

RECOMMENDATIONS FROM THE ELY-CAMBRIDGE TRANSPORT STUDY

To: Economy and Environment Committee

Meeting Date: 8th February 2018

From: Graham Hughes, Executive Director - Place and Economy.

Electoral division(s): Kings Hedges, Chesterton, Waterbeach, Histon & Impington, Cottenham & Willingham, Longstanton, Northstowe & Over, Ely North, Ely South, Soham South & Haddenham, Soham North & Isleham, Sutton, Littleport East

Forward Plan ref: n/a **Key decision:** No

Purpose: To note and comment on the recommendations from the Ely to Cambridge Transport Study

Recommendation: The Committee is asked to:

a) endorse the recommendations set out in the study; and

b) commend the package which includes the full dualling of the A10 between Ely and the Milton Interchange (option 5) to the Cambridgeshire and Peterborough Combined Authority for approval and further development.

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1. BACKGROUND

- 1.1 The Ely to Cambridge Transport Study is a wide-ranging multi modal study which has made recommendations on the transport schemes needed to accommodate the major development planned at a new town north of Waterbeach, Cambridge Northern Fringe East (CNFE) and the Cambridge Science Park (CSP). The study has three strands:
- Strand 1 looks at the overall transport requirements on the corridor
 - Strand 2 looks at the specific requirements for growth at Waterbeach
 - Strand 3 looks at the specific requirements for growth at CNFE/CSP
- 1.2 The commission has delivered:
- An options study and Strategic Outline Business Case for the overall package of interventions on the Ely to Cambridge corridor;
 - A transport study that identifies the infrastructure package and phasing of that package to provide for the transport demand of the development of a new town north of Waterbeach,
 - A transport study supported by modelling which provides evidence for the level of development which could be supported in the CNFE/CSP area and its phasing, in transport terms.
- 1.3 The scope of the study was drawn up to incorporate three separate, but interlinked issues; namely the need for a Strategic Planning Document or Area Action Plan for both Waterbeach New Town and the CNFE, hence providing a Transport Evidence Base for Plan Making as required by National Planning Practice Guidance. Early thinking was also required on the requirements of the whole corridor to inform Tranches 2 and 3 of delivering the Greater Cambridge City Deal.
- 1.4 The study is separate to, but links with the A10 Ely to King's Lynn Study which was reported to the Committee in September and to the M11-A47 Extension Study which has been commissioned by the Cambridgeshire and Peterborough Combined Authority and is due to report in summer 2018.

2 TECHNICAL WORK

- 2.1 Strategic modelling using Cambridgeshire County Council's Cambridge Sub Region model (CSRM2) forms an intrinsic part of the technical work and has taken place in two phases. The first phase tested the effect of development at land north of Waterbeach and new development at CNFE/CSP on the transport network with no mitigation measures except for the most basic enabling measures, such as site access. This phase of the modelling provided a 'red flag' for areas on the highway network that were of concern and where mitigation measures needed to be considered. It also provided a baseline against which the effect of various mitigation measures could be tested.
- 2.2 The second phase of modelling tested potential mitigation measures. As a starting point, schemes which were already broadly identified in policies set out in the Long Term Transport Strategy and the Transport Strategy for Cambridge and South Cambridgeshire were included, however this was not a constraint.

2.3 A series of mitigation packages were tested, starting with a public transport and active modes (cycling and walking) package which was then built upon with various levels of highway capacity. The tests are explained in more detail in section 4.

3. Key Issues from the technical work that have informed the study recommendations

3.1 The results from the first phase of modelling highlighted that unsurprisingly, the Milton interchange has an important influence on how traffic behaves on the A10. When all the development was included and based on other assumptions within the model, the results suggest that the following route choices and movements are likely:

- Between the Milton interchange and Waterbeach, traffic flows on the A10 remain relatively stable, confirming that this stretch of the road is already operating at capacity and is unable to carry significantly more traffic.
- From Waterbeach village, and locations further north on the A10, from where people do have a route choice, flows on less appropriate routes south increase, for example through Clayhithe and Horningsea to the east, through Landbeach to the west, and along the B1049 Wilburton-Cottenham-Histon route, as traffic re-routes to avoid the congested A10.
- From the new development north of Waterbeach where motorists don't have a route choice to travel south, vehicles are either joining the back of the queue on the A10, or turning right and heading north before turning west at Stretham then travelling south through Cottenham.
- From Ely, traffic flows on alternative routes along the A142 west towards Sutton and east towards Newmarket increase, suggesting that some motorists try to avoid the A10 corridor altogether.

3.2 Further analysis of demand along the route was undertaken to help better understand the type of trips that the A10 is used for. This has shown that without the significant development at the new town north of Waterbeach and at the CNFE and CSP, some 24% of trips on the A10 have both their start and end points outside the study area and a further 55% have at least one end of the journey outside the study area, highlighting the strategic nature of the corridor. Even once these developments are included – which should encourage more local trip-making - this figure remains at about two-thirds. This has an implication for the ability to encourage a shift from car to non-car modes and consequently what proportion of trips might be able to be catered for by non-highway measures.

3.3 To the south of the study area at Cambridge Northern Fringe East and Cambridge Science Park, the modelling work suggests that to unlock further development on these sites a policy of radical parking restraint will be fundamental to making the sites work in transport terms.

3.4 Whilst a package of non-highway measures is necessary in policy terms and has some effect on mitigating the impacts of development, because of the strategic nature of trips on the A10 the modelling work suggests that this does not go far enough and as such, significant investment in highway capacity will also be required.

4 Options and emerging recommendations

Options modelled for mitigation

- 4.1 As indicated in section 2.3, six mitigation packages were modelled. Table 1 sets out these packages.

Table 1: Mitigation packages

Option	Composition of package
Option 1 Mode-shift	Significant investment in cycling/pedestrian routes Segregated public transport route between development north of Waterbeach and Cambridge Bus-based P&R at development north of Waterbeach Relocated railway station Parking restraint at CNFE/CSP
Option 2 Junction improvements	Option 1 PLUS Improvements to eight junctions along the A10, including Milton Interchange.
Option 3 North dual	Options 1 and 2 PLUS Dualling of A10 between Ely and development north of Waterbeach to encourage users to use new P&R site
Option 4 South dual	Options 1 and 2 PLUS Dualling of A10 between development north of Waterbeach and Milton Interchange to provide additional capacity on most congested section of route
Option 5 Full dual	Options 1, 2, 3 and 4 Dualling of length of A10 between Ely and Milton Interchange
Option 6 sensitivity test Offline alternative to A10	Options 1 and 2 PLUS New offline route to remove strategic traffic from the A10 and potentially form the southern section of an M11-A47 link

- 4.2 A separate study has been commissioned by the Combined Authority to consider whether there is a business case for extending the M11 northwards to connect with the A47. Whilst the full route is outside the scope of this study, option 6 has been included as a sensitivity test to investigate the principle of an offline link which could give strategic traffic an alternative to the A10, thus freeing up capacity on the route between Ely and Cambridge. Such a link could potentially form the southern section of a longer M11-A47 link. Due to the geographical limitations of the model, it has not been tested in the same way as the previous five options, however a commentary on the performance of this option is given in section 4.7.
- 4.3 Initially, each of the options was analysed using the three key metrics from the model outputs: – effect on mode-share, effect on traffic flow and delay, effect on journey time.

- 4.4 Considering mode-share, all options increase the number of trips on the corridor. The first two options reduce car mode share, however once more substantial highway improvements are made, the car mode share starts to increase, at the expense of other modes, predominantly rail and active modes. This suggests that new car trips are being induced onto the route. Bus and Park & Ride mode share increase in all options, although little additional benefit is seen beyond Option 2 for the investment that would be required.
- 4.5 In terms of the effect each option has on flow and delay, the options that provide an increase in highway capacity also result in an increase in the mode share of car trips, meaning there is more traffic on the network. This is because increased highway capacity induces more trips to be undertaken by car than was previously the case. As highway capacity increases, traffic increases principally on the A10 and the A14. This is accompanied in general by decreases in flows on parallel, less desirable routes suggesting that through traffic is being drawn back on to appropriate routes rather than rat-running through villages such as Horningsea, Clayhithe, Landbeach, Cottenham, Histon and Impington. However, as more highway capacity is introduced, more traffic not only arrives in Cambridge in the morning peak, but also in Ely in the evening peak. The modelling suggests that as highway capacity is increased in the study area, further delay starts to be introduced on certain junctions around Ely in the evening peak which will need consideration as options are developed. A full dual option also starts to present further delays at Milton Interchange.
- 4.6 None of the options returns traffic flow to free-flow conditions in the morning or evening peaks, however each of the highway options progressively improves upon the end to end journey time in relation to the scenario without any mitigation measures. In the am peak, where the predominant flow is south-bound, only the south dual, or full dual options improve upon the journey times predicted for the future scenario without development and this improvement is less than five minutes. In the pm peak where the predominant flow is north bound, all the highway options improve upon the journey times for this same scenario and are slightly greater than the am peak, between 5 and 10 minutes.
- 4.7 The results from the offline option (Option 6) do seem to show the scheme has some merit, in that flows decrease on the A10 and on most of the routes where rat running was seen in the first phase of modelling. This includes the B1047 through Clayhithe and Horningsea, the B1049 through Cottenham and Histon and also the B1050 from Bar Hill towards Earith. This seems to confirm the analysis that a significant proportion of traffic currently using the A10 is strategic in nature and has an origin and/or destination outside the study area. Further analysis has revealed that such a link could reduce the amount of traffic on the A10 by around 4%. Whilst this figure seems low, this link has the potential to have a much wider area of benefit than just the A10, for example on the A142, the A1123 and the A141 in addition to the B roads listed above.
- 4.8 Regarding journey times in the morning peak towards Cambridge, enough traffic appears to divert onto the alternative route to make journey times on the A10 comparable to the south dual option and better than options 1, 2 and 3, between the two points analysed. In the evening peak heading away from Cambridge however, the modelling suggests that journey times are better with the full dual and north dual options. If this option were to be considered further, more detailed analysis of the positive and negative effects of such a scheme would be needed to understand the impacts outside the modelled area.

Study recommendations

- 4.9 The study has confirmed the existing policy position that a multi-modal package of measures will be needed for the whole corridor. This will include a package of measures to encourage a mode shift away from car, including a high quality, segregated public transport route between Waterbeach and Cambridge, the relocation of Waterbeach station, significant investment in cycling and walking measures around the new development north of Waterbeach and a new Park and Ride facility.
- 4.10 Furthermore, whilst not being prescriptive about the level or type of development that is brought forward at CNFE or CSP, the study is clear that the transport characteristics of these significant sites will need to be very different to traditional housing, Science Park or office developments. These will be fundamentally driven by a policy of radical parking restraint complimented by investment in public transport, cycling and walking.
- 4.11 Evidence elsewhere in the city shows that where parking provision is limited, much better mode shares for non-car modes are achieved, especially when coupled with appropriate on-street parking controls and good alternative forms of transport. For example, car-driver mode share at Cambridge Science Park is currently around 58%. At Cambridge Biomedical Campus, where there are far fewer parking spaces per square metre of floorspace, the comparable mode share is 31%. The new CB1 development near Cambridge Station pushes this even further and is aiming to achieve a car driver mode share of 11%. Appendix A shows the location of CNFE, CSP and the new development north of Waterbeach in relation to existing and planned public transport and cycling infrastructure.
- 4.12 The study also confirms that smaller scale highway measures to discourage rat running will be required along parallel routes, as well as improvements to junctions along the A10 in the short term. Finally, the study recommends that to accommodate the significant proportion of strategic trips through the study area, major investment in additional highway capacity along the A10 is made. This would take a broadly online alignment to the existing A10, although it is acknowledged that some sections would of necessity need to be offline.
- 4.13 The study also recognises that an offline alignment that potentially forms the southern part of an M11-A47 link has some merit by providing an alternative route for the significant proportion of strategic traffic using the A10. The M11-A47 study will consider this particular scheme further, however more work would need to be undertaken to establish whether there is a business case for both schemes.
- 4.14 The study suggests that the package as a whole, including a full dual of the A10 could cost upwards of £500 million reflecting the level of investment that is considered necessary to accommodate the development aspirations in the area. This does not include a cost for the offline western option. Further work on each aspect of the recommendation will be required to progress any scheme through the next phases of feasibility, decision-making and delivery. Given the breadth of the recommendations and the level of investment required, a multi-agency approach is needed to progress the recommendations in a cohesive and joined up way.

5 Next steps and milestones

- 5.1 Since the Ely-Cambridge Transport Study was commissioned, the political structure in Cambridgeshire has changed significantly with the formation of the Cambridgeshire and Peterborough Combined Authority. Whilst the Greater Cambridge Partnership has substantially funded the study, given the geographic coverage of the recommendations, it is considered appropriate that from this point forward the Combined Authority should have the responsibility for approving the recommendations and taking them forward for consultation in the summer of 2018. However, in terms of delivery, some elements of the package may be best delivered by other bodies, including the Greater Cambridge Partnership, Cambridgeshire County Council, the district councils or the private sector.

Progression of business case work

- 5.2 The recommendations from the study conclude the research phase of the work. In order to conclude the DfT's WebTag Stage 1 Option Development, there is a need for work to roll forward into the feasibility phase, which includes:
- Consulting on initial options set out in this study
 - Developing options in further detail
 - Further consultation on the detail of developed options
- 5.3 Whilst the study does not recommend a specific option regarding the provision of highway capacity, it is recommended that the Committee commend option 5 to the Combined Authority for approval and further development. This would enable the impacts of dualling the full length of the A10 between Ely and the Milton Interchange to be fully understood and considered alongside an alternative route that potentially forms the southern section of an M11-A47 link.
- 5.4 If the proposal to consult on the recommendations from the study in the summer of 2018 is approved, the results from this will then be used to inform and shape the development of options in more depth. It is suggested that alongside preparations for the consultation, joint consideration is given to which bodies might be best placed to deliver the various elements of the package, in order that the next phase of feasibility work can begin once the consultation is complete.

6 ALIGNMENT WITH CORPORATE PRIORITIES

6.1 Developing the local economy for the benefit of all

The following bullet point sets out details of implications identified by officers:

- The study makes recommendations that will help to deliver two major development sites, namely a new town on land north of Waterbeach, as well as the significant area of land known as Cambridge Northern Fringe East.

6.2 Helping people live healthy and independent lives

The following bullet point set out details of implications identified by officers:

- The study recommends significant early investment in active modes of transport such as cycling and walking between Ely, Waterbeach and Cambridge, as well as

neighbouring villages. The recommendations from the study therefore have positive implications for public health by making it easier and safer for people to incorporate active travel into their daily routines.

6.3 Supporting and protecting vulnerable people

There are no significant implications for this priority.

7 SIGNIFICANT IMPLICATIONS

7.1 Resource Implications

The study recommends a significant package of transport infrastructure. Should the Combined Authority request that the County Council progress the development of one or more elements of the package, given the scale of the schemes considerable demand could be placed on existing teams within the County Council. Consideration will need to be given in due course to ensure they are resourced appropriately.

7.2 Procurement/Contractual/Council Contract Procedure Rules Implications

There are no significant implications within this category. Procurement for the further development of individual options will take place in accordance with the Council's Contract Regulations.

7.3 Statutory, Legal and Risk Implications

All schemes taken forward will need to go through the appropriate statutory and legal processes as they are developed.

7.4 Equality and Diversity Implications

The package of measures recommended in the study will help improve access to services, jobs and educational opportunities not only by car but also by public transport and active modes. A Community Impact Assessment will be carried out and reviewed as appropriate as each scheme develops.

7.5 Engagement and Communications Implications

As the study has progressed, engagement with key stakeholders has been undertaken. Partner authorities have been part of both the Project Team and Project Board. The Boards of both the Greater Cambridge Partnership and the Cambridgeshire and Peterborough Combined Authority have been briefed and a local member briefing was undertaken on 8th January. As set out in paragraph 5.1, a wider public consultation exercise is recommended in the summer of 2018 on the recommendations from the study. Whilst the Combined Authority will need to lead on this, given the breadth of the recommendations, the consultation will need to be extensive and it is likely that the County Council will need to give significant support to this.

7.6 Localism and Local Member Involvement

Local Members whose divisions lie within the study area were all invited to a briefing on the study on 8th January.

7.7 Public Health Implications

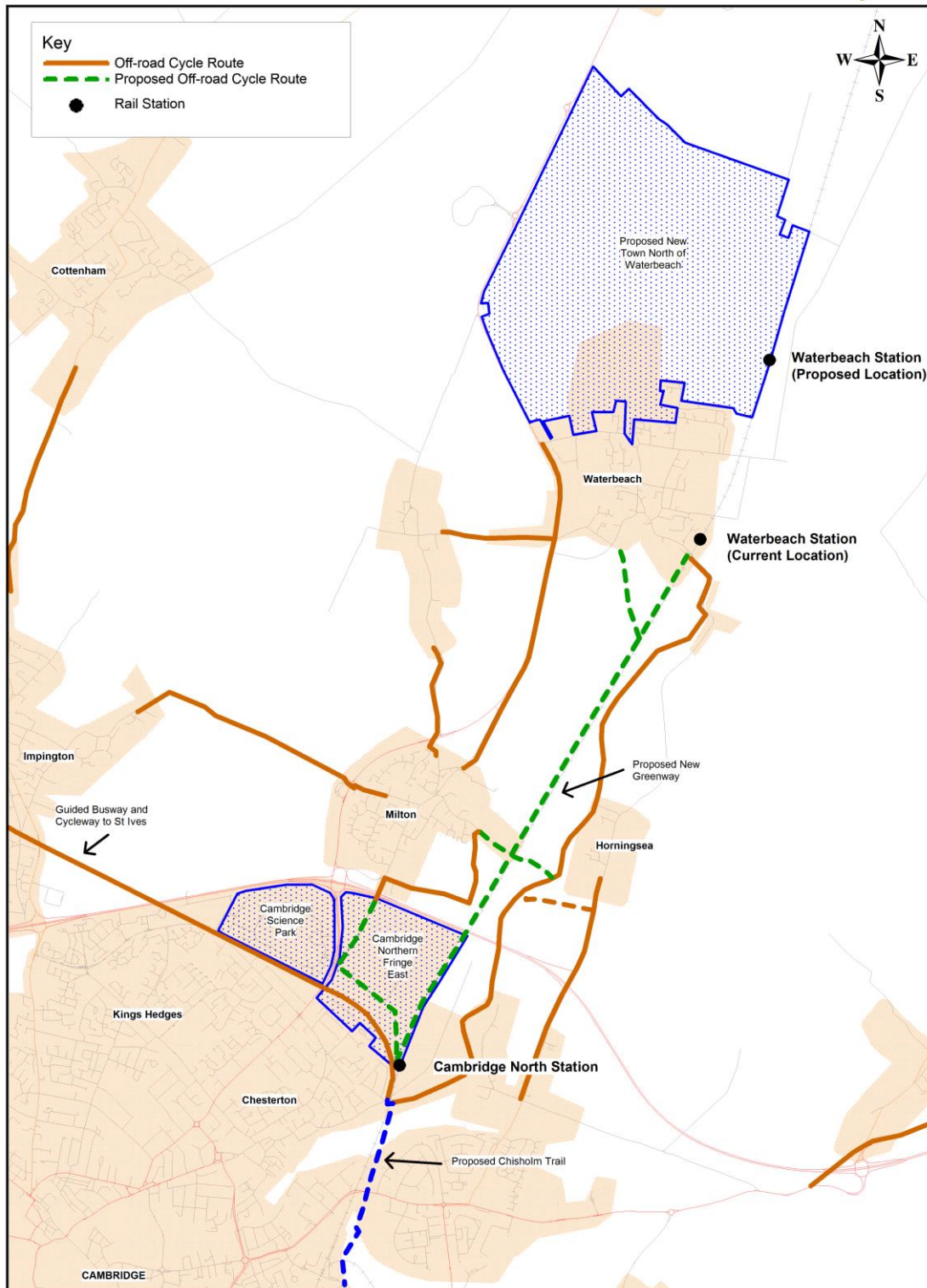
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Implications	Officer Clearance
Have the resource implications been cleared by Finance?	Yes Sarah Heywood:
Have the procurement/contractual/ Council Contract Procedure Rules implications been cleared by the LGSS Head of Procurement?	Yes Paul White
Has the impact on statutory, legal and risk implications been cleared by LGSS Law?	Yes Fiona McMillan
Have the equality and diversity implications been cleared by your Service Contact?	Yes Tamar Oviatt-Ham
Have any engagement and communication implications been cleared by Communications?	Yes Sarah Silk
Have any localism and Local Member involvement issues been cleared by your Service Contact?	Yes Tamar Oviatt-Ham
Have any Public Health implications been cleared by Public Health	Yes Tess Campbell

Source Documents	Location
Ely-Cambridge Transport Study Preliminary Strategic Outline Business Case and further technical reports to support the study	Please refer to the documents section on the following web page: https://www.greatercambridge.org.uk/transport/transport-projects/ely-to-cambridge-a10-transport-study

APPENDIX A – PLAN SHOWING LOCATIONS OF CAMBRIDGE NORTHERN FRINGE EAST, CAMBRIDGE SCIENCE PARK AND NEW DEVELOPMENT NORTH OF WATERBEACH TOGETHER WITH EXISTING AND PLANNED PUBLIC TRANSPORT AND CYCLING

Cycle Routes and Public Transport Connections in Vicinity of Cambridge Science Park and Cambridge Northern Fringe East



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