



# **Cambridge South East Transport Phase 2**

Outline Business Case

Appendix I: Social Impact Appraisal

15 May 2020



Mott MacDonald  
22 Station Road  
Cambridge CB1 2JD  
United Kingdom

T +44 (0)1223 463500  
mottmac.com

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# Executive Summary

This report is a Social Impact appraisal considering the impact of five proposed travel hub, associated public transport (PT) and non-motorised route options for Cambridge South East Transport (CSET) Phase 2. The client has assigned colours as names for the five ‘do something’ scheme options. Each option has been assessed using guidance from WebTAG, although due to a lack of quantitative data at this stage, and for the assessment to be proportionate for the shortlisted options stage, a high-level qualitative assessment has been undertaken.

The summary assessment scores for the social impact (SI) appraisals can be seen in Table 1. Discussion and appraisal surrounding each impact can be found in further chapters.

**Table 1: Social Impact Appraisal Summary Scores for Scheme Options**

	Travel Hub Site A	Travel Hub Site B		Travel Hub Site C	
	Purple	Brown	Pink	Black	Blue
<b>Accidents</b>	Slight beneficial	Slight beneficial	Slight beneficial	Slight beneficial	Slight beneficial
<b>Physical activity</b>	Moderate beneficial	Moderate beneficial	Moderate beneficial	Moderate beneficial	Moderate beneficial
<b>Security</b>	Moderate beneficial	Moderate beneficial	Moderate beneficial	Moderate beneficial	Moderate beneficial
<b>Severance</b>	Moderate beneficial	Moderate beneficial	Moderate beneficial	Moderate beneficial	Moderate beneficial
<b>Journey quality</b>	Moderate beneficial	Moderate beneficial	Moderate beneficial	Moderate beneficial	Moderate beneficial
<b>Option and non-use values</b>	Large beneficial	Large beneficial	Large beneficial	Large beneficial	Large beneficial
<b>Accessibility</b>	Slight beneficial	Slight beneficial	Slight beneficial	Slight beneficial	Slight beneficial
<b>Personal affordability</b>	Neutral	Neutral	Neutral	Neutral	Neutral

Source: Mott MacDonald

Across all options, there will be largely beneficial social impacts, with ‘option and non-use values’ bringing about the largest benefits due to the large potential catchment area.

# 1 Introduction

## 1.1 Appraisal Overview

Mott MacDonald has been commissioned by the Greater Cambridgeshire Partnership to support the development of the Outline Business Case (OBC) for the Cambridge South East Transport (CSET) Phase 2 scheme. This report presents the results of the social impact (SI) appraisal of the five schemes that have been shortlisted at OBC stage. This SI appraisal has been carried out at a high level, proportionate to the size of the schemes, the availability of data and the stage of the appraisal. A detailed SI appraisal will be undertaken for the preferred option at Full Business Case (FBC) stage, should more detailed data become available.

## 1.2 Report Purpose

Each SI is assessed on a seven-point scale of beneficial, adverse or neutral impacts, with a score then input into the Appraisal Summary Table (AST). The seven-point scale for SI is set out in Table 2.

**Table 2: SI Assessment Scores**

Assessment	
Large beneficial	✓✓✓
Moderate beneficial	✓✓
Slight beneficial	✓
Neutral	-
Slight adverse	x
Moderate adverse	xx
Large adverse	xxx

Source: Mott MacDonald based on WebTAG Unit A4.1 and A4.2



## 2 Social Impact Appraisal

### 2.1 Introduction

A SI appraisal covers the human experience of a transport system and its impact on social factors not considered as part of economic or environmental appraisals. The eight social impacts that should be considered as part of a SI appraisal are:

- Accidents
- Physical activity
- Security
- Severance
- Journey Quality
- Option and non-use values
- Accessibility
- Personal affordability

Methods prescribed in WebTAG Unit A4.1 have been used to determine any beneficial or adverse impacts relating to the five shortlisted schemes. In most instances, social impact appraisals are qualitative due to the lack of quantifiable data, though, for some impacts, quantitative data is used. A full summary of the methodology and rationale for scoping in or out an impact for this scheme can be found in Table 3.

**Table 3: SI Scoping Rationale and Approach**

Social Impact	Methodology Guidance from WebTAG Unit A4.1	Scoped In	Rationale	Approach
Accidents	Guidance suggests that in most cases it is proportionate to calculate and present the monetary value of accidents	Yes	Off road public transport services would reduce interaction with cars and active mode users	At this stage it is unknown whether detailed COBALT analysis will be undertaken due to the relatively small size of the scheme. Should there be no modelling data, it is proposed that a high-level quantitative approach using Stats 19 data be used.
Physical activity	For schemes that are deemed to have a neutral or slight impact on physical activity, it is satisfactory to conduct a qualitative assessment. Where significant numbers of active travel users are affected, physical activity may be monetised.	Yes	Physical activity impacts should be assessed due to the introduction of cycling infrastructure under the various scheme options	Qualitative assessment at present. Monetisation of Physical Activity impacts may be necessary at FBC stage.
Security	Security impacts are assessed and presented qualitatively, using the security indicator worksheet.	Yes	Security impacts may be experienced in and around the new travel hub.	High level qualitative assessment based on security impacts worksheet.

Social Impact	Methodology Guidance from WebTAG Unit A4.1	Scoped In	Rationale	Approach
Severance	Severance impacts are assessed and presented qualitatively using the severance impacts worksheet.	Yes	Temporary and permanent severance impacts are expected as a result of the scheme.	Qualitative assessment
Journey quality	A qualitative assessment is proportionate in most cases where an intervention does not aim to directly influence quality factors.	Yes	Positive journey quality impacts are expected.	Qualitative assessment based on journey quality indicators
Option and non-use values	Option and non-use values should be assessed by calculating the scale of impact and estimating the number of households within the impacted area that could experience option and non-use value impacts.	Yes	Option and non-use values should be assessed where the intervention includes measures that will substantially change the availability of transport services within the study area.	Quantitative analysis to give the number of impacted households and qualitative analysis used to show the nature of the transport services proposed, the nature of the change in service and alternatives available to households in the absence of the scheme. The threshold for inclusion is those MSOA's where more than 100 people travel to work in the area where the Cambridge Biomedical Campus is located. This catchment area broadly aligns with the Cambridge Travel to Work Area (TTWA).
Accessibility	Accessibility impact appraisal should consider current and future transport challenges. There are five key barriers which should be considered as part of an accessibility appraisal	Yes	Accessibility impacts may arise because of the introduction of new public transport services.	Qualitative assessment at this stage. A detailed isochrone analysis will be undertaken as part of the FBC distributional impact assessment if proposed public transport timetables are available.
Affordability	Guidance suggests that TUBA outputs may be used, but if the outputs are not sufficiently qualitative analysis is appropriate.	Yes	Affordability impacts are expected in terms of reduction in parking charges, public transport fares charges and changes in car fuel costs.	Qualitative analysis to be updated once TUBA outputs are available.

Source: Mott MacDonald and WebTAG Unit A4.1

While the SI appraisal looks at the social impacts of the schemes on the whole population, a number of impacts are further assessed as part of Appendix J: Distributional Impact Appraisal, document reference: 403394-MMD-BCA-00-RP-BC-374, which looks at the impact of the schemes on vulnerable population groups, and whether any impacts are proportionate.

## 3 Accidents

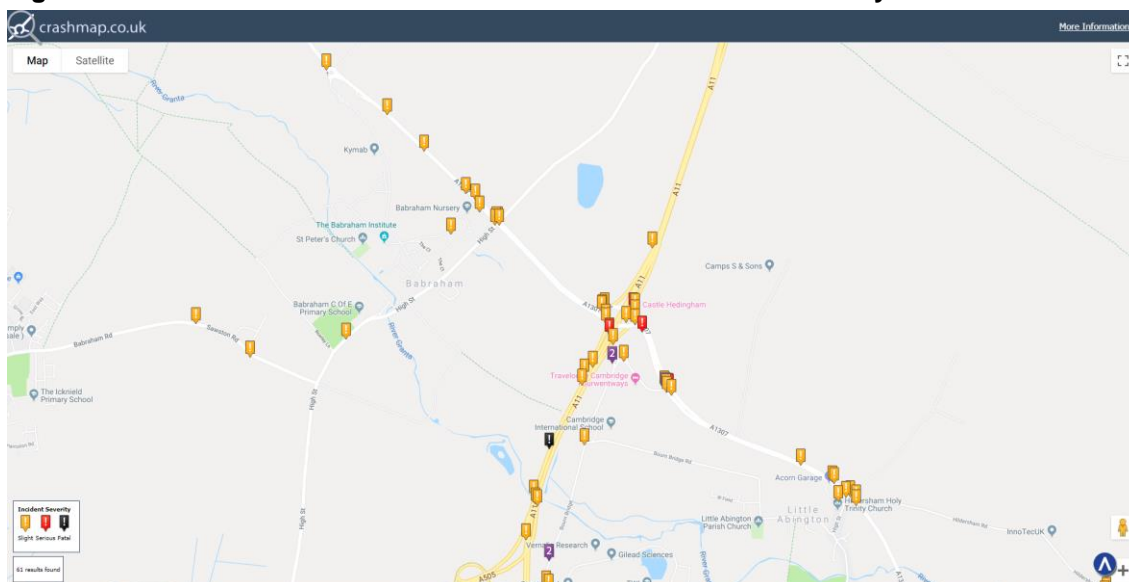
### 3.1 Accidents Overview

Transport interventions can affect the risk of injuries, casualties and fatalities as a result of accidents. Accidents can occur across all modes of transport and can impact non-users as well as users. At present, COBALT outputs from the transport model are not available. It is expected that this data will be available at FBC stage, and if so, a full accident social appraisal will be conducted.

Figure 1 and Figure 2 demonstrate that over a five-year period, there have been several accidents of varying severity in the areas surrounding the A11/A1307 junction and the A1307 route into Cambridge. On the A1307 corridor between 2013 and 2018 there were four fatal accidents, 25 serious accidents and 110 slight accidents<sup>1</sup>. The A1307 is locally regarded as one of the most dangerous roads in Cambridgeshire, with collision cluster sites identified along the road. An off-road public transport alignment would not only remove the risk posed by interaction with other vehicles, but the expectation is that the reduced number of vehicles on the network would lead to a reduction in accidents, though at this stage it should be noted that this is only an expectation and further analysis will be undertaken at FBC stage.

Not included in collision data relating to the A1307, but accidents worth noting are the cyclist fatality whereby a cyclist was hit by a bus on the Cambridge Guided Busway, as a result of swerving to avoid a group of pedestrians on the non-motorised user (NMU) route<sup>2</sup> and the fatality of an elderly woman who was hit at night by a bus on the existing Cambridge Guided Busway.<sup>3</sup>

**Figure 1: Collisions Within the A11/A1307 Junction Area over a Five-year Period**

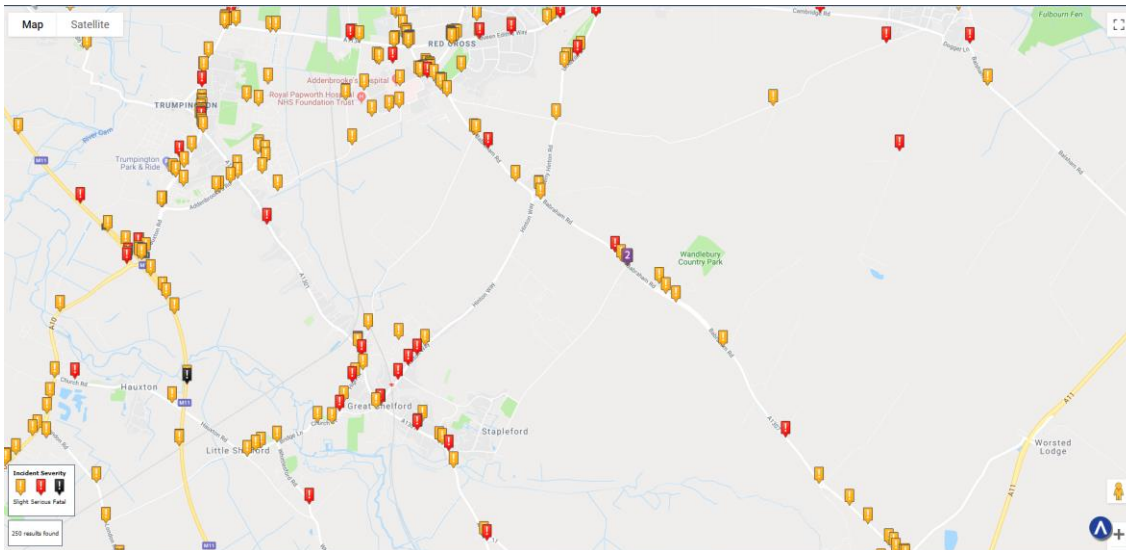


<sup>1</sup> DfT Road traffic statistics, 2013-2018

<sup>2</sup> <https://www.bbc.co.uk/news/uk-england-cambridgeshire-48136501> Accessed 01/08/2019

<sup>3</sup> <https://www.bbc.co.uk/news/uk-england-cambridgeshire-34854616> Accessed 02/08/2019

**Figure 2: Collisions in the Cambridge Biomedical Campus and A1307 Area over a Five-year Period**



Source: [www.crashmap.co.uk](http://www.crashmap.co.uk). Collision data source: Department for Transport. Accessed 31/07/2019

Table 4 summarises accident impacts for each of the scheme options.

**Table 4: Summary of Accident Impacts**

Site	Option	Qualitative Comments	Summary Assessment Score
Travel Hub Site A	Purple	Though detailed modelling data is currently unavailable, it is expected that the segregated nature of the PT and NMU route will result in fewer accidents, therefore bringing about beneficial impacts. As the impacts have not been quantified, the summary assessment score has been given as slight.	Slight beneficial
Travel Hub Site B	Brown	Though detailed modelling data is currently unavailable, it is expected that the segregated nature of the PT and NMU route will result in fewer accidents, therefore bringing about beneficial impacts. As the impacts have not been quantified, the summary assessment score has been given as slight.	Slight beneficial
	Pink	Though detailed modelling data is currently unavailable, it is expected that the segregated nature of the PT and NMU route will result in fewer accidents, therefore bringing about beneficial impacts. As the impacts have not been quantified, the summary assessment score has been given as slight.	Slight beneficial
Travel Hub Site C	Black	Though detailed modelling data is currently unavailable, it is expected that the segregated nature of the PT and NMU route will result in fewer accidents, therefore bringing about beneficial impacts. As the impacts have not been quantified, the summary assessment score has been given as slight.	Slight beneficial
	Blue	Though detailed modelling data is currently unavailable, it is expected that the segregated nature of the PT and NMU route will result in fewer accidents, therefore bringing about beneficial impacts. As the impacts have not been quantified, the summary assessment score has been given as slight.	Slight beneficial

Source: Mott MacDonald

## 4 Physical Activity

### 4.1 Physical Activity Overview

There is a recognised relationship between transport, the environment and health impacts, with transport affecting levels of physical activity that people engage in. Physical activity levels can be affected through the promotion of active travel modes over motorised transport and through the provision of infrastructure and facilities that support active travel modes, such as cycle storage facilities and segregated cycle lanes.<sup>4</sup>

A new, approximately 3.5-metre wide route for pedestrians and cyclists would be built alongside the new public transport route. It is proposed that this non-motorised user (NMU) route be separated from the public transport route by a 1.5-metre grassed verge. Cycle parking at the travel hubs would be provided at a rate of approximately 10% of car parking spaces, 5% which would be secure cycle boxes and 5% covered racks. There is also proposed provision at the intermediate route stops, though less extensive than those at the travel hubs. The cycle facilities and the designated NMU route aim to improve physical activity levels in the area.

Along the existing A1307 corridor into Cambridge, levels of active travel commuting are around 24%, which is below the Cambridge average of 30%,<sup>5</sup> (though improvements have been made to the cycling and pedestrian infrastructure in the time since the 2011 Census, and this number may therefore be higher). Cambridge is now widely regarded as the cycling capital of the UK<sup>6</sup> and Cycling UK estimates that around a third of trips in the city are made by bike.<sup>5</sup> Research into the impact of Cambridge Guided Busway on levels of cycling concluded that 85% of the effect on increased uptake of cycling could be explained by the use of infrastructure<sup>7</sup>, highlighting the importance of the NMU route and the potential positive physical activity impacts.

At FBC stage it is expected that an Active Modes Appraisal Tool (AMAT, Tag Unit A5.1) would be carried out on the preferred scheme alignment to determine monetised impacts of reduced risk of premature deaths and absenteeism.

Table 5 compares the physical activity impacts for each of the scheme options.

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<sup>4</sup> WebTAG Unit A4.1 Social Impact Appraisal

<sup>5</sup> 2011 Census Travel to Work data

<sup>6</sup> Cycling UK (2017) 'Cycling in Cambridgeshire', <https://www.cyclinguk.org/cycle/cycling-cambridgeshire>

<sup>7</sup> Prins, R., Panter, J., Heinen, E., Griffin, S. and Ogilvie, D. (2016). Causal pathways linking environmental change with health behaviour change: Natural experimental study of new transport infrastructure and cycling to work. *Preventive Medicine*, 87, pp.175-182.

**Table 5: Summary of Physical Activity Impacts**

Site	Option	Qualitative Comments	Summary Assessment Score
Travel Hub Site A	Purple	The travel hub will provide facilities such as cycle storage to be used in conjunction with the NMU route. Cycling and walking promotion are considered key components of the NMU route and therefore beneficial physical activity impacts are expected. Concept designs suggest that the NMU route will be wide enough to accommodate cyclists and pedestrians travelling in both directions., reducing congestion and therefore increasing the attractiveness of physical activity. Some improvements to the areas immediately surrounding the proposed stop locations related to cyclist and pedestrian comfort and safety would be required. These improvements could further increase the attractiveness of residents joining the route at intermediate stops from surrounding settlements.	Moderate beneficial
	Brown	The travel hub will provide facilities such as cycle storage to be used in conjunction with the NMU route. Cycling and walking promotion are considered key components of the NMU route and therefore beneficial physical activity impacts are expected. Concept designs suggest that the NMU route will be wide enough to accommodate cyclists and pedestrians travelling in both directions., reducing congestion and therefore increasing the attractiveness of physical activity. Some improvements to the areas immediately surrounding the proposed stop locations related to cyclist and pedestrian comfort and safety would be required. These improvements could further increase the attractiveness of residents joining the route at intermediate stops from surrounding settlements.	Moderate beneficial
Travel Hub Site B	Pink	The travel hub will provide facilities such as cycle storage to be used in conjunction with the NMU route. Cycling and walking promotion are considered key components of the NMU route and therefore beneficial physical activity impacts are expected. Concept designs suggest that the NMU route will be wide enough to accommodate cyclists and pedestrians travelling in both directions., reducing congestion and therefore increasing the attractiveness of physical activity. Some improvements to the areas immediately surrounding the proposed stop locations related to cyclist and pedestrian comfort and safety would be required. These improvements could further increase the attractiveness of residents joining the route at intermediate stops from surrounding settlements.	Moderate beneficial
	Black	The travel hub will provide facilities such as cycle storage to be used in conjunction with the NMU route. Cycling and walking promotion are considered key components of the NMU route and therefore beneficial physical activity impacts are expected. Concept designs suggest that the NMU route will be wide enough to accommodate cyclists and pedestrians travelling in both directions., reducing congestion and therefore increasing the attractiveness of physical activity. Some improvements to the areas immediately surrounding the proposed stop locations related to cyclist and pedestrian comfort and safety would be required. These improvements could further increase the attractiveness of residents joining the route at intermediate stops from surrounding settlements.	Moderate beneficial
Travel Hub Site C	Blue	The travel hub will provide facilities such as cycle storage to be used in conjunction with the NMU route. Cycling and walking promotion are considered key components of the NMU route and therefore beneficial physical activity impacts are expected. Concept designs suggest that the NMU route will be wide enough to accommodate cyclists and pedestrians travelling in both directions., reducing congestion and therefore increasing the attractiveness of physical activity. Some improvements to the areas immediately surrounding the proposed stop locations related to cyclist and pedestrian comfort and safety would be required. These improvements could further increase the attractiveness of residents joining the route at intermediate stops from surrounding settlements.	Moderate beneficial

Source: Mott MacDonald

# 5 Security

## 5.1 Security Overview

Transport interventions can affect the levels of real and perceived security for transport users. There are security impacts for transport users as they are approaching, travelling within and parked at the travel hub site. There are also personal security implications for users while they are travelling on transport and for cyclists and pedestrians while using the NMU route, relating to lighting and visibility, formal and informal surveillance and segregation. This appraisal considers the real and perceived security impacts to road users, public transport users and active travel users.

The scheme aims to encourage mode shift from car to public transport and active modes by means of a travel hub and a new off-road public transport and non-motorised user route. The scheme will provide mitigation for some negative impacts of car users leaving their vehicles through security measures designed within the travel hub facilities delivering high security indicators.

At FBC level, once more details surrounding the design of the preferred travel hub and route are understood, a more detailed security impacts worksheet will be used to carry out an appraisal of security impacts.

Table 6 compares the security impacts for each of the scheme options.



**Table 6: Summary of Security Impacts**

Site	Option	Qualitative Comments	Summary Assessment Score
Travel Hub Site A	Purple	Increased surface expansion could result in more users being able to park in a secure location. The proposed travel hub and PT route will benefit from good levels of both formal and informal security, including CCTV systems and passive surveillance from workers and other users. It is expected that lighting in the travel hub will be to daylight standard though there could be perceived personal security concerns for pedestrians and cyclists using the NMU route during off-peak and darker periods as a result of an unlit route.	Moderate beneficial
Travel Hub Site B	Brown	Increased surface expansion could result in more users being able to park in a secure location. The proposed travel hub and PT route will benefit from good levels of both formal and informal security, including CCTV systems and passive surveillance from workers and other users. It is expected that lighting in the travel hub will be to daylight standard though there could be perceived personal security concerns for pedestrians and cyclists using the NMU route during off-peak and darker periods as a result of an unlit route.	Moderate beneficial
	Pink	Increased surface expansion could result in more users being able to park in a secure location. The proposed travel hub and PT route will benefit from good levels of both formal and informal security, including CCTV systems and passive surveillance from workers and other users. It is expected that lighting in the travel hub will be to daylight standard though there could be perceived personal security concerns for pedestrians and cyclists using the NMU route during off-peak and darker periods as a result of an unlit route.	Moderate beneficial
Travel Hub Site C	Black	Increased surface expansion could result in more users being able to park in a secure location. The proposed travel hub and PT route will benefit from good levels of both formal and informal security, including CCTV systems and passive surveillance from workers and other users. It is expected that lighting in the travel hub will be to daylight standard though there could be perceived personal security concerns for pedestrians and cyclists using the NMU route during off-peak and darker periods as a result of an unlit route.	Moderate beneficial
	Blue	Increased surface expansion could result in more users being able to park in a secure location. The proposed travel hub and PT route will benefit from good levels of both formal and informal security, including CCTV systems and passive surveillance from workers and other users. It is expected that lighting in the travel hub will be to daylight standard though there could be perceived personal security concerns for pedestrians and cyclists using the NMU route during off-peak and darker periods as a result of an unlit route.	Moderate beneficial

Source: Mott MacDonald

## 6 Severance Impacts

### 6.1 Severance Overview

Severance is defined in WebTAG as the separation of residents from facilities and services that they use within their community that is caused by a substantial change in transport infrastructure or change in traffic flows<sup>8</sup>. Severance primarily concerns pedestrians, as cyclists generally move around the transport network differently. Severance impacts are classified according to four broad levels; none, slight, moderate and severe.

All options are expected to result in minor adverse severance impacts at a number of points across the planned route. All scheme options would cross the following:

- Two shared use cycle routes south of Cambridge Biomedical Campus and the Sawston Road route;
- One bridleway to the east of Stapleford;
- One restricted byway to the north of Sawston;
- One public footpath to the east of Sawston and
- Footways alongside the carriageway on Hinton Road and Haverhill Road.

In addition, all options other than Purple would cross the footpath linking Newmarket Road with Babraham while the Blue and Black routes require additional crossing provision across Newmarket Road, the A11 and the A1307.

It is important that appropriate crossing points are provided at these points to ensure pedestrian and cycle journeys can still be made. The expected two-way flow of vehicles on the public transport route is 16 per hour, meaning that the majority of pedestrian crossing movements will be unhindered. While it is acknowledged that at the locations specified above there will be some minor adverse severance impacts, both temporary during construction and permanent once operational, the broader severance impacts of the scheme including numerous dedicated NMU crossing facilities provide more significant beneficial impacts.

At present, the A11 acts as a major barrier to severance with a small footbridge connecting Babraham with Granta Park, Little Abington and Great Abington. The footbridge is stepped on either side making it inaccessible for pedestrians with mobility issues, parents with pushchairs and other NMU's such as cyclists and equestrians. An improved NMU route as part of the travel hub design will alleviate severance issues for all users, and particularly those users mentioned above who currently cannot cross the A11. For all users, there will be beneficial severance impacts in the areas surrounding the travel hub arising from the improved facilities.

Table 7 compares the severance impacts for each of the scheme options.

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<sup>8</sup> WebTAG Unit A4.1 Social Impact Appraisal

**Table 7: Summary of Severance Impacts**

Site	Option	Qualitative Comments	Summary Assessment Score
Travel Hub Site A	Purple	While there are some adverse severance impacts at specific locations mentioned above, the broader impacts including the improved crossing facilities across the A11, the dedicated NMU crossing points and the broadly unhindered movements due to the relatively infrequent flows of public transport outweigh these adverse impacts. There are fewer existing footpaths and cycle paths that would be impacted during construction and operation.	Moderate beneficial
Travel Hub Site B	Brown	While there are some adverse severance impacts at specific locations mentioned above, the broader impacts including the improved crossing facilities across the A11, the dedicated NMU crossing points and the broadly unhindered movements due to the relatively infrequent flows of public transport outweigh these adverse impacts.	Moderate beneficial
	Pink	While there are some adverse severance impacts at specific locations mentioned above, the broader impacts including the improved crossing facilities across the A11, the dedicated NMU crossing points and the broadly unhindered movements due to the relatively infrequent flows of public transport outweigh these adverse impacts.	Moderate beneficial
Travel Hub Site C	Black	While there are some adverse severance impacts at specific locations mentioned above, the broader impacts including the improved crossing facilities across the A11, the dedicated NMU crossing points and the broadly unhindered movements due to the relatively infrequent flows of public transport outweigh these adverse impacts. The location of Travel Hub Site C means that the NMU and PT routes would be required to cross both the A11 and the A1307, requiring additional crossing points.	Moderate beneficial
	Blue	While there are some adverse severance impacts at specific locations mentioned above, the broader impacts including the improved crossing facilities across the A11, the dedicated NMU crossing points and the broadly unhindered movements due to the relatively infrequent flows of public transport outweigh these adverse impacts. The location of Travel Hub Site C means that the NMU and PT routes would be required to cross both the A11 and the A1307, requiring additional crossing points.	Moderate beneficial

Source: Mott MacDonald

# 7 Journey Quality Impacts

## 7.1 Journey Quality Overview

Journey quality impacts measure the real and perceived physical and social environment experienced while travelling. Factors that are not considered elsewhere in the appraisal such as crowding on public transport services, route uncertainty and the level of facilities are considered as part of this impact. Journey quality factors can influence travel choices, with poor journey quality dissuading individuals from making journeys on certain modes of transport, while good journey quality often goes unnoticed and becomes expected<sup>9</sup>.

Journey quality impacts can be divided into three categories, as below:

- Traveller care (including cleanliness, facilities, information and environment)
- Travellers' views
- Traveller stress (frustration, fear of potential accidents and route uncertainty).

Moderate impacts are expected when the number of users is between 500 and 10,000 per day. Detailed modelling surrounding number of users has yet to be completed, therefore these scores could change if future modelling becomes available.

Table 8 compares the journey quality impacts for each of the scheme options.

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<sup>9</sup> WebTAG Unit A4.1 Social Impact Appraisal

**Table 8: Summary of Journey Quality Impacts**

Site	Option	Qualitative Comments	Summary Assessment Score
Travel Hub Site A	Purple	Traveller care impacts are expected to be beneficial, with travellers benefitting from clean surroundings, good facilities and information and a pleasant travelling environment. Traveller stress would be expected to reduce as a result of the scheme. The scheme would encourage travellers to leave their vehicles at a travel hub, reducing the number of vehicles in Cambridge city centre and associated congestion and frustration. With an estimated eight services per hour from the travel hub to Cambridge City Centre, and approximately 2,000 car parking spaces proposed, wait times for services and stress associated with finding a parking space will be minimal. The NMU route is expected to be wide enough to accommodate a number of users including pedestrians, cyclists, horse riders and those on mobility scooters and electric bikes. The NMU route surface will be hard, appropriate for use in all weathers and will be segregated from the main PT route, improving journey quality. In order to protect residents' views and to address safety concerns, along certain stretches of the route, traveller views could be impacted by the design of the scheme.	Moderate beneficial
Travel Hub Site B	Brown	Traveller care impacts are expected to be beneficial, with travellers benefitting from clean surroundings, good facilities and information and a pleasant travelling environment. Traveller stress would be expected to reduce as a result of the scheme. The scheme would encourage travellers to leave their vehicles at a travel hub, reducing the number of vehicles in Cambridge city centre and associated congestion and frustration. With an estimated eight services per hour from the travel hub to Cambridge City Centre, and approximately 2,000 car parking spaces proposed, wait times for services and stress associated with finding a parking space will be minimal. The NMU route is expected to be wide enough to accommodate a number of users including pedestrians, cyclists, horse riders and those on mobility scooters and electric bikes. The NMU route surface will be hard, appropriate for use in all weathers and will be segregated from the main PT route, improving journey quality. In order to protect residents' views and to address safety concerns, along certain stretches of the route, traveller views could be impacted by the design of the scheme	Moderate beneficial
	Pink	Traveller care impacts are expected to be beneficial, with travellers benefitting from clean surroundings, good facilities and information and a pleasant travelling environment. Traveller stress would be expected to reduce as a result of the scheme. The scheme would encourage travellers to leave their vehicles at a travel hub, reducing the number of vehicles in Cambridge city centre and associated congestion and frustration. With an estimated eight services per hour from the travel hub to Cambridge City Centre, and approximately 2,000 car parking spaces proposed, wait times for services and stress associated with finding a parking space will be minimal. The NMU route is expected to be wide enough to accommodate a number of users including pedestrians, cyclists, horse riders and those on mobility scooters and electric bikes. The NMU route surface will be hard, appropriate for use in all weathers and will be segregated from the main PT route, improving journey quality. In order to protect residents' views and to address safety concerns, along certain stretches of the route, traveller views could be impacted by the design of the scheme	Moderate beneficial
Travel Hub Site C	Black	Traveller care impacts are expected to be beneficial, with travellers benefitting from clean surroundings, good facilities and information and a pleasant travelling environment. Traveller stress would be expected to reduce as a result of the scheme. The scheme would encourage travellers to leave their vehicles at a travel hub, reducing the number of vehicles in Cambridge city centre and associated congestion and frustration. With an estimated eight services per hour from the travel hub to Cambridge	Moderate beneficial

Site	Option	Qualitative Comments	Summary Assessment Score
		<p>City Centre, and approximately 2,000 car parking spaces proposed, wait times for services and stress associated with finding a parking space will be minimal. The NMU route is expected to be wide enough to accommodate a number of users including pedestrians, cyclists, horse riders and those on mobility scooters and electric bikes. The NMU route surface will be hard, appropriate for use in all weathers and will be segregated from the main PT route, improving journey quality in order to protect residents' views and to address safety concerns, along certain stretches of the route, traveller views could be impacted by the design of the scheme</p>	
	Blue	<p>Traveller care impacts are expected to be beneficial, with travellers benefitting from clean surroundings, good facilities and information and a pleasant travelling environment. Traveller stress would be expected to reduce as a result of the scheme. The scheme would encourage travellers to leave their vehicles at a travel hub, reducing the number of vehicles in Cambridge city centre and associated congestion and frustration. With an estimated eight services per hour from the travel hub to Cambridge City Centre, and approximately 2,000 car parking spaces proposed, wait times for services and stress associated with finding a parking space will be minimal. The NMU route is expected to be wide enough to accommodate a number of users including pedestrians, cyclists, horse riders and those on mobility scooters and electric bikes. The NMU route surface will be hard, appropriate for use in all weathers and will be segregated from the main PT route, improving journey quality. In order to protect residents' views and to address safety concerns, along certain stretches of the route, traveller views could be impacted by the design of the scheme</p>	Moderate beneficial

Source: Mott MacDonald

## 8 Option and Non-use Values

### 8.1 Option and Non-use Values Overview

Option value is the willingness-to-pay to preserve the option of using a transport services for trips not yet anticipated or currently undertaken by other modes. Non-use values are the values placed on the continued existence of a service, regardless of how likely it is that it may be used by the individual in the future. Tag Unit A4.1 states that option and non-use values should be assessed if the scheme includes measures that will substantially change the availability of transport services, therefore this impact has been included for appraisal <sup>10</sup>.

The Passenger Demand Forecasting Handbook gives indicative guidance on rail station catchment areas. While this is not a rail scheme, that indicative guidance has been used to judge the appropriate catchment area. The guidance suggests that a 'larger catchment' should be used for free standing towns, and given the nature of the scheme, it could be assumed that people would make fairly long journeys into the travel hub for onward travel into Cambridge, therefore it is appropriate that the catchment area is large enough to reflect this.

Analysis of 2011 Census Travel to Work data has identified areas where there are more than 100 people per Middle Super Output Area (MSOA) <sup>11</sup> who travel to work in the MSOA that includes Cambridge Biomedical Campus. This data, though indicative, is useful to identify a catchment area that could be used for option and non-use value impact analysis. This catchment area encompasses the more urban areas of Royston, Saffron Walden and Haverhill, as well as any rural areas between these centres and settlements along the route who could make use of intermediate stops. Given that the proposed route has two services an hour from Haverhill town centre, an additional two from Granta Park and then an additional four from the travel hub site, this catchment area seems appropriate to give a reasonable approximation of the size of the population affected. Considering these areas, the estimated number of households that could benefit from the option of using the transport schemes could be in excess of 40,000, past the threshold of 1,000 households that signifies large impacts. It is acknowledged that not all residents in this area will have access to a private car and therefore not all households will have the option to access the route and the actual numbers of households who would benefit from the option of the route may be lower.

Table 9 compares the option and non-use value impacts for each of the scheme options.

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<sup>10</sup> WebTAG Unit A4.1 Social Impact Appraisal

<sup>11</sup> A MSOA is a census boundary where the mean population is around 7,200

**Table 9: Summary of Option and Non-use Value Impacts**

Site	Option	Qualitative Comments	Summary Assessment Score
Travel Hub Site A	Purple	The addition of the public transport route from Haverhill, via the travel hub and onwards into Cambridge would give option values to approximately 40,000 households. Services running at eight per hour between the travel hub and Cambridge and a further two between Granta Park and Cambridge and two between Haverhill and Cambridge would give local residents a number of options for accessing the service and therefore better connect local towns and villages to services. There are some existing rail connections from more urban areas into Cambridge, though these journeys can be fairly long and can require connections. There is also some existing bus provision along the existing A1307 and A1301 into Cambridge.	Large beneficial
	Brown	The addition of the public transport route from Haverhill, via the travel hub and onwards into Cambridge would give option values to approximately 40,000 households. Services running at eight per hour between the travel hub and Cambridge and a further two between Granta Park and Cambridge and two between Haverhill and Cambridge would give local residents a number of options for accessing the service and therefore better connect local towns and villages to services. There are some existing rail connections from more urban areas into Cambridge, though these journeys can be fairly long and can require connections. There is also some existing bus provision along the existing A1307 and A1301 into Cambridge.	Large beneficial
Travel Hub Site B	Brown	The addition of the public transport route from Haverhill, via the travel hub and onwards into Cambridge would give option values to approximately 40,000 households. Services running at eight per hour between the travel hub and Cambridge and a further two between Granta Park and Cambridge and two between Haverhill and Cambridge would give local residents a number of options for accessing the service and therefore better connect local towns and villages to services. There are some existing rail connections from more urban areas into Cambridge, though these journeys can be fairly long and can require connections. There is also some existing bus provision along the existing A1307 and A1301 into Cambridge.	Large beneficial
	Black	The addition of the public transport route from Haverhill, via the travel hub and onwards into Cambridge would give option values to approximately 40,000 households. Services running at eight per hour between the travel hub and Cambridge and a further two between Granta Park and Cambridge and two between Haverhill and Cambridge would give local residents a number of options for accessing the service and therefore better connect local towns and villages to services. There are some existing rail connections from more urban areas into Cambridge, though these journeys can be fairly long and can require connections. There is also some existing bus provision along the existing A1307 and A1301 into Cambridge.	Large beneficial
Travel Hub Site C	Blue	The addition of the public transport route from Haverhill, via the travel hub and onwards into Cambridge would give option values to approximately 40,000 households. Services running at eight per hour between the travel hub and Cambridge and a further two between Granta Park and Cambridge and two between Haverhill and Cambridge would give local residents a number of options for accessing the service and therefore better connect local towns and villages to services. There are some existing rail connections from more urban areas into Cambridge, though these journeys can be fairly long and can require connections. There is also some existing bus provision along the existing A1307 and A1301 into Cambridge.	Large beneficial
	Blue	The addition of the public transport route from Haverhill, via the travel hub and onwards into Cambridge would give option values to approximately 40,000 households. Services running at eight per hour between the travel hub and Cambridge and a further two between Granta Park and Cambridge and two between Haverhill and Cambridge would give local residents a number of options for accessing the service and therefore better connect local towns and villages to services. There are some existing rail connections from more urban areas into Cambridge, though these journeys can be fairly long and can require connections. There is also some existing bus provision along the existing A1307 and A1301 into Cambridge.	Large beneficial

Source: Mott MacDonald



## 9 Accessibility Impacts

### 9.1 Accessibility Impacts Overview

This section is focussed on local accessibility impacts that more vulnerable residents such as those with disabilities and older residents could experience. Residents without access to a private car and those from vulnerable social groups such as those with disabilities and the elderly can become more reliant on public transport, walking, cycling or lifts from friends and family and these networks can often lead to social exclusion. This scheme aims to better connect the areas around the South East of Cambridge, improving accessibility and connectivity between local areas. The CSET scheme is focused on both the travel hub, and onward travel by public transport and cycling and walking into the Cambridge Biomedical Campus and central Cambridge. Table 10 summarises the five key accessibility barriers, as identified in WebTAG Unit A4.1, Social Impact Appraisal. Accessibility is further assessed as part of Appendix J: Distributional Impact Appraisal, document reference: 403394-MMD-BCA-00-RP-BC-374, and at preferred option stage it is proposed that a more detailed strategic accessibility assessment would be undertaken.

**Table 10: Accessibility Barriers**

Barrier to Accessibility	Assessment
The availability and physical accessibility of public transport	The shortlisted schemes include improvements to public transport provision in the immediate area between Cambridge Biomedical Campus and the areas around Babraham and Little Abington. There will be wider public transport accessibility benefits to those who would travel by private car to one of the travel hubs, giving those residents (and particularly those in rural areas) quicker joint private car and public transport access to the centre, though to feel these benefits residents would have to access the travel hubs by car. Residents in the area between Haverhill and the travel hubs would benefit from an extended PT service into these areas. The nature of a guided busway makes it more accessible for wheelchair users and parents with pushchairs because of level boarding from the kerbside.
Cost of transport	Finalised costs of the services are unknown at present, though they are expected to be in line with existing costings for other bus routes and therefore no more or less affordable than present provision. For users of the travel hub part of the scheme, parking is expected to be free.
Services and activities located in inaccessible places	Most relevant services and activities are located in Cambridge City Centre or Haverhill town centre. These can be difficult to access by public transport, particularly for those living in more remote, rural locations. For those who live on the proposed routes, they would feel benefits associated with improved access to the centre. For those residents who live more remotely who currently find it difficult to access to services in more urban areas, these difficulties would likely still exist as a private car would be required to access the travel hub site to then join the service. Residents who have particular accessibility concerns can often find it difficult accessing services, even when it may be their nearest facility, and so it should not be assumed that everyone can or would want to use the proposed PT route.
Safety and security	Accessibility impacts surrounding safety and security are not expected to be significant, though some safety concerns relating to NMU access along existing routes serving the proposed NMU route and/or travel hubs have been identified. Certain demographic groups such as women, BAME residents and those with disabilities can feel more vulnerable to perceived security risks. An NMU Access Report conducted by Mott MacDonald has found that some existing footways leading to the proposed route do not meet minimum standards for path width to accommodate wheelchairs and pedestrians and, in general, safety and security on existing routes are of a concern. On the proposed new PT and NMU routes, safety and security impacts are less of a concern, and have been addressed in section 2.4.

Barrier to Accessibility	Assessment
Travel horizons	Travel horizons are not expected to broaden to a significant extent as a result of the scheme. Only those from the wider area with access to a private car will realise the full benefits of the scheme.

Source: Mott MacDonald based on WebTAG Unit A4.1

Table 11 compares the accessibility impacts for each of the scheme options.

**Table 11: Summary of Accessibility Impacts**

Site	Option	Qualitative Comments	Summary Assessment Score
Travel Hub Site A	Purple	The scheme aims to improve accessibility and connectivity in South East Cambridge, though for those residents who are currently limited by no access to a car, these limitations will still exist. Cambridge is the major centre of employment and services and this scheme aims to better link residents to these services and activities. Costs of transport are not expected to be significant, and while there are some safety and security concerns relating to existing routes, in general, there are no significant security concerns. Given that the benefits of this scheme will mostly be felt by those who access the travel hub site by private car, and accessibility impacts are primarily focussed on those without access to a car, benefits will be mostly felt by those living along the proposed route.	Slight beneficial
Travel Hub Site B	Brown	The scheme aims to improve accessibility and connectivity in South East Cambridge, though for those residents who are currently limited by no access to a car, these limitations will still exist. Cambridge is the major centre of employment and services and this scheme aims to better link residents to these services and activities. Costs of transport are not expected to be significant, and while there are some safety and security concerns relating to existing routes, in general, there are no significant security concerns. Given that the benefits of this scheme will mostly be felt by those who access the travel hub site by private car, and accessibility impacts are primarily focussed on those without access to a car, benefits will be mostly felt by those living along the proposed route.	Slight beneficial
	Pink	The scheme aims to improve accessibility and connectivity in South East Cambridge, though for those residents who are currently limited by no access to a car, these limitations will still exist. Cambridge is the major centre of employment and services and this scheme aims to better link residents to these services and activities. Costs of transport are not expected to be significant, and while there are some safety and security concerns relating to existing routes, in general, there are no significant security concerns. Given that the benefits of this scheme will mostly be felt by those who access the travel hub site by private car, and accessibility impacts are primarily focussed on those without access to a car, benefits will be mostly felt by those living along the proposed route.	Slight beneficial
Travel Hub Site C	Black	The scheme aims to improve accessibility and connectivity in South East Cambridge, though for those residents who are currently limited by no access to a car, these limitations will still exist. Cambridge is the major centre of employment and services and this scheme aims to better link residents to these services and activities. Costs of transport are not expected to be significant, and while there are some safety and security concerns relating to existing routes, in general, there are no significant security concerns. Given that the benefits of this scheme will mostly be felt by those who access the travel hub site by private car, and accessibility impacts are primarily focussed on those without access to a car, benefits will be mostly felt by those living along the proposed route.	Slight beneficial
	Blue	The scheme aims to improve accessibility and connectivity in South East Cambridge, though for those residents who are currently limited by no access to a car, these limitations will still exist. Cambridge is the major centre of employment and services and this scheme aims to better link residents to these services and activities. Costs of transport are not expected to be significant, and while there are some safety and security concerns relating to existing routes, in general, there are no significant security concerns. Given that the benefits of this scheme will mostly be felt by those who access the travel hub site by private car, and accessibility impacts are primarily focussed on those without access to a car, benefits will be mostly felt by those living along the proposed route.	Slight beneficial

Source: Mott MacDonald

# 10 Personal Affordability Impacts

## 10.1 Personal Affordability Overview

Monetary costs of travel can act as a major barrier to mobility for certain groups of people, for example those on lower incomes or from more deprived areas. While those on lower incomes can spend less money in absolute terms on travel, this can represent a greater proportion of their income. Changes to the transport network that involve changes in user charges can impact upon those from low income groups.

Table 12 compares the personal affordability impacts for each of the scheme options.

**Table 12: Summary of Personal Affordability Impacts**

Site	Option	Qualitative Comments	Summary Assessment Score
Travel Hub Site A	Purple	There are no expected personal affordability impacts as a result of any of the five scheme options. Parking at the travel hubs will be free of charge and the cost of public transport services into the centre is expected to be in line with costs on the rest of the network across Cambridge, though at the time of writing this has yet to be confirmed. There may be slight beneficial impacts that arise from the free parking, compared to the cost of parking in the city centre, and the reduction of miles travelled therefore a reduction in fuel consumption, though this could be offset by the cost of the public transport service.	Neutral
Travel Hub Site B	Brown	There are no expected personal affordability impacts as a result of any of the five scheme options. Parking at the travel hubs will be free of charge and the cost of public transport services into the centre is expected to be in line with costs on the rest of the network across Cambridge, though at the time of writing this has yet to be confirmed. There may be slight beneficial impacts that arise from the free parking, compared to the cost of parking in the city centre, and the reduction of miles travelled therefore a reduction in fuel consumption, though this could be offset by the cost of the public transport service.	Neutral
	Pink	There are no expected personal affordability impacts as a result of any of the five scheme options. Parking at the travel hubs will be free of charge and the cost of public transport services into the centre is expected to be in line with costs on the rest of the network across Cambridge, though at the time of writing this has yet to be confirmed. There may be slight beneficial impacts that arise from the free parking, compared to the cost of parking in the city centre, and the reduction of miles travelled therefore a reduction in fuel consumption, though this could be offset by the cost of the public transport service.	Neutral
Travel Hub Site C	Black	There are no expected personal affordability impacts as a result of any of the five scheme options. Parking at the travel hubs will be free of charge and the cost of public transport services into the centre is expected to be in line with costs on the rest of the network across Cambridge, though at the time of writing this has yet to be confirmed. There may be slight beneficial impacts that arise from the free parking, compared to the cost of parking in the city centre, and the reduction of miles travelled therefore a reduction in fuel consumption, though this could be offset by the cost of the public transport service.	Neutral
	Blue	There are no expected personal affordability impacts as a result of any of the five scheme options. Parking at the travel hubs will be free of charge and the cost of public transport services into the centre is expected to be in line with costs on the rest of the network across Cambridge, though at the time of writing this has yet to be confirmed. There may be slight beneficial impacts that arise from the free parking, compared to the cost of parking in the city centre, and the reduction of miles travelled therefore a reduction in fuel consumption, though this could be offset by the cost of the public transport service.	Neutral

Source: Mott MacDonald

# 11 Social Appraisal Summary

This appraisal has sought to best represent the anticipated beneficial and adverse social impacts that could be experienced as a result of the travel hub site, public transport and NMU route, proportionate to the stage of assessment and amounts of data available.

**Table 13: Social Impacts Summary Scores**

Impact Area	Scheme				
	Travel Hub Site A	Travel Hub Site B		Travel Hub Site C	
	Purple	Brown	Pink	Black	Blue
Accidents	✓	✓	✓	✓	✓
Physical activity	✓✓	✓✓	✓✓	✓✓	✓✓
Security	✓✓	✓✓	✓✓	✓✓	✓✓
Severance	✓✓	✓✓	✓✓	✓✓	✓✓
Journey quality	✓✓	✓✓	✓✓	✓✓	✓✓
Option and non-use values	✓✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓
Accessibility	✓	✓	✓	✓	✓
Personal affordability	-	-	-	-	-

Source: Mott MacDonald

As demonstrated in Table 13, initial qualitative analysis has found that the five scheme options will bring about broadly beneficial social impacts, with option and non-use impacts bringing the largest benefits as a result of the large potential catchment area that will benefit from the proposed additional public transport services.

