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Cambridge Metro: High quality transport infrastructure for the Cambridge City Deal

City Deal

Cambridge is currently assessing how to invest the initial City Deal funding of £100m which is available for improving transport infrastructure. The city suffers from severe congestion with public transport journeys in the peak often taking half an hour longer than the equivalent off-peak journey. A number of schemes are being assessed; mainly bus priority, park and ride and cycle projects.

Alongside these proposed City Deal schemes, the city will also benefit from a number of planned or proposed rail developments as these will reduce the number of people commuting by car into Cambridge. These include reopening the railway to Wisbech for trains to Cambridge, reopening the railway to Haverhill, opening a new East West railway from Cambridge to Bedford for services to Milton Keynes, Oxford and beyond, and reopening stations at Soham, Fulbourn, Cherry Hinton, and new stations at Science Park, Addenbrooke's and Waterbeach Barracks.

Rail can make a significant contribution to the City Deal aspirations to develop transport infrastructure to allow people to move freely around the Cambridge area, efficiently linking homes to employment as the region grows economically. The following sections describe the current City Deal proposals, then show how the rail network can contribute.

There is a danger that if the City Deal projects are not seen in conjunction with the planned railway improvements and railway aspirations for Cambridgeshire (many mentioned in Cambridgeshire County Council's Local Transport Plan), we will get City Deal projects that duplicate or even seem to be competitive to rail. We urge that planners do not merely dust down previous wish-lists but do a careful analysis of what the nationally funded railway can do for Cambridge that may mean the money from the city bid can be used on a myriad of smaller schemes improving transport around the city and county in ALL its forms.

Current City Deal proposals

The first phase of the City Deal covers 2015 to 2020 with funding of £100m for transport infrastructure. The full set of schemes are shown in Figure 1, with the ones currently prioritised for the first phase shown in Figure 2 and listed below:

- A428 to M11 segregated bus links (est. £13 million)
- A428 route Park & Ride (est. £11.5 million)
- Madingley Road (towards A428 corridor) bus priority measures (est. £34.6 million)
- A1307 corridor (Haverhill) bus priority measures (est. £36 million)
- A1307 corridor additional Park & Ride capacity (est. 7.2 million)
- Histon Road, Cambridge bus priority (est. £4.3 million)
- Milton Road, Cambridge bus priority (est. £23 million)

The second (post 2020) phase of the City Deal is where rail can provide a much better and higher quality solution than the costly road and bus schemes which are currently suggested. The

Waterbeach, Newmarket Road and Haverhill corridors have a proposed spend of £459m on road and bus measures which could be more effectively spent enhancing access to the rail network with station car parking, Park and Rides, station cycle routes and congestion free access from Cambridge railway station to the City Centre.

The £459m of schemes along these corridors are all scheduled to be considered in the second phase of the City Deal, apart from the pair of schemes on the A1307 (Haverhill) corridor:

- A1307 corridor (Haverhill) A1307 bus priority £36.0m
- Additional Park & Ride capacity – A1307 £7.2m
- Newmarket Road bus priority phase 1, Elizabeth Way to Abbey Stadium £54.8m
- Newmarket Road bus priority phase 2, Abbey Stadium to Airport Way £39.8m
- Cambridge radials – Newmarket Road Newmarket Road bus priority phase 3, Airport Way Park & Ride £17.3m
- Ring road bus priority – Addenbrooke's to Newmarket Road £18.7m
- Newmarket Road to Cambridge Science Park Station busway £64.7m
- A10 dualling and junctions £63.4m
- A10 corridor north (Waterbeach) A14/A10 Milton Interchange £66.4m
- Waterbeach Park & Ride £11.5m
- Waterbeach Barracks to North Cambridge busway £46.1m
- Waterbeach new station £33.1m

These corridors are either already served by the existing railway to Waterbeach and Newmarket (with a short new spur to Airport Way) or by reopening the railway to Haverhill proving fast congestion free transport which also avoid the problem of constructing new infrastructure across any of Cambridge's green space.

High frequency local rail

The proposed rail developments listed in the introduction will give Cambridge a frequent service on several major transport corridors for both short and long distance commuters. **These will strongly contribute to the City Deal aspirations to provide fast, congestion free access to the city and should be supported by additional City Deal funded car parks and good safe cycle access.**

The term **Cambridge Metro** is used in this document to indicate services operating at 'turn up and go' frequencies of 4 evenly spaced trains an hour or more. In most cases the future planned rail services will provide this frequency of service, but in some cases would need to be enhanced by additional local shuttle services. Bristol[1] and Devon[2] are both proposing frequent local rail services as part of their urban public transport service.

Most of the rail service enhancements and line and station reopenings are already well established, appearing in the Cambridgeshire County Council Local Transport Plan. However, the enhancements can be taken much further with the help of City Deal funding. The railway can deliver people directly

[1] www.railfuture.org.uk/MetroWest
[2] www.devon.gov.uk/devon_metro_briefing.pdf

to the areas around Science Park, Cambridge Railway Station (CB1), Addenbrooke's, Granta Park, and further afield to Stansted and London.

A couple of new ideas are proposed to open up access on the Newmarket Road corridor where it is clear that the current City Deal proposals are very expensive, and will be difficult to implement with significant risks. The ideas include a station on the Cambridge to Newmarket line at Coldhams Lane, just to the east of the A1134 ring road to give people in the area direct access to the rail network. The City deal suggests a Park and Ride on Airport Way; a spur could be built off the Newmarket line to a new station there served by extended selected service which currently terminate at Cambridge. As an alternative to Airport Way, a Park and Ride could be built further out directly on the Newmarket line.

Figure 3 shows the future rail network across Cambridgeshire, and Figure 4 a map annotated with service frequencies (described in more detail below) and location of main rail connected Park and Ride sites, and Figure 5 shows an annotated map showing the detail of the rail based proposals in the Cambridge area. Most of the services below are broadly aligned with those specified in the Cambridgeshire County Council local transport plan as shown in Figure 7.

A10 Corridor North - Ely to Cambridge 7tph minimum

- Norwich - Cambridge 2tph minimum
- King's Lynn to Cambridge 2tph minimum
- Peterborough to Cambridge 2tph minimum
- Wisbech to Cambridge 1tph minimum

These services would need to run with adequate capacity to provide a metro like frequency between Ely and Cambridge and remove traffic from the A10. **As a part of any City Deal bid extra and adequate car parking must be provided to shorten the length of car trips by intercepting them far out wherever possible at Ely, Manea for Chatteris, March, Wisbech, Littleport, Brandon and Thetford. Good cycle access should also be provided to help bring people to the rail service rather than driving.**

A new station should be built serving the proposed new housing development at Waterbeach Barracks, giving direct access by rail to Science Park, Cambridge station, Addenbrookes and Granta Park.

A14 / A11 corridor East - Newmarket to Cambridge 4tph minimum

- Ipswich - Bury St Edmunds - Newmarket - Cambridge 2tph minimum
- Soham - Newmarket - Dullingham - Cambridge 2tph min minimum

Car journeys on this route should be intercepted at Bury St Edmunds, Kennett, Newmarket, Dullingham with City Bid funded car parks. The City Deal should also drive forward the curve allowing direct services from Cambridge to Soham. In addition to the proposed stations at Cherry Hinton and Fulbourn, a station should be built at Coldhams Lane, and a rail connection should be provided to any new major Park and Rides on this transport corridor.

A10 corridor South - Royston to Cambridge 4tph minimum

- London - Cambridge non-stop 2tph minimum
- London (Thameslink) - Stevenage - Hitchin - Letchworth - Royston - Cambridge 2tph minimum

- London (Thameslink) - Hatfield - Stevenage - Cambridge via all stations from Stevenage 2tph minimum

At least 2 tph should run to Science Park. **Car traffic intercepted at Foxton with a City bid funded car park. Construction of the A10 corridor cycle route to link villages to the stations between Royston and Cambridge.**

M11 corridor South- Audley End to Cambridge 4tph minimum

- London Liverpool Street - Bishops Stortford - Audley End for Saffron Walden - Whittlesford - Cambridge 2tph minimum
- Stansted Airport - Audley End for Safron Walden - Whittlesford - Cambridge 2tph minimum

Intercept road traffic at all stations with City Bid car parks.

Haverhill

A reopened railway to Haverhill served by 2 trains an hour with stations at Linton, Granta Park, Sawton then joining the existing railway for Shelford, Addenbrooke's and Cambridge.

City Centre link

The rail proposals will deliver many more people to Cambridge at the main railway station so public transport links from there to the city centre and other parts of the city need improving, alongside safe, pleasant and efficient routes for cyclists and pedestrians.

Buses are timetabled to run every couple of minutes from the railway station to the city centre and beyond but are prone to severe delays at peak times. A reliable link could be provided by suitable bus priority measures, or for a fast and completely congestion free service a short underground light rail line could be constructed, optionally linked to Madingley Road Park and ride or beyond to serve the housing and university developments in the North West of Cambridge. The route along Madingley Road could be a conversion of the bus priority scheme shortlisted in phase 1 of the City Deal.

These city centre links are shown in Figure 6.

Many people will find cycling an efficient way of reaching places in the city from the railway station. A high quality (safe, direct and quick) cycle route should be provided from the railway station to the city centre along with direct access from the railway station footbridge to the first floor of the 3000 space cycle park. This direct access should at a minimum be available for season ticket holders at peak times.

Light Rail

If a light rail line was constructed under the city then this could be linked with the main rail network at the railway station for through running to destinations to the North and North East of Cambridge. We would urge that when planning bus ways and bus priorities all schemes are capable of an upgrade to light rail to form an eventual city and district network. It is well understood that busways have finite capacity and the next step up in capacity is to light rail. Tram train where trams can also operate through services onto the main rail network is an evolving technology that must always be born in mind as a future possibility as well. Cambridge City has a population of around 135,000 but the numerous satellite fairly densely built-up new 'towns' and large villages within 10kms bring it up to around 300,000. If this population growth continues, light rail may well be the next stop.

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Newmarket and Newmarket Road corridor

The spur to Airport Way is included as one possibility where rail could be used as a means of accessing a major Park and Ride site, and potential future housing developments on the Cambridge Airport site. A station on the existing Newmarket line at Coldhams Lane would also greatly improve access to the rail network for current and future housing in this area.

An alternative to the spur could be to locate a Park and Ride further out from Cambridge, for example half way between Cambridge and Newmarket where the railway crosses the A11, where a rail connection would give greater benefits to travel time by intercepting road traffic further out.

A rail connection would provide particularly efficient journeys to area around Cambridge station (CB1) and future stations at Addenbrooke's and Granta Park. Although rail wouldn't provide a direct link to the city centre, its other direct destinations and ability to provide an attractive alternative to road for passengers in Bury St Edmunds, Kennett, Newmarket, Dullingham would significantly reduce road traffic on Newmarket Road. This would allow bus services to operate freely without the need to spend £200m on bus priority infrastructure serving the Newmarket Road/Airport Way/Coldhams Lane area.

Conclusion

In conclusion, the City Deal should look at the rail network to help clear traffic from Cambridge's roads and get the city moving by:

- Enhance access to stations with good pedestrian, cycle and public transport access, safe cycle storage and adequate car park provision
- Build future Park and Rides at locations which are rail served and with special attention to developing sites where the main roads leading into the city and the railway intercept
- Make sure the rail network is coordinated to produce an attractive, high frequency, service on all routes into Cambridge allowing passengers to efficiently travel to Science Park, Cambridge station and CB1, Addenbrooke's and Granta Park (on a reopened line to Haverhill)
- Develop a fast, congestion free, public transport artery from Cambridge railway station to the city centre, either at street level, or by underground light rail, with a possible extension to Madingley Road and beyond
- Provide bus links into rail services at Science Park station, including an Orbital bus route serving Cambridge Regional College, Orchard Park, Darwin Green and North West Cambridge.
- Where appropriate build bus priority infrastructure in a way which does not preclude conversion to light rail in future
- Look in detail at how rail enhancements can serve the Newmarket and Newmarket Road (e.g a station on Coldhams Lane), Waterbeach (including Waterbeach Barracks), Haverhill (including Granta Park), and East West Rail/Bedford/A428 corridors (including St Neots)

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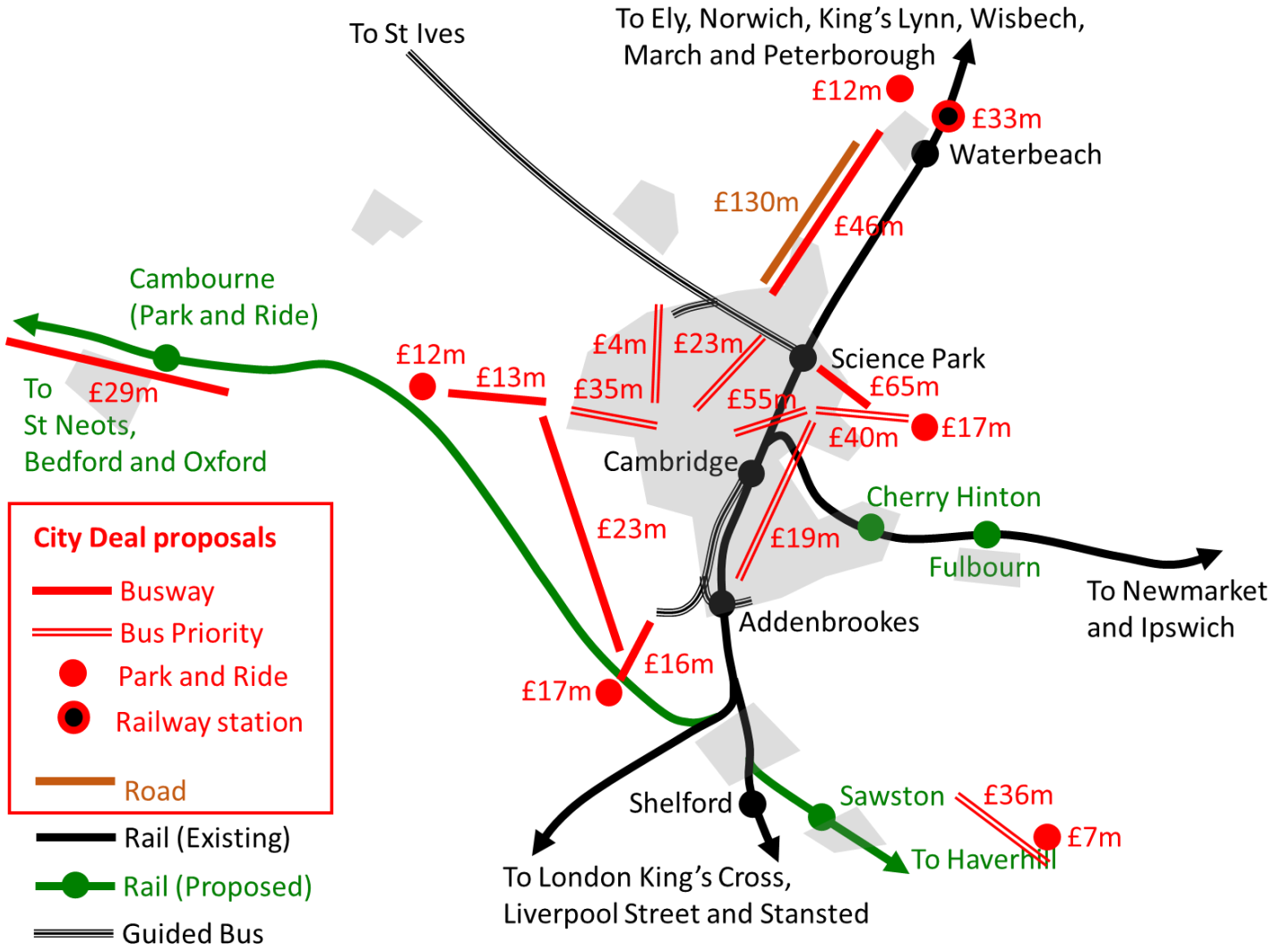

Figure 1: City Deal bus and road schemes and cost estimates

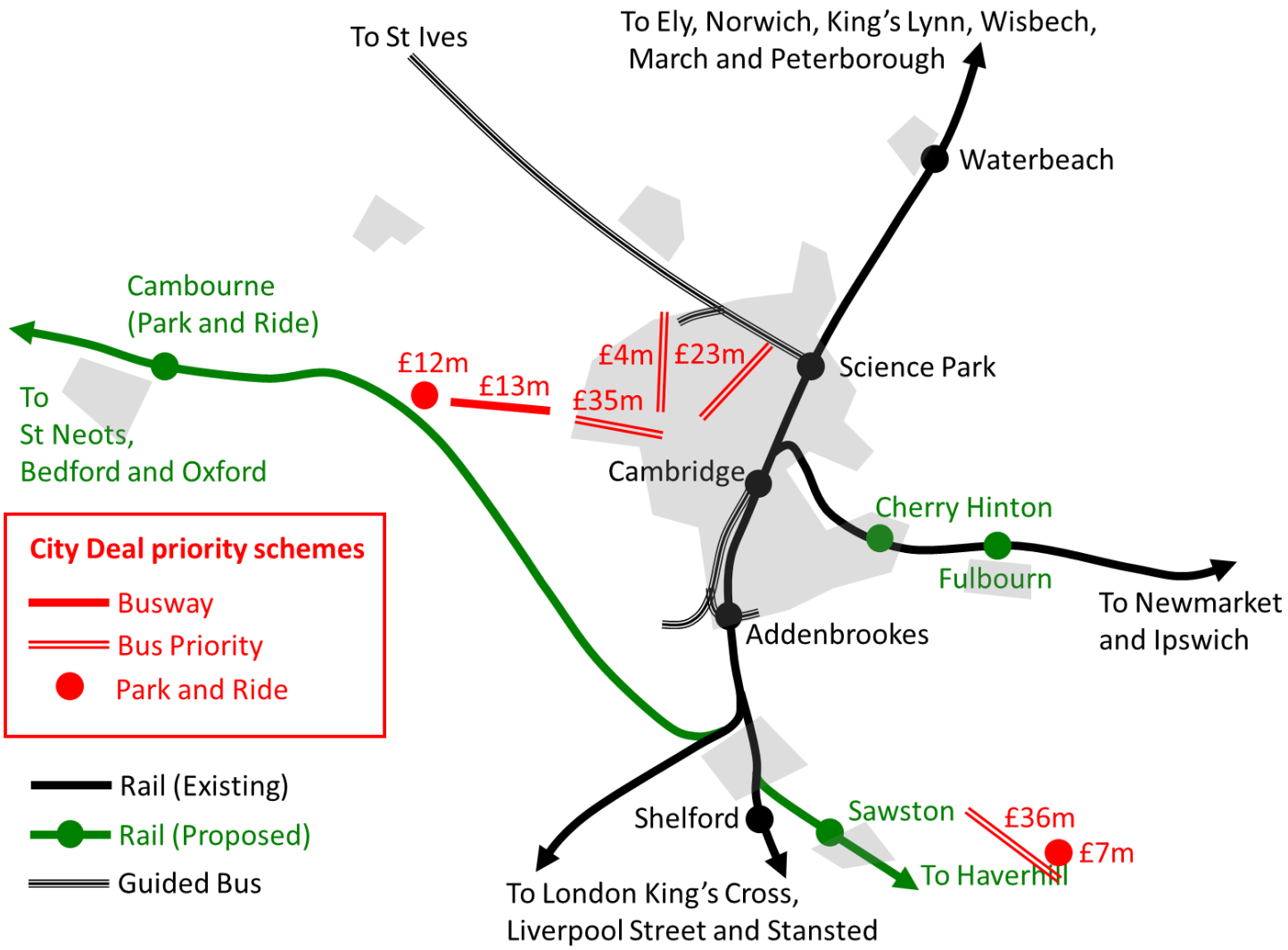

Figure 2: City Deal prioritised schemes for 2015 to 2020

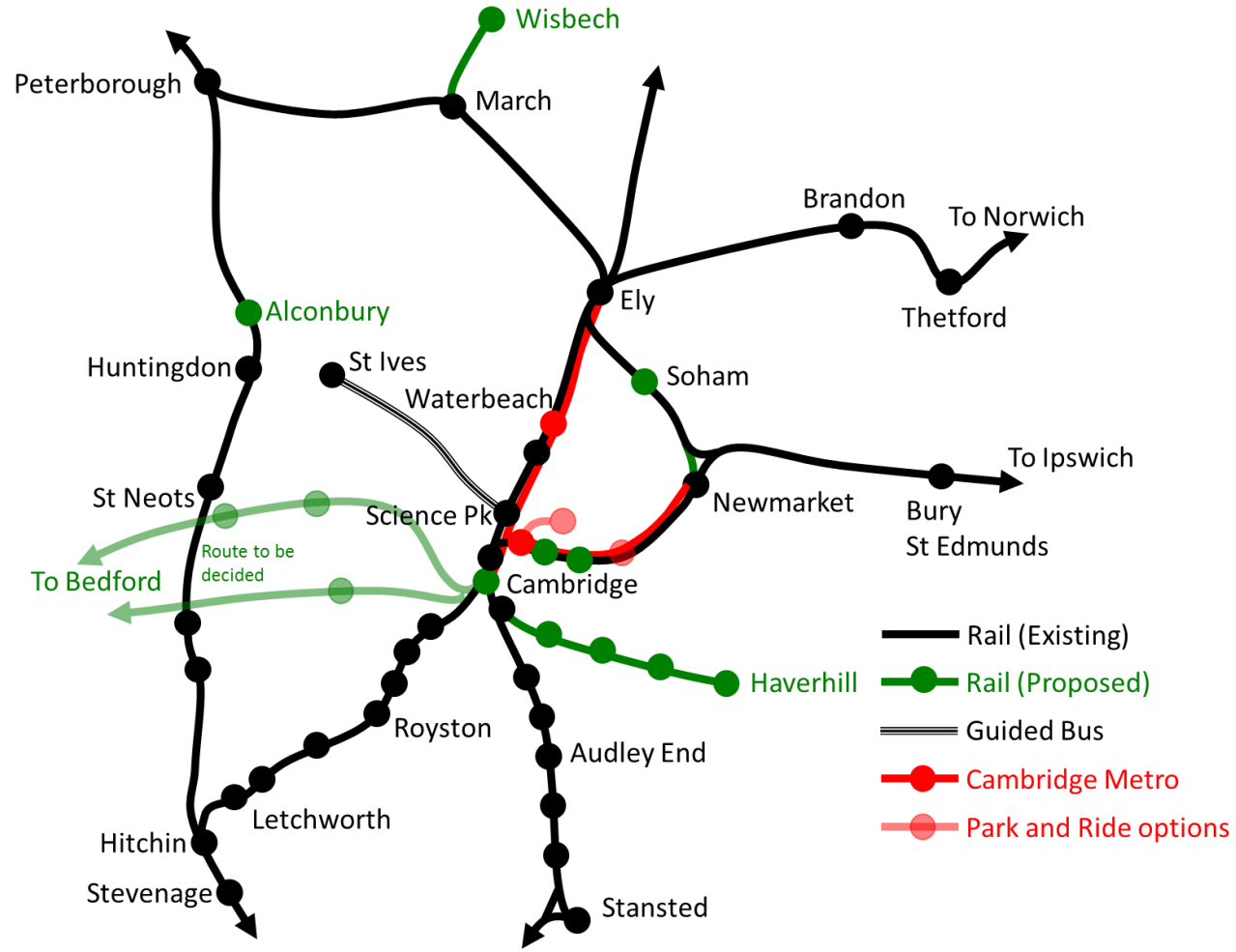

Figure 3: Cambridgeshire rail network

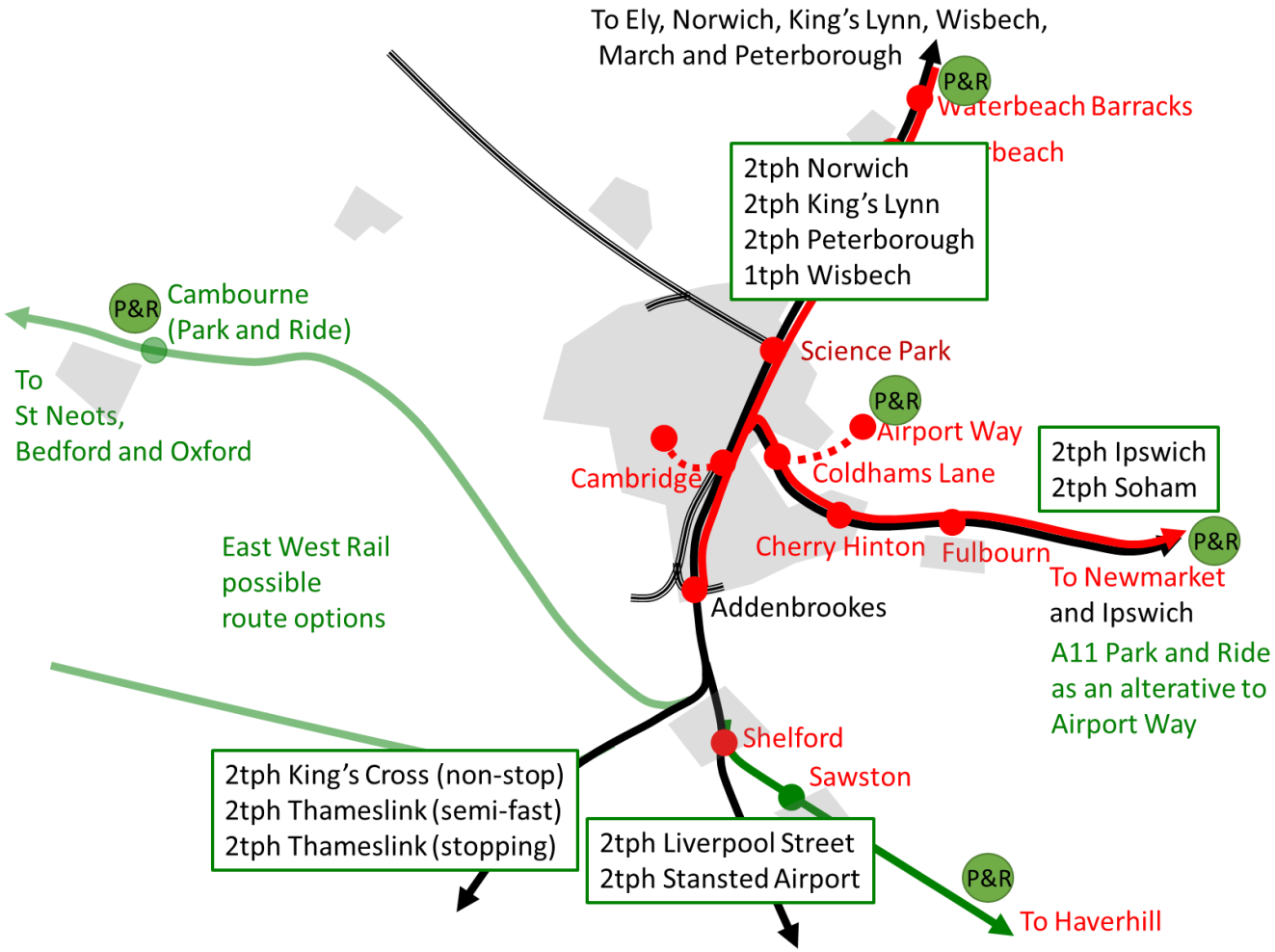

Figure 4: Rail service frequencies and possible major rail served Park and Ride sites

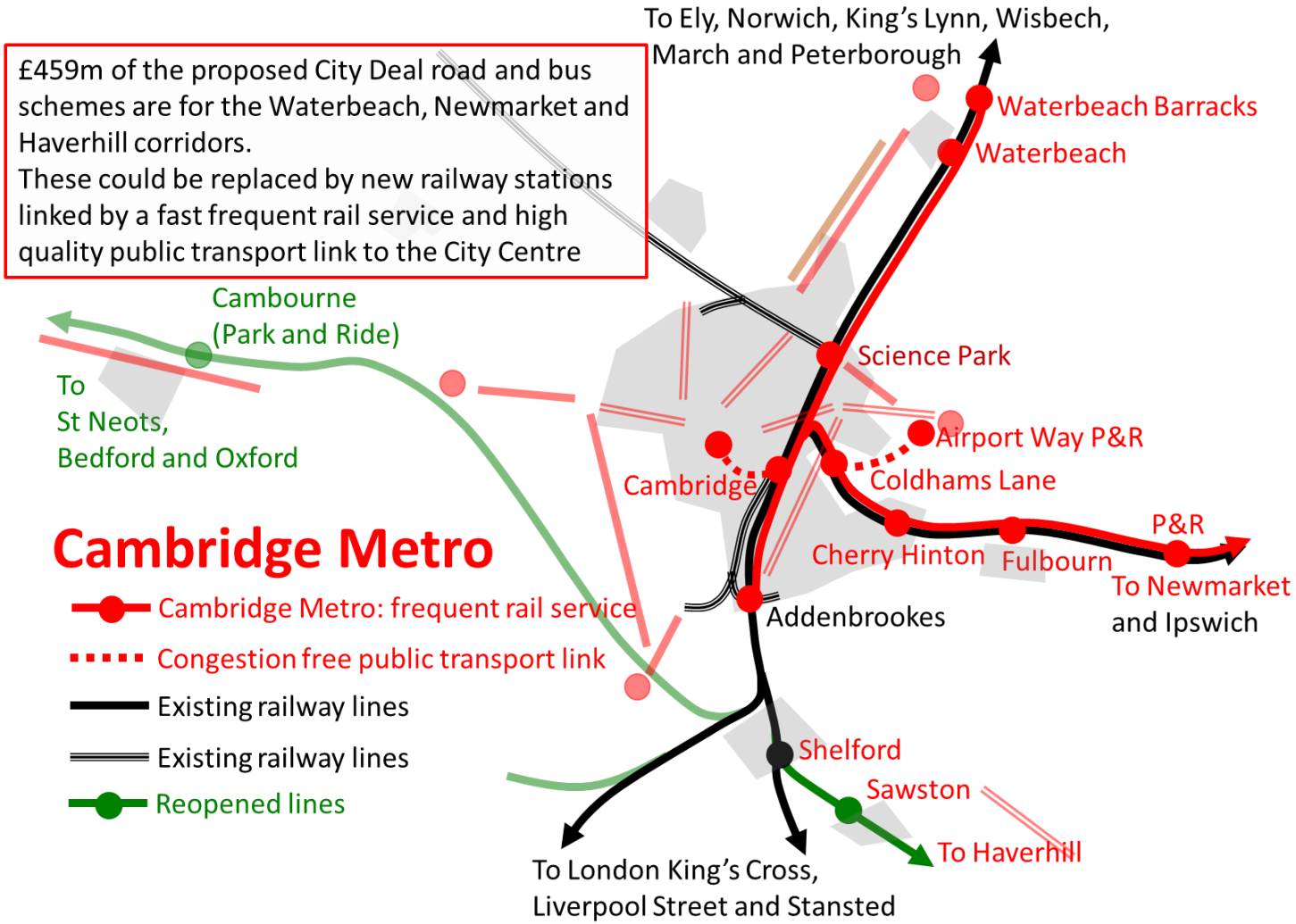

Figure 5: Cambridge rail network on City Deal transport corridors

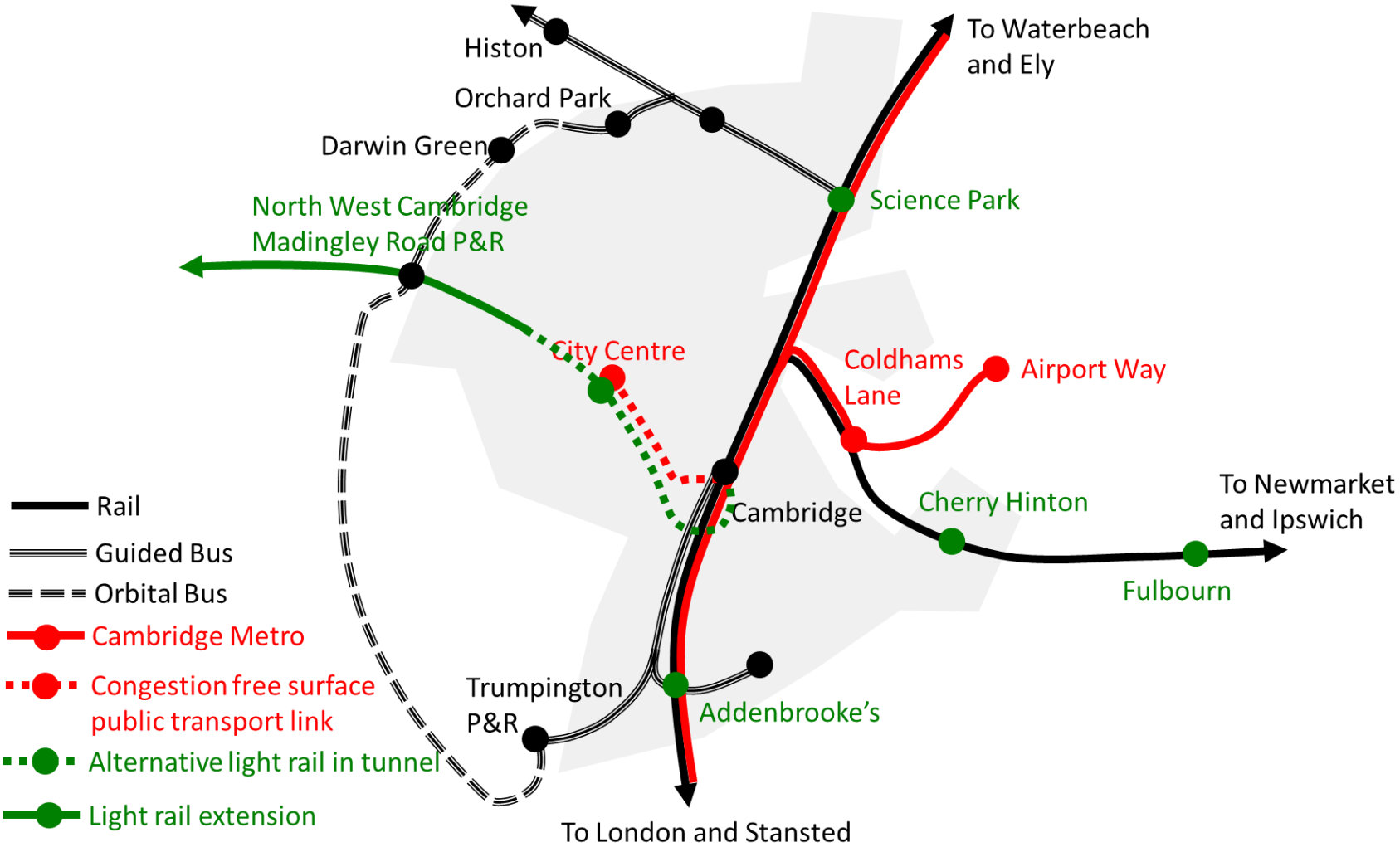

Figure 6: Link to the City Centre

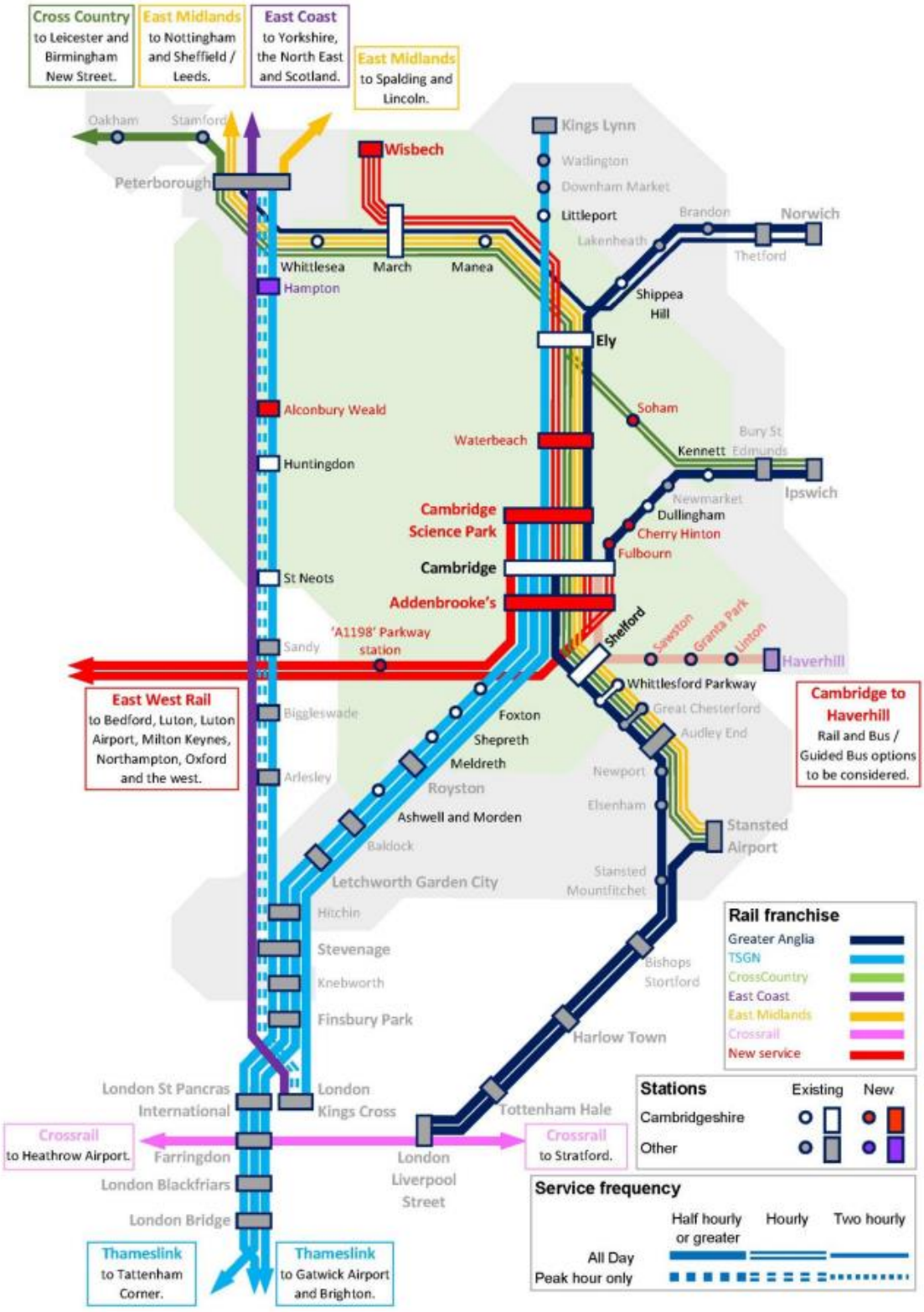

Figure 7: Cambridgeshire County Council Local Transport Plan

Appendix 1: City Deal Individual Infrastructure Schemes

Schemes which were prioritised by the City Deal board on 28th January 2015 for the first phase (2015 to 2020) highlighted in red. Bus and road schemes which relate to the Waterbeach, Newmarket and Haverhill corridors are highlighted in green.

A428 to M11 segregated bus links £13m (Prioritised)
High quality segregated bus priority measures between the A428 junction with the A1303 and the junction of the M11. The scheme may include on-line or off-line bus priority measures between the A428 and M11. The scheme would ensure that a bus journey between the A428/A1303 junction and the M11 is direct and unaffected by congestion caused by general traffic on the corridor. This scheme is part of the improvements along the whole of the A428 corridor to accommodate further additional growth focussed on West Cambourne and Bourn Airfield.

A428 corridor Park & Ride £11.5m (Prioritised)
One or more Park & Ride or rural interchange sites accessed from the A428, to take advantage of the bus priority measures on the A1303 between the A428 and the M11 in order to intercept more Cambridge-bound general traffic on the A428. Additional Park & Ride capacity along the corridor would improve the corridor in a number of ways. Through the provision of segregated facilities along the corridor, Park & Ride buses would benefit from the same advantages in terms of journey time and reliability as other services on the corridor, making it an attractive option for people who would otherwise drive all the way to Madingley Road Park and Ride or further into the city centre.

Madingley Road bus priority £34.6m (Prioritised)
High quality on-line bus priority measures between M11 and Queen's Road, Cambridge. The aim of the scheme is to ensure that a bus journey between the M11 and Queen's Road, is direct and unaffected by congestion caused by general traffic on the corridor. The link will form part of a longer segregated bus route between the Caxton Gibbet roundabout and Cambridge, helping to facilitate development both at the West Cambourne and Bourn Airfield sites and also further afield in St Neots.

A428 corridor (Cambourne) Bourn Airfield/Cambourne busway £28.8m
Segregated bus links from the A428 at Caxton Gibbet connecting West Cambourne, Cambourne and Bourn Airfield and continuing a segregated route to the junction of the A1303/A428. The link will help to facilitate the development of strategic development sites at West Cambourne and Bourn Airfield by forming part of a longer segregated bus route between this part of the A428 and Cambridge. The route in its entirety will also help to connect strategic development sites in St Neots and also significant University-based employment sites on the west of Cambridge.

A1307 corridor (Haverhill) A1307 bus priority £36.0m (Prioritised) (Haverhill)
Bus priority at key congestion points on the A1307, to include:

- *Bus priority in particular locations along the A1307*
- *Segregated car access to Babraham Park & Ride site*
- *Transport interchanges at key locations along the corridor*
- *Improved bus journey times between Haverhill and Cambridge*

The scheme would help increase the attractiveness of the corridor as a place to invest and would also increase the desirability and accessibility of planned new housing in Haverhill.

Additional Park & Ride capacity – A1307 £7.2m (Prioritised) (Haverhill)
Provision of an outer Park & Ride site on the A1307, located between Linton and the A11 to

provide additional Park & Ride capacity on the corridor and to intercept more car trips further out from Cambridge, thus freeing up more roadspace closer to the city. The scheme would help increase the attractiveness of the corridor as a place to invest and would also increase the desirability and accessibility of planned new housing in Haverhill.

Chisholm Trail links (cycle links parallel to the railway line north of Cambridge Station) £3.0m (Prioritised)
A high quality strategic cycle route that will extend along the rail corridor from Cambridge Station in the south of the city through to the Cambridge Science Park Station, providing connections between the Science and Business Parks in the north and the commercial hub around Cambridge Station and the Biomedical Campus.

Chisholm Trail bridge £4.5m (Prioritised)
A key part of the Chisholm Trail (see above) which could be delivered in advance of the entire route to provide an additional river crossing for pedestrians and cyclists between Chesterton and Ditton Meadows (Abbey Ward).

City centre capacity improvements 7.2m (Prioritised)
Measures to improve capacity for cycling movements in the city centre in order to encourage modal shift away from the private car and towards cycling.
- *A new or extended city centre cycle park*
- *Improved surfacing of pavement and off road pedestrian and cycle provision, especially in areas where surfaces are used by servicing vehicles.*
- *Streetscape enhancements and measures to improve the legibility of the pedestrian and cycle network in the city centre*

A new facility or extended cycle park facility will provide capacity for new trips, help ensure that demand is not suppressed, and reduce the number of cycles that will otherwise be attached to any available railing, lamp post or sign.

Pedestrian and cycle networks – City Cross-city cycle improvements £15.5m (Prioritised)
To encourage modal shift away from the private car and towards cycling by:
- *Developing a network of segregated cycle routes on arterial roads, safe junctions, crossings and an attractive network following quieter streets and open spaces*
- *Reviewing all of the radial routes into the city to make them as safe, direct and attractive as possible*
- *Enhancements through measures such as clear signage, cycle parking, public bike pumps and prominently-deployed bicycle counters*
- *Increase in cycling numbers in the city*

The upgrade and expansion of the Cambridge cycle network will create a realistic scenario whereby less confident cyclists would be able to make the majority of their trips on routes away from motor traffic, lifting cycling levels to a figure nearing 40%. This figure means that highway capacity could be released in the city, thus making way for further growth to be accommodated.

Bourn Airfield/Cambourne pedestrian/cycle route programme £8.4m
Direct, segregated high quality pedestrian/cycle links to west Cambridge, Papworth Everard, Highfields, Hardwick, Caxton, Bourn, Caldecote, Comberton, Bar Hill and Dry Drayton. The schemes would encourage more short and medium-length journeys to be undertaken on foot or by bike through the provision of safe, high quality links which are segregated from general traffic wherever possible. A fully segregated, direct route into Cambridge from the new

developments along the A428 is necessary to encourage significant numbers of people to use bike instead of their car into Cambridge.

Saffron Walden and Haverhill pedestrian/cycle route programme £4.8m
To deliver a comprehensive integrated network for cycling and walking along and within the corridor and to ensure good access between key residential and employment centres. The proposal aims to provide direct, safe and accessible links for cycling in the corridor by constructing new paths and crossings, and by improving existing ones. Many of the business parks are notoriously difficult to access by means other than private car – although some put on shuttle buses for staff, there is evidence to suggest that there is a suppressed demand for cycling to many of these sites. Several of these sites are located within cycling distance of a bus route or rail station, but there are few options to cycle to/from these points. This represents a considerable missed opportunity and a real constraint on their growth potential.

Pedestrian and cycle networks – inter-urban
Cambridge to Royston cycle link £7.2m
The creation of a high-quality network of foot and cycle routes linking key destinations along the A10 corridor between Cambridge and Royston, including:
- *Completion of the strategic 'trunk' route along the A10 (south) between Cambridge and Royston*
- *Links from the strategic route to employment centres, villages, railway stations/interchanges and other key destinations within the corridor*

There is great potential in this corridor to enhance multi-modal journeys by enhancing the links between cycle and bus/rail. This would increase mobility choice for people, reduce congestion and negate the need for extensive car parks at stations, as well as reducing the likelihood of residential streets being clogged with commuter cars

Waterbeach pedestrian/cycle route programme £14.4m
A comprehensive network of high quality pedestrian/cycle routes linking the town with key destinations in Cambridge and the surrounding villages. This could include a segregated cycle lane alongside the chosen route of the bus corridor, connecting Waterbeach to Landbeach and onwards to Cambridge, and a network of rural cycle links connecting surrounding villages to the strategic cycle route into Cambridge, the Park & Ride, the village colleges at Impington and Cottenham Village Colleges. Waterbeach is ideally located for cycling into Cambridge, however cycling along the A10 is not a safe or enjoyable option in its current form. Research has shown that fully segregated routes for cyclists are key to increasing the uptake of cycling. Therefore, a fully segregated, direct route into Cambridge from the new development is necessary to encourage significant numbers of people to use bike instead of their car into Cambridge.

Histon Road, Cambridge bus priority £4.3m (Prioritised)
High quality on-line bus priority measures between the Histon Interchange and the junction of Histon Road, Huntingdon Road and Victoria Road, Cambridge. The aim of the scheme is to ensure that a bus journey between the Histon Interchange and the junction of Histon Road, Huntingdon Road and Victoria Road, is direct and unaffected by congestion caused by general traffic on the corridor. The link will form part of a longer segregated bus route between a new P&R site to the north of the Waterbeach development and Cambridge, helping to facilitate development both at Waterbeach and also further afield in Ely and (outside the strategy area).

Cambridge radials – Milton Road / Histon Road Milton Road, Cambridge bus priority £23m (Prioritised)

High quality on-line bus priority measures between the Milton Interchange and Mitcham's Corner, Cambridge. The aim of the scheme is to ensure that bus journeys between the Milton Interchange and Mitcham's Corner are direct and unaffected by congestion caused by general traffic on the corridor. The link will form part of a longer segregated bus route between a new P&R site to the north of the Waterbeach development and Cambridge, helping to facilitate development both at Waterbeach and also further afield in Ely (outside the strategy area).

Cambridge radials – Hills Road Project Cambridge, Hills Road £25.8m
Connecting Cambridge rail station and the city centre using a high quality 'green link'. The aim of this scheme is to significantly improve the experience for pedestrians and cyclists travelling between the city centre and Cambridge rail station, including a much improved public realm.
Measures could include:
- *Improved cycle and pedestrian connectivity between the city centre and station*
- *Hills Road and Regents Street given a sense of place, not just a place to pass through – commercial and social value added*
- *Widened pavements, increased cycle parking, reduced street clutter*

Newmarket Road bus priority phase 1, Elizabeth Way to Abbey Stadium £54.8m (Newmarket Road)
High quality on-line bus priority and segregated busway measures along the length of Newmarket Road, between the junction with East Road/Elizabeth Way and the junction with Airport Way to ensure that a bus journey between these points is direct and unaffected by congestion caused by general traffic on the corridor. Scheme likely to include a Busway between Elizabeth Way and the Abbey Stadium. The link will form part of a wider high quality bus network around the city, helping to facilitate major development both in the city and outside it.

Newmarket Road bus priority phase 2, Abbey Stadium to Airport Way £39.8m (Newmarket Road)
High quality on-line bus priority and segregated busway measures along the length of Newmarket Road, between the Abbey Stadium and the junction with Airport Way to ensure that a bus journey between these points is direct and unaffected by congestion caused by general traffic on the corridor. The link will form part of a wider high quality bus network around the city, helping to facilitate major development both in the city and outside it.

Cambridge radials – Newmarket Road Newmarket Road bus priority phase 3, Airport Way Park & Ride £17.3m (Newmarket Road)
Relocation of Newmarket Road P&R site to Airport Way and expansion to 2,500 spaces in order to intercept more car journeys before they reach the city. This scheme will help to deliver a high quality public transport corridor on this side of the city.

Foxton level crossing and interchange £21.6m
The provision of a grade-separated crossing facility of the London King's Cross –Cambridge railway line as it crosses the A10 and the introduction of a rural interchange using the resultant road layout. The scheme would remove the disruption along the A10 (south) corridor that is regularly caused to traffic through the lowering of the barriers at Foxton level crossing, and would also provide a better means by which people living in the more rural areas can interchange between modes to access the improved rail service along the corridor. The A10 carries approximately 12,000 vehicle trips per day (12 hour count)and the level crossing barrier operates some 76 times in a 12 hour period for an average time of 2

minutes and 20 sections per operation(almost 3 hours per day). The delays caused are being compounded as growth on the rail network, and in particular rail freight, increases.

A10 corridor south (Royston)
Hauxton Park & Ride £17.3m
Provision of an outer Park & Ride site on the A10 (south) at Hauxton with capacity for 1,000 spaces to provide additional Park & Ride capacity on the corridor and to intercept more car tripsfurther out from Cambridge, thus freeing up road capacity closer to the city. Coupled with abusway between Hauxton and Trumpington (see scheme below) which would allow buses to bypass congestion around the M11 junction, this scheme would help to create a HQPT corridor in this part of the city.

Hauxton-Trumpington busway £15.8.
A busway link between the new Park & Ride site at Hauxton and the existing Park & Ride site in Trumpington. The success of the new Park & Ride site would depend on how easily buses can get through the M11 junction and whether there was an advantage to a car driver to leaving the car at the new facility. This scheme would allow buses to bypass congestion around the M11 junction, forming part of a HQPT corridor in this part of the city.

Ring road bus priority – Addenbrooke's to Newmarket Road £18.7m (Newmarket Road)
To provide a means of giving priority to buses travelling orbitally between the biomedical campus in the south of the city and the eastern side of the city, without being held up in congestion caused by general traffic. The scheme is likely to include online high quality bus priority on the ring road connecting Addenbrooke's to Newmarket Road by way of Fendon Road, Mowbray Road, Perne Road, Brook's Road and Coldham's Lane.

Newmarket Road to Cambridge Science Park Station busway £64.7m (Newmarket Road)
A busway linking Newmarket Road to the new Cambridge Science Park Station in order to provide a segregated means of buses travelling orbitally between the east of the city and the new Cambridge Science Park Station, without being held up in congestion caused by general traffic. The scheme will greatly improve accessibility to Cambridge Science Park Station, and the business/science parks in the area..

Western Orbital £23.0m
To provide a segregated means for buses travelling orbitally between the university developments in the north west of the city and the biomedical campus to the south, without being held up in congestion caused by general traffic, and avoiding the congested city centre. This scheme will increase orbital capacity for public transport.

A10 dualling and junctions £63.4m (Waterbeach)
Additional capacity (on an alignment to be determined) for general traffic between the northernmost access to the new town and the Milton Interchange of the A10 with the A14. Congestion on the A10 is severe at peak times and often during the inter-peak as well. Whilst it is intended that a high proportion of trips generated by the new development will be undertaken by public transport, cycling and walking, there will still be some trips that will be made by car and that will use this stretch of road, placing more demand on it.

A10 corridor north (Waterbeach) A14/A10 Milton Interchange £66.4m (Waterbeach)
Additional capacity at the Milton Interchange for general traffic movements between the A10 and A14, and the A14 and A10. The scheme is integral to the delivery of the new

development at Waterbeach which will help support the economic growth of the area by providing homes for people coming to work in the area.

Waterbeach Park & Ride £11.5m (Waterbeach)
A new Park & Ride site on A10 to intercept traffic from the north of Waterbeach, served by new busway link to Cambridge. Alignment to be determined. The scheme will intercept traffic from the north of Waterbeach and provide an opportunity for interchange onto public transport for the remainder of the journey. There is a significant volume of traffic from the north of Waterbeach that contributes to the congestion on the southern stretch of the A10. By providing an additional Park & Ride site further out, more general traffic could be intercepted before reaching the southern stretch of the road, thus helping with the capacity problem on the A10 and also freeing up capacity at the existing Milton Park & Ride.

Waterbeach Barracks to North Cambridge busway £46.1m (Waterbeach)
A busway link from a relocated Waterbeach station and new town centre to north Cambridge, including a fully segregated crossing of the A14 Trunk Road. The scheme aims to ensure that a bus journey between the centre of the new town, the relocated railway station and the outskirts of Cambridge is direct and unhindered by congestion along the A10 or the A10/A14 junction. The scheme is integral to the delivery of the new development at Waterbeach which will help support the economic growth of the area by providing homes for people coming to work in the area.

Waterbeach new station £33.1m (Waterbeach)
A relocated Waterbeach Station to serve the village and the new town, with platforms (capable of taking 12-carriage Thameslink trains or 10-carriage InterCity Express trains). A station already exists in the village of Waterbeach, however its current location is not ideal for encouraging residents of the new town to use the train. In addition, the rail industry is proposing significant service improvements along this line, including the introduction of 12-carriage trains. A relocated station would enable longer platforms to be provided to take advantage of the longer trains and increased capacity.

Total £752m

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