth Branch Junction.

We suggest:
Waterbeach New Town station to turnback stopping trains (see track diagram with turnback in platform 2) from the Royston direction. Not only does this release valuable capacity at Central station, it gives a cross city service from the southwest part of the county and beyond. Waterbeach will be home to nigh on 50,000 people eventually.



We suggest:
East West trains continue west onto a new station in Cambridge to turnback at East Station. Another cross-city service is thus created - Bedford - St Neots - Cambourne - Cambridge South, Central, East. The latter to serve the massive employment centres nearby at ARM, Peterhouse Research, Capital Park… and then the Cambridge Airport development.

We suggest:
Whittlesford Parkway station has capacity to add a turnback platform (see track diagram) to enable trains from Ipswich to cross Cambridge East, Central and South stations.



Already the trains from Essex and northeast London run through Whittlesford - Shelford - Cambridge South to Cambridge Central to Cambridge North station, together with hourly trains running Norwich - Ely - Cambridge North - Central - South - Whittlesford - Stansted Airport, Peterborough - Ely - Stansted Airport... cross city.

So - speed up and increase capacity across the city
Keep the trains moving - just pause at Central station then "off again" to create cross-city services wherever possible.
No other mode will match the speed and capacity provided by the railway.
10 minutes maximum from Waterbeach New Town - South Station's Bio Medical Campus
10 minutes Cambourne - Bio Medical Campus & Long Road Sixth Form college
7 minutes Cambridge North - Bio Medical Campus.

Gap 3

The Cambridge - Newmarket line is an incredibly important asset that simply is unable to do more, as it is but a single line from Coldham Lane Junction to Newmarket. With amazing short sightedness, the second track was removed 30 years ago.
This second line must be restored not just from Coldham Lane Junction but further south from Mill Road Junction all the way to Newmarket.
This will enable any number of trains (we suggest a minimum of 4 an hour) to operate east of Cambridge to provide a modal transfer from road to rail along the A14 East Corridor. More than that, with the restoration of the short chord from Snailwell (Junction) to Newmarket Warren Hill (Junction), the provision of a new train service from Ely - Soham - Newmarket -Dullingham to Cambridge East - Cambridge Central- Cambridge South - Shelford - Whittlesford Parkway becomes possible.
There is rapid housing growth all along this route, together with the immensely important cultural activity in and around Newmarket's horse racing industry.

Gap 4

As important in all the gaps is the need for a railway from Cambridge to the west.
East West Rail.

This new railway is already open between Oxford and Bicester. A frequent new train service linking the two gives a taste of what is to come for us. Large numbers have transferred from the parallel trunk road to rail for local journeys over the 15 miles or so. Speed and frequency the key.

The second part of the route from Bicester through Winslow to Milton Keynes is complete and will open for service soon.

The third part is already operating from Milton Keynes to Bedford and will receive an upgrade to enable trains to run on to Cambridge when the extension is built from Bedford onto St Neots - Cambourne - Cambridge South via Shepreth Branch Junction.

The planned service level from Bedford to Cambridge is a minimum of four trains each hour each way. Two will run onto Oxford via Milton Keynes - Winslow - Bicester, two to Milton Keynes. All places along this route are of huge economic importance. The railway has helped attract a large new employer to the Bedford area station of Stewartby in the form of Universal Studio's Theme Park. 20,000 people will work there.

The station at Cambourne will revolutionise travel from the town to Cambridge as trains will run directly to Cambridge South with its huge number of jobs and 5 hospitals, sixth form college; Cambridge Central with its huge number of jobs and sixth form college, and Cambridge East with its huge number of nearby jobs.

One important omission in the planning is the lack of a station to serve the 40,000 people who live in St Neots. This must be remedied! The CPCA and local authorities have taken their collective eye off the ball in this regard.

This new railway is for the next 200 plus years. It is for the younger generations who will not forgive the current generation if the planning for it is influenced by those who are against sustainable transport that will enable huge modal switch from road to rail and serve areas of high growth, enable the railway to work efficiently, provide in the longer term through seamless journeys from east of Cambridge west across the south midlands to the West Country.

We fully support the route planned by EWR from Bedford to Tempsford - St Neots - Cambourne - Cambridge South - Cambridge Central - Cambridge East.
It is all about the future.

East West Rail … frequency, speed, connectivity
The railway is strongest when it operates as a network.
Frequency over all the various links of the network enables use of the network via connections at the major nodes to be easy.
It is important to remember East West Rail isn't just about Oxford - Milton Keynes - Bedford - Cambridge.
Thousands of journeys that are just not possible now will be available via connectivity at Norwich, Ipswich, Cambridge, Tempsford, Bedford, Milton Keynes stations, Bicester, Oxford, Swindon, Bristol.

For example, using the map below note how these journeys will be possible

- Cambridge to Biggleswade via Tempsford;
- Cambridge to Luton Airport via Bedford;
- Kettering to Oxford via Bedford;
- Bedford to Leighton Buzzard via MK -Bletchley.
- Peterborough to Oxford via Tempsford.

East West Rail will evolve - for example Network Rail is planning a new curve "as a priority" from east to north at Milton Keynes to allow through trains twice an hour from south Cambridgeshire to Northampton, Coventry and Birmingham.

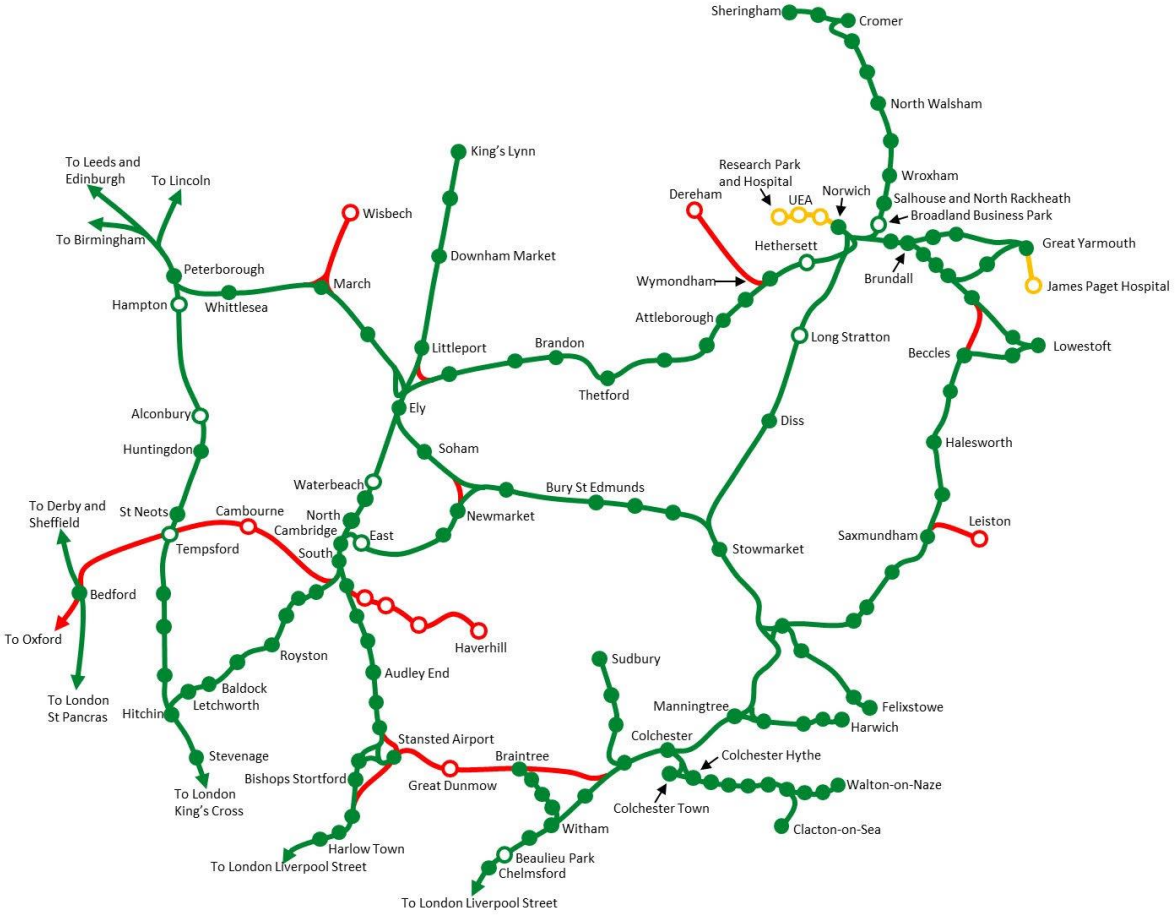
Map 2 shows some of the connectivity that will be available from Cambridge South with just one change.

Map 2: Cambridge South connectivity

Gap 5

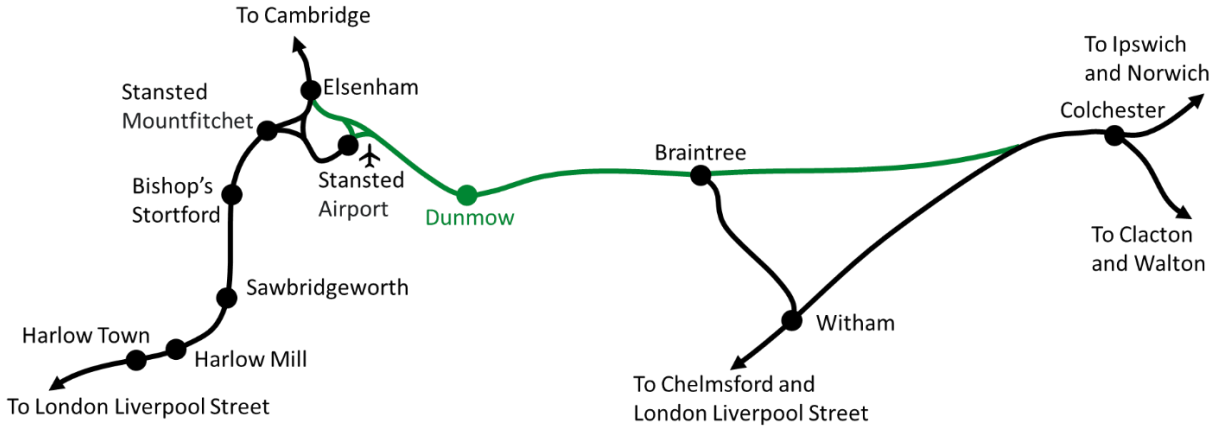
Other gaps in the network are links to Haverhill and Wisbech.
Again, our research has shown that given speed and frequency, there are thousands of potential journeys ready to transfer to rail if those two relatively short links were to be restored.

Map 3 reaffirms the new connections that should be provided to make the network a much better performing one for more regional journeys.
We are especially excited by the findings from our research by well-known consultants, that a link from Stansted Airport east to Braintree and near Colchester would, among many journey enhancements, allow frequent fast services between Cambridge and Colchester and Cambridge to Chelmsford.
This will serve to distribute some of the economic developments around Cambridge's universities to those in Colchester and Chelmsford as well as to Norwich, Peterborough and Ipswich.
We judge it would be just 50 minutes in journey time from Cambridge to Colchester.
Huge and currently unsustainable housing growth is taking place between Braintree and Stansted Airport. This railway will make thousands more people have easy access to the railway.



Map 3: New Lines

Huge unsustainable housing growth is taking place between Braintree and Stansted Airport. This railway will make thousands more people have easy access to the railway. Services twice an hour Cambridge to Dunmow - Braintree - Colchester / Chelmsford?



Map 4: New railway for Stansted, Braintree and Colchester

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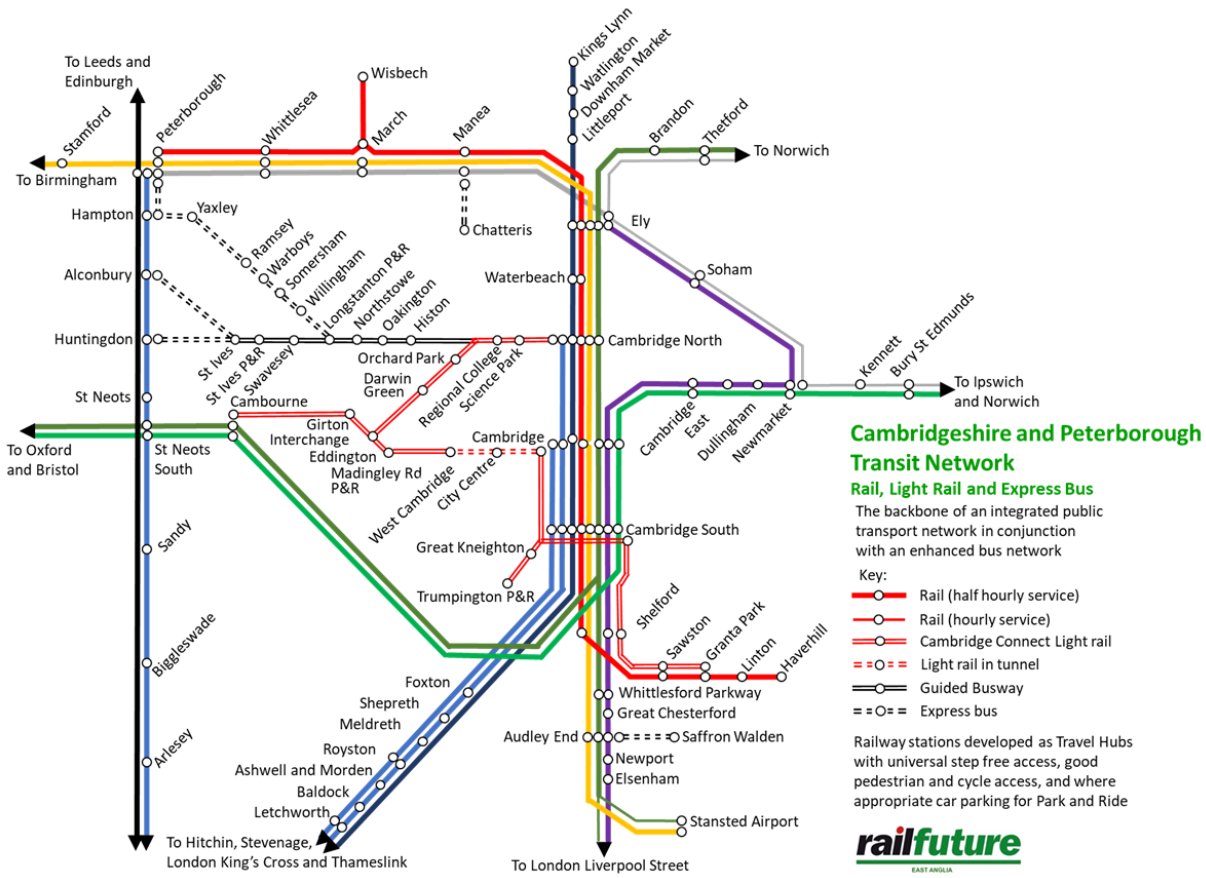
Details of an aspiration for an East Anglia Railway Network for the future

The local authority and railway company should aim for:

1. Frequent fast services from each station. Two trains an hour minimum on every line all day long, early to late. The 20 Cambridgeshire stations must all be upgraded to modern easy to use travel hubs. Every rural station to have easy to use, free car parking.
2. Every station must be linked to its catchments by high quality active travel routes: train+bike+walking.
3. Every station must be the centre of its district with bus links and be secure for all users.
4. Every new housing development to be linked to its station from its inception.
5. Existing parts of the settlement gradually “retro-fitted”.
6. High quality cycle storage must be provided.
7. Bike and train are natural partners… each make the other's range larger.
8. Work to develop intermodal Smart Cards for all fares.
9. The designated Strategic Travel hubs of train, bus, car, bike and walking to be staffed from first to last service. Safe bike storage. Café. Shops. Free car parking for local trips.
10. New stations at Waterbeach New Town; Cambridge East; St Neots EWR; Cambourne, to be provided now to enable easy access to the network from day one of the new town and other developments.
11. Keep Waterbeach Village station - serve it with 2tph Waterbeach New to Potters Bar etc stopping trains.
12. A new station should be provided at Alconbury to serve it and the very considerable developments expected around Huntingdon.
13. A northern suburban station must be provided in Peterborough on the Spalding line
14. A southern suburban station must be provided in Peterborough near Hampton.
15. Turnback platforms at Waterbeach New, Cambridge East, Whittlesford Parkway planned into the network now.
16. All lines in Cambridgeshire to be electrified.

The diagrammatic Map 5 shows how we see the railway being developed as the core transport network, with strategic bus links into the region between Cambridge and Peterborough that currently have no plans for a rail route.
But we note that although the CPCA is developing plans for a much-needed reform of bus routes within Cambridgeshire, these are local. Experience shows that speed and frequency is vital to enable modal shift from road to public transport and that must be rail.
There has been no effort so far to develop a rail strategy for the Cambridgeshire & Peterborough Combined Authority area and its relationship with the railway. The bus network, the active travel routes, the railway are one. There must be a plan to work to. There is none at the moment. The CPCA and other local authorities must ensure that different policies are properly coordinated and that they don't work in silos.

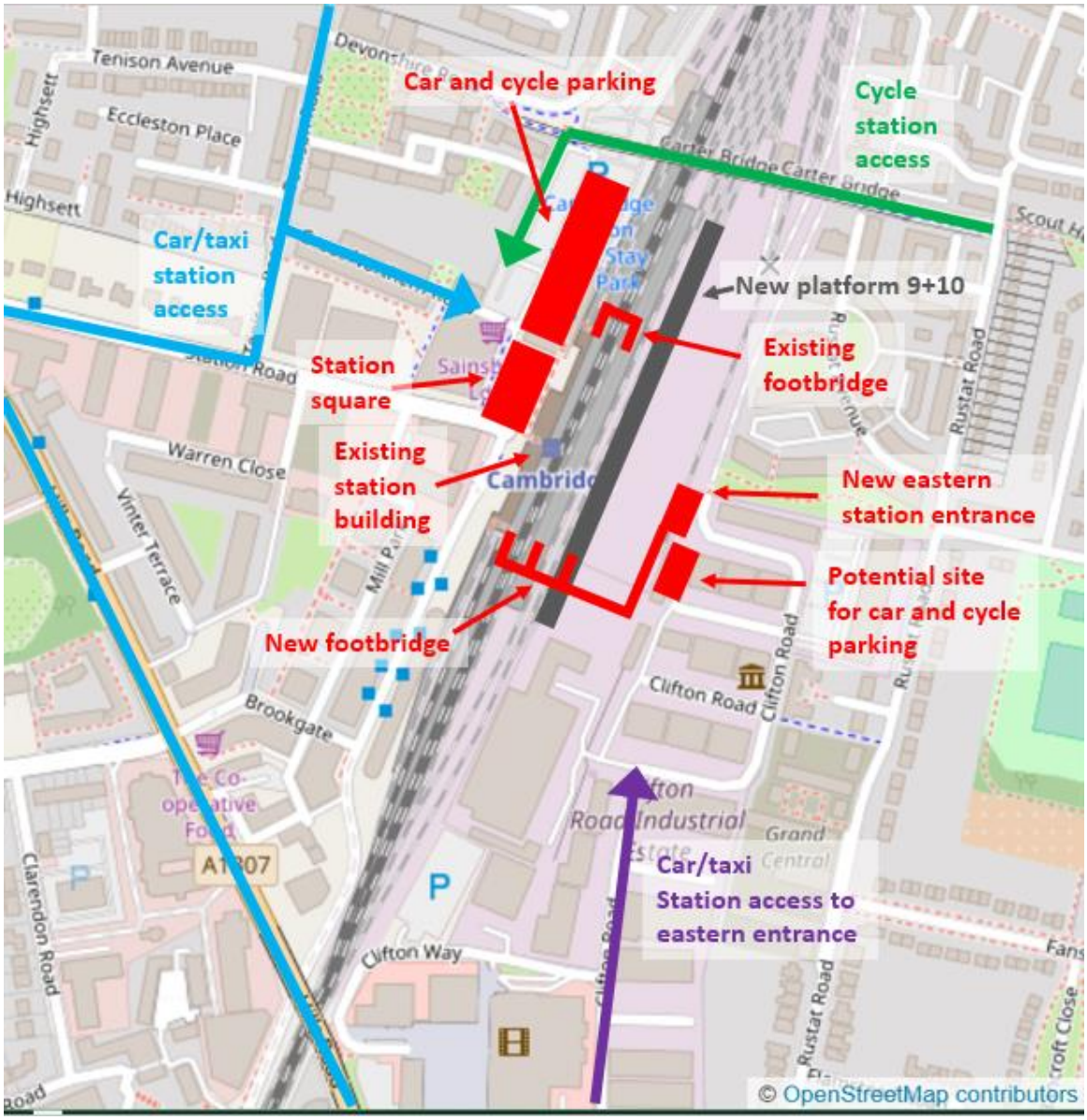
Develop a Cambridge Area light railway network for long term dependable last – first mile transport from the Cambridgeshire Railway Network.



Map 5: Diagrammatic map of a future railway network

Note that vital "but more local" bus routes not shown

Make the railway totally accessible – an eastern entrance to Cambridge Central station urgently needed… since 1905!



Map 6: Cambridge Station Eastern Entrance

We believe that the CPCA must be working directly with adjacent planning authorities so that the active travel routes needed to link the huge development at Hinxton with Great Chesterford (and its necessary redevelopment) in Uttlesford District of Essex, as well as to Whittlesford Parkway, can be built as soon as possible.

Finally, a table showing the future service provision: both ways:

1	Whittlesford- Cambridge South - Cambridge Central - Cambridge East - Newmarket - Bury St Edmunds - Ipswich 2 tph each way
2	Whittlesford- Cambridge South - Cambridge Central - Cambridge East - Newmarket - Soham - Ely 1 or 2 tph each way.
3	Cambridge North - London Liverpool Street via all stations to Cheshunt 2 tph plus one train an hour via Whittlesford - Audley End - Bishops Stortford - Harlow Town - Stratford – London Liverpool Street each way.
4	Norwich / Peterborough**- Ely - Cambridge North - Central - South - Whittlesford - Audley End - Stansted Airport 2 tph each way (** Peterborough - March - Ely - Cambridge Central - South - Stansted Airport)
5	Norwich / Peterborough* - Ely - Cambridge North - Central 2 tph (Peterborough* - Whittlesea- March - Manea - Ely - Cambridge North -Central 1tph)
6	Cambridge North - Central - South - Royston - Ashwell & Morden - Baldock - Letchworth etc - Brighton 2 tph
7	Waterbeach New - Waterbeach Village - Cambridge North - Central - South - Foxton - Shepreth - Meldreth - Royston - Baldock - Letchworth GC - Hitchin - Stevenage - all stations to Potters Bar - London King's Cross. 2 tph.
8	Cambridge East - Central - South - Cambourne - St Neots EWR - Tempsford - Bedford - Milton Keynes etc. 4 tph each way.
9	King's Lynn - Watlington - Downham Mkt - Littleport - Ely - Waterbeach New - Cambridge North - Cambridge Central - Cambridge South - London King's Cross 2 tph
AND	
1	Haverhill - Cambridge
2	Wisbech - March - Cambridge / Peterborough.

Links for further information:
www.railfuture.org.uk/East+Anglia+Rail+Network
www.railfuture.org.uk/East+Anglia+Wisbech
www.railfuture.org.uk/East+Anglia+Haverhill

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