

LAND NORTH OF CHERRY HINTON SPINE ROAD OPTIONS ASSESSMENT

To: Economy and Environment

Meeting Date: 7th December 2017

From: Executive Director – Economy, Transport and Environment

Electoral division(s): Abbey, Cherry Hinton and Teversham

Forward Plan ref: Not applicable **Key decision:** No

Purpose: To consider and determine the nature of the spine road for the Land North of Cherry Hinton.

Recommendation: The Committee is requested to:

- a) Approve the spine road as a through route.
- b) Note - the option of a central versus a periphery route is flexible, with further assessment required on the relative merits.
- c) Note that the County Council requires a decision be made concerning the spine road design prior to an application for the site being submitted.

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1. BACKGROUND

1.1 The emerging local plans for Cambridge City and South Cambridgeshire allocate land for residential development at Land North of Cherry Hinton (LNCH) in accordance with the adopted Cambridge East Area Action Plan (2008). The site forms part of the wider Cambridge East proposals to eventually provide between 10,000 and 12,000 homes and is for:

1,200 dwellings with supporting infrastructure, including a primary and secondary school, employment, leisure and community facilities. Access from Coldhams Lane and Cherry Hinton Road and Airport Way with a spine road between the two.

1.2 To shape future planning applications for the LNCH site, Cambridge City Council and South Cambridgeshire District Council have recently concluded consultation on a Supplementary Planning Document (SPD). The SPD will support the policies contained in the Local Plans and Cambridge East Area Action Plan (2008), and provide planning and design guidance to developers. The SPD will be a material consideration in the determination of planning applications.

1.3 The nature of the road has remained flexible with the SPD allowing for the link to be either a 'complete link' allowing through traffic or be severed by a 'bus gate' preventing motorised through movements. The relative impacts of both options have been assessed and are presented in this report with a view to enabling a decision on this specific issue.

1.4 There has been extensive public and member engagement in relation to this site and this issue.

1.5 **Figure 1** below shows the **Site Location** and proximity to Cambridge City Centre.



2. MAIN ISSUES

Transport Strategy for Cambridge and South Cambridgeshire

- 2.1 Policies set out in the Transport Strategy for Cambridge and South Cambridgeshire Policy (e.g. TSCSC14, TSCSC15) do not encourage the provision of increased highway capacity in Cambridge. The explanatory text says that:

“If increases in congestion are to be minimised, both in Cambridge and on the radial routes, other modes of transport must provide the additional capacity needed. The backbone of the strategy will be a high quality passenger transport network of bus, guided bus and rail services, fed and complemented by comprehensive pedestrian and cycle networks.”

- 2.2 Considering the policies mentioned in 2.1, a new all-vehicle ‘through route’ between Coldham’s Lane and Cherry Hinton Road may not be appropriate. Chiefly because it is likely to induce more motorised vehicular trips, providing only temporary relief (e.g. from Cherry Hinton High Street and Coldham’s Lane junction, and perceived rat running through Church End) and ultimately worsening congestion problems.
- 2.3 Policy interpretation suggests that a bus gated route, or a spine road designed to discourage through travel would be more appropriate.

Cambridge and South Cambridgeshire Local Plan

- 2.4 The Local Plan policy directs the need for a spine road to support site access, but does not specify either way whether the link should be open to all traffic:

“The masterplan for site R47, as shown on the Policies Map (together with adjoining land in South Cambridgeshire on site SS/3), will make provision for a primary and secondary school, a local centre with community hub, open space and a spine road connecting Coldham’s Lane with Cherry Hinton Road. Vehicular access to the site will only be permitted via the new spine road, unless needed for emergency access¹”.

Spine Road Assessment

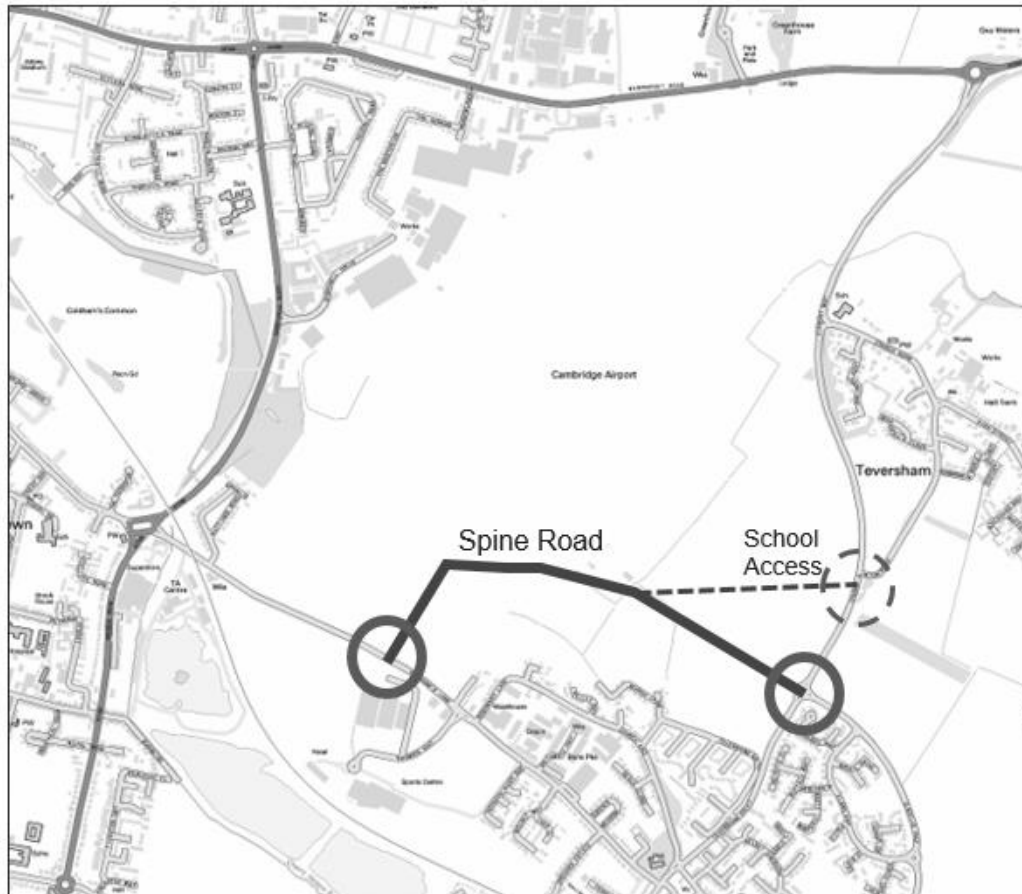
- 2.5 The Policy interpretation has divided opinions locally. In pre-consultation some residents and local members have expressed a strong preference for the link to be a through route.
- 2.6 A high level assessment has been produced by Peter Brett Associates which considers two scenarios:
- **‘Bus gate’** - The link is not a through route and is severed in the middle: The assessment for this scenario considers development trips only (*and internal trips across the site will need to exit the site and go round because of the barrier*).
 - **‘Complete link’** - the link can be used for through movements by all traffic:

¹ Part 3 of policy 12

The assessment for this scenario considers the development trips as well as the strategic and local rerouting of trips that are attracted to use the new spine route.

- 2.7 The spine road tested is the section between Coldham's Lane and Gazelle Way junctions as this is the primary route through the site. For the purposes of the assessment it is assumed to be 1.3km in length and a design speed of 20mph.

Figure 2: showing the approximate location of the accesses and **spine road route**



- 2.8 The SPD includes two options for the spine route. A route through the local centre and a peripheral route. These matters are flexible in the SPD and subject to further analysis so not considered in detail in this report.

Results – Pros and Cons

- 2.9 The initial results of the two scenarios are presented in the following section. It should be noted that the assessment and modelling work is on-going and therefore the traffic flows and other results referred to in this section may be subject to change.

	Bus Gate Scenario	Complete Link Scenario
Pros	<p>Lower flow increases on Airport Way and Coldhams Lane links</p> <p>Lower impact on the Coldhams Lane and Barnwell Road Roundabout</p> <p>These impacts result from there being no strategic reassignment attracting additional trips to the local area</p>	<p>Minimal increases or reductions in flow on Cherry Hinton, Barnwell Road and Newmarket Road Corridors</p> <p>Potential reduction in flow on Church End through reassignment – however this provides additional available capacity which may provide a reduction in traffic in the short term, has the potential to attract additional traffic to the area in the longer term unless existing network capacity is reduced in some way.</p> <p>Lower impacts at Airport Way and A1303 Roundabout and at Coldhams Lane and High Street junction</p>
Cons	<p>Greater flow increases on Coldhams Lane (east of access) and Cherry Hinton Corridors within Cherry Hinton.</p> <p>Greater Impact at Coldhams Lane and High Street Junction and Airport Way and A1303 Junction.</p> <p>Potential to worsen rat-running on Church End in PM peak due to additional traffic on existing corridor</p>	<p>Greater impacts on Coldhams Lane and Airport Way due to strategic reassignment.</p> <p>Greater impact at the Coldhams Lane and Barnwell Road junction.</p> <p>This scenario would provide an attractive through route and potential rat-run through the development site, possibly generating a perception, or possibly a reality of anti-social driving inappropriate to the environment</p> <p>Church End would still be an available option for potential rat running. Further consideration would need to be given to methods to prevent backfilling of released capacity – potential opportunity for sustainable mode capacity</p>

2.10 The detail of the analysis is presented in Appendices.

Conclusions:

2.11 The conclusions from this assessment are as follows:

- The evidence suggests that there are mixed pros and cons associated with either option.

- It is acknowledged that the County's Policy position seeks to avoid the provision of new highway capacity.
- The bus gate option does create the issue of internal site movements having to exit the site to travel from one end to the other, placing greater pressure on Cherry Hinton High Street and Coldhams Lane.
- Both options have negative impacts on the Coldhams Lane and Barnwell Road junction, albeit the through route more-so due to the reassignment of trips through the site from the wider network.
- The complete route scenario through the proposed development is likely to ease traffic on Church End and Coldhams Lane east of the access in the short term. Such benefits could be short lived unless existing capacity is reduced to prevent backfill of trips.
- In any event the site will require comprehensive walking, cycling and public transport links, and safe routes to school.
- On balance, the **provision of a through route** is recommended.
- Further analysis is required on whether this route should be a perimeter route or a route through the urban centre. This assessment will continue as part of the development of any outline planning application, informed by highways, spatial and urban design considerations.

3. ALIGNMENT WITH CORPORATE PRIORITIES -

3.1 Developing the local economy for the benefit of all

Additional housing growth is important for the broader development of the Cambridgeshire economy and this site will help provide that.

3.2 Helping people live healthy and independent lives

Any planning application coming forward will need to demonstrate how it provides for healthy and independent lives in accordance with local plan policies.

3.3 Supporting and protecting vulnerable people

There are no significant implications for this priority.

4. SIGNIFICANT IMPLICATIONS

4.1 Resource Implications

There are no significant implications within this category.

4.2 Procurement/Contractual/Council Contract Procedure Rules Implications

There are no significant implications within this category.

4.3 Statutory, Legal and Risk Implications

There are no significant implications within this category.

4.4 Equality and Diversity Implications

There are no significant implications within this category.

4.5 Engagement and Communications Implications

There are no significant implications within this category.

4.6 Localism and Local Member Involvement

There has been extensive member inclusion and briefing through the consideration of this issue.

4.7 Public Health Implications

There are no significant implications within this category.

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

Source Documents	Location
None	Not applicable

Appendix 1

Bus Gate and Complete link methodology and assumptions

This section sets out an overview of the methodology and assumptions used to assess the two scenarios tested. It should be noted that the review and agreement of the distribution and assignment of trips onto the network are on-going and therefore may be subject to change. However, the origin and destination locations used in the assessment are identified primarily from census data which will not change and therefore any changes are not expected to fundamentally change the findings of the assessment.

Bus Gate Scenario

The bus gate scenario assumes that the spine is severed in the middle of the site and therefore residential vehicular trips are restricted from travelling internally between the east and west development parcels or external vehicular through trips from passing through the site.

The 'bus gate' scenario considers the following impacts:

- Vehicles related to the development land-use proposals.

The development generated vehicular trips were identified for each journey purpose (e.g. education, work, retail etc) and assigned to the network manually using Google Journey Planner routes to/from origin and destination locations. In this assessment, trips travelling internally within the development between the two development parcels would have to exit the site and travel on the highway network external to the site (namely Cherry Hinton Road and Coldhams Lane), to then re-enter the development. The resultant traffic flow information is contained in section 5.0 of this report.

Complete link Scenario

The 'complete link' assessment considers three separate impacts:

- Vehicles related directly to the development land-use proposals
- Vehicles already on the network that may reassign or reroute from wider routes to the Spine Road e.g. from the Newmarket Road Corridor to the Airport Way Corridor
- Local reassignment/ rerouting effects – e.g. those that may reassign to the Spine Road from local corridors such as Church End or Coldhams Lane

Development generated vehicular trips were identified as described in the bus gate scenario and were again assigned to the network manually using Google Journey Planner routes to/from origin and destination locations. The development trips have in most cases been assigned to the shortest/ fastest journey time route. In this assessment with the spine road being complete vehicles trips can use either the eastern or western accesses to travel to/ from and through the development.

The 'complete link' scenario identifies the additional trips that could be expected to be reassign both strategically and locally link. The 'complete link' assessment utilises Automatic Number Plate Recognition (ANPR) data and a logit model to estimate the potential local and strategic reassignment on the network.

ANPR and Journey turning count information was used to identify existing traffic levels and to identify local and strategic trip movements on these routes tested. In addition the ANPR data was used to identify the number of trips that currently use Church End as a 'rat run'.

The logit model is a spreadsheet model which was used to determine people's route choice between two route options on the network based on:

- journey times
- how likely they are to change between routes
- other factors which may deter travellers from changing route

Journey times and distances for each route were identified using HERE data. An assessment using Google data was provided as a comparator.

Spine Road Assessment Net difference in traffic flow

Figure 1 – Net Vehicular Trip – AM Peak (0800-0900)

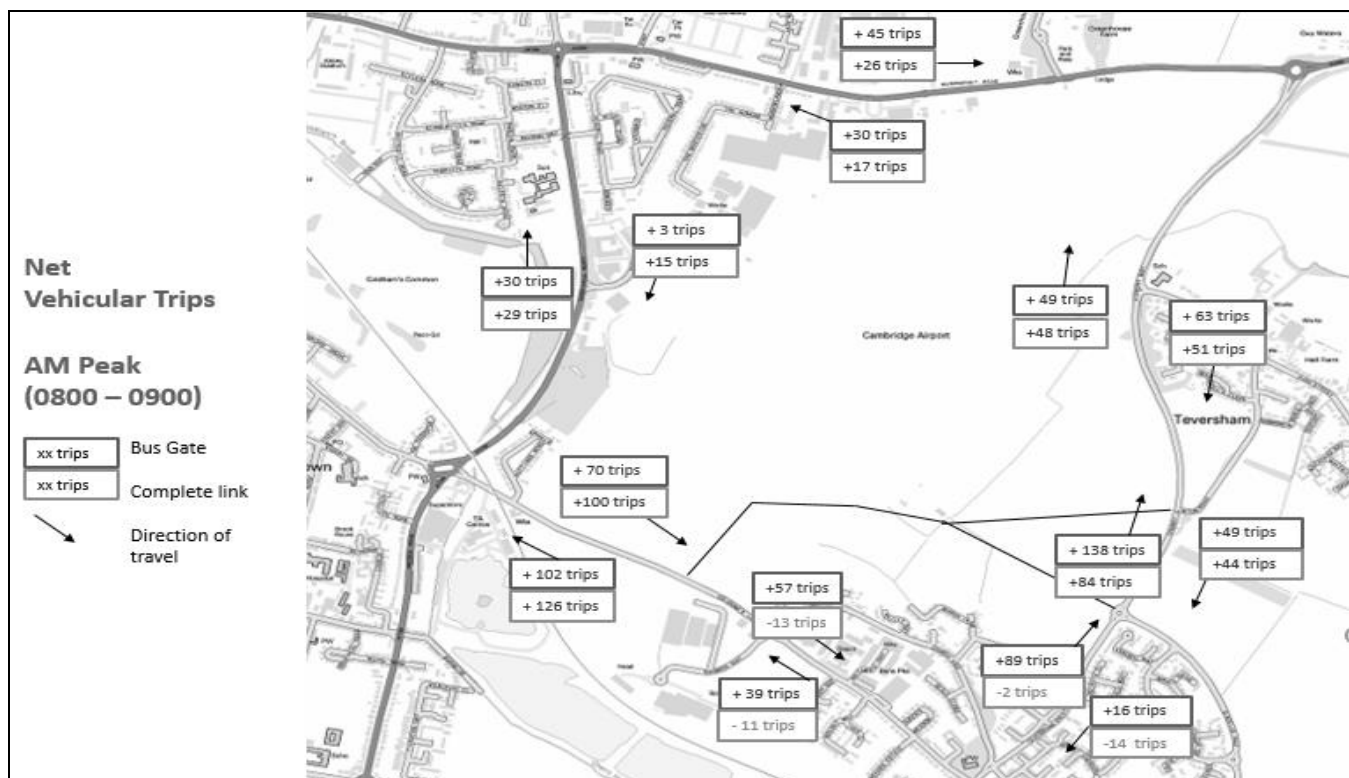
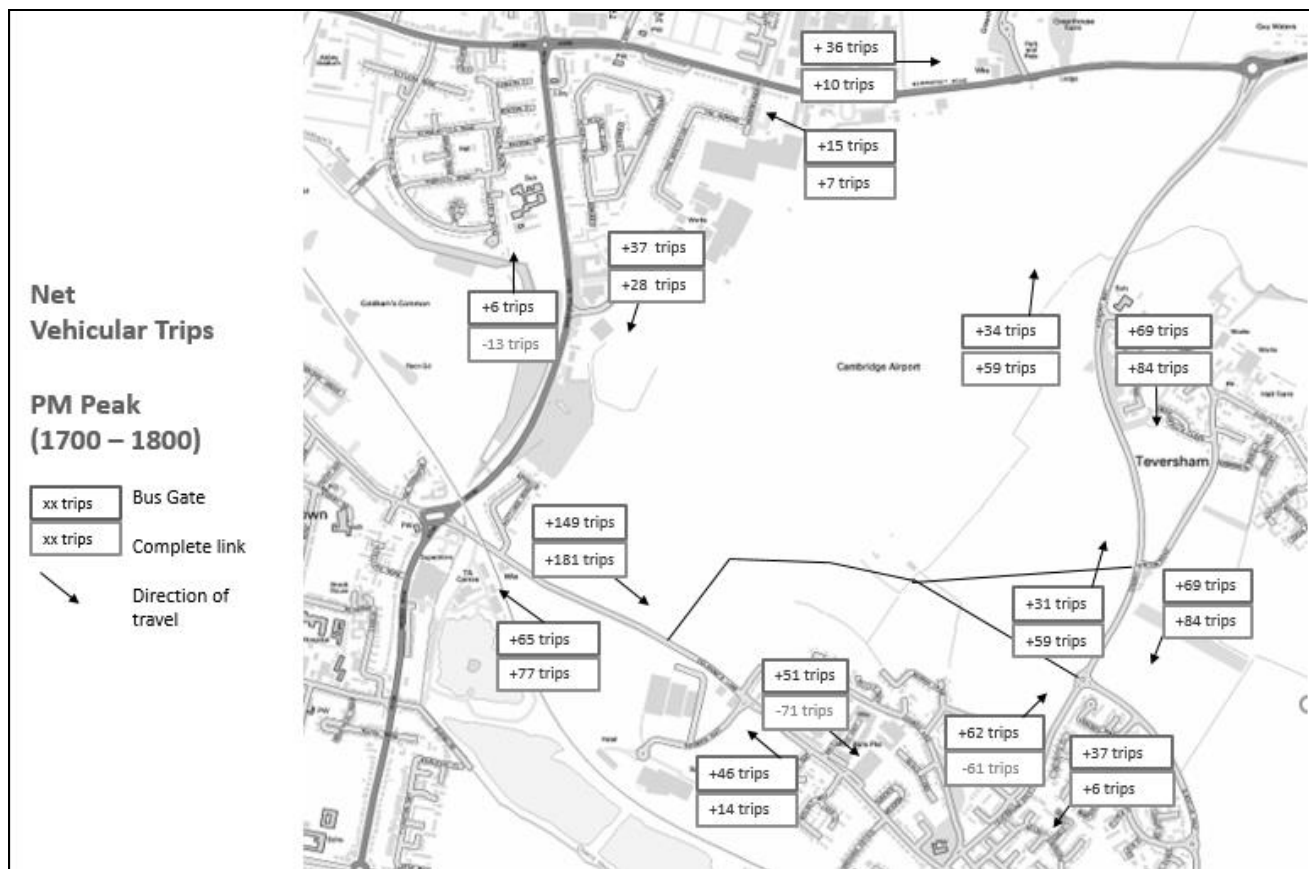


Figure 2 – Net Vehicular Trip – PM Peak (1700-1800)



Traffic Flow differences for each scenario compared to the 2016 observed flow

Net Veh Flow	AM Peak (0800 – 0900)		
	Observed 2016 Flows	BUS GATE	COMPLETE LINK
Airport Way Corridor	770	+49	+48
Northbound	893	+63	+51
Southbound	1,663	+112	+99
Total			
Coldhams Lane	353	+70	+100
Eastbound	553	+102	+126
Westbound	906	+172	+226
Total			
Cherry Hinton Road	362	+89	-2
Corridor	531	+16	-26
Northbound	893	+105	-28
Southbound			
Total			
Coldhams Lane /	280	+57	-3
Church End Corridor	407	+39	-10
Eastbound	687	+96	-23
Westbound			
Total			
Newmarket Road	390	+45	+26
Corridor	1160	+30	+17
Eastbound	1550	+75	+43
Westbound			
Total			
Barnwell Road Corridor	596	+30	+29
Northbound	704	+3	+15
Southbound	1,300	+33	+44
Total			

Net Veh Flow	PM PEAK (1700-1800)		
	Observed 2016 Flows	BUS GATE	COMPLETE LINK
Airport Way Corridor Northbound Southbound Total	1,139 650 1,789	+34 +69 +103	+59 +84 +143
Coldhams Lane Eastbound Westbound Total	698 575 1,273	+149 +65 +214	+181 +77 +258
Cherry Hinton Road Corridor Northbound Southbound Total	529 454 953	+62 +37 +99	-61 +6 -55
Coldhams Lane / Church End Corridor Eastbound Westbound Total	507 332 839	+52 +46 +97	-71 +14 -57
Newmarket Road Corridor Eastbound Westbound Total	743 439 1,182	+36 +15 +51	-0 +7 +7
Barnwell Road Corridor Northbound Southbound Total	764 816 1,580	+6 +37 +43	-13 +28 +15

Church End Impact Assessment

Net Veh Flow	AM Peak (0800 – 0900)			PM Peak (1700 – 1800)		
	Observed 2016 Flows	BUS GATE	COMPLETE LINK*	Observed 2016 Flows	BUS GATE	COMPLETE LINK*
Church End Eastbound	113	+18	-7	322	+6	-36
Westbound	107	+3	-5	80	+3	+7
Total	220	+21	-12	402	+12	-29

* Note – The Table above assumes that the local reassignment of traffic to the spine road from the Coldhams Lane / Church End Corridor is split 50/50 across the two routes. This assumption is yet to be agreed and therefore the above numbers of trips using each route may change.