
To: Greater Cambridge Partnership
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Subject: Optimised alternative to Cambridge South East Transport Study proposal
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Updated 28 February 2022 with minor corrections and clarifications.

Executive Summary

The main objective of CSET is to get more people taking the bus to Cambridge and the Biomedical Campus (CBC) from south-east of the city. The need is urgent, as development of the site continues apace.

The problem is that congestion on the A1307 reduces the reliability and increases the operating costs of bus services, such as the 13 from Haverhill.

GCP's solution is to build a new bus-only road from the A1307–A11 interchange to the western edge of the CBC, whereafter buses would join the existing Guided Busway to Cambridge Station and then join the road network to reach the centre of Cambridge.

Congestion is mainly concentrated at the Cambridge end, in particular between the Hinton Way roundabout and the city centre. So, there is a good case for building a bus-only road from the Hinton Way roundabout to the Biomedical Campus and on to the Guided Busway. This would also serve a future expansion of the Campus, as proposed in the next Local Plan (see Figure 3).

However, building a bus road beyond Hinton Way, across the lower slopes of the Gog Magog Hills and the Granta river valley, adds enormously to the cost, environmental damage and delivery timescale for relatively little benefit. It may preclude ever reinstating a railway line between Cambridge and Haverhill. It will also sever the green belt, creating land parcels that will be hard to defend from future development. Landowners have already submitted proposals (in the last Call for Sites) to build on these fields, making explicit reference to GCP's plans. The cumulative impact on the Gog Magog Hills, one of the most important landscapes in the Cambridge area, will be significantly and permanently detrimental.

The proposed bus stops are at the edge of Great Shelford, Stapleford and Sawston. Busway services will compete with, and potentially undermine the viability of, the more convenient existing services through the centre of the villages.

Lastly, the basic Benefit–Cost Ratio for the GCP's scheme is stated to be 0.71, which represents a negative return on public investment (£92m of social benefit for £130m of investment).

We have put forward an alternative plan, which optimises one of the options GCP consulted on in 2018 and a proposal submitted at the time by Smarter Cambridge Transport. The guiding principle is to add a bus lane to the A1307 where, and only where, localised congestion significantly impacts the reliability of bus services. This would be deliverable quickly, and at a fraction of the cost of the CSET busway. It may be complemented by the creation of new cycle routes between the A11 and Great Shelford, from where the DNA cycle path and railway provide good connections into Cambridge.

The GCP did not progress a scheme along these lines partly because the specification required a bus road, fully segregated from traffic, to form part of a future Cambridgeshire Autonomous Metro (CAM). We believe this omission from the options appraisal will be a fatal flaw in the application for a Transport and Works Act Order.

Overview

This alternative proposal is based on Smarter Cambridge Transport's response to a CSET consultation in April 2018. It is designed to provide large benefits to bus users quickly, at modest cost and with minimal damage to the ecology and landscape.

It proposes:

- Up to 1.65km of new busway between the Cambridge Biomedical Campus and the A1307 at either the Hinton Way roundabout or the Babraham Park & Ride access junction.
- 1.1km of inbound bus lane from the Haverhill Rd junction to the Hinton Way roundabout.
- Conversion of 1km of the inside northbound lane running between Wandlebury and Magog Down to an inbound bus lane.
- 0.9km of outbound bus lane between the Babraham Institute roundabout and the start of the bus lane to the west of the Babraham High St junction (which was created as part of CSET Phase 1).
- An express bus stop on the roundabout serving the Babraham Institute, which would avoid bus users having to cross the A1307 to travel in either direction.
- Part-time traffic signals at the Babraham Institute roundabout to regulate the flow of traffic, preventing queues building southbound on the A1307 heading into the roundabout.
- Possibly switching access arrangements at Babraham Park & Ride, so that buses enter and exit via Cherry Hinton Rd, joining/leaving the new busway at the Hinton Way roundabout.

Strategic positioning of proposal

The longer-term transport solution is likely to be a rail link between Cambridge and Haverhill. This proposal provides a short-to-medium term solution during a time of high levels of uncertainty:

- Post-COVID travel patterns: more working from home and remote locations.
- National and local strategies for decarbonising transport, which almost certainly entails a large reduction in total vehicle-mileage.
- National and local policies on price-driven demand management (ULEZ, congestion charge, road pricing, Workplace Parking Levy).
- Evolution of Transport Appraisal Guidance with respect to methodologies and prices used to quantify carbon emissions and ecological damage.

Background

In 2018, GCP consulted on a Phase 1 package of ‘quick wins’, a bus-only road between the A11 and the Biomedical Campus, and two options for an inbound bus lane along the A1307:

- Strategy 1:** *A new segregated Mass Rapid Transit route from the A11 via Sawston to the Cambridge Biomedical Campus [which] would most likely form part of the Cambridgeshire Autonomous Metro being proposed by the Combined Authority.*
- Strategy 2:** *A new dedicated public transport link between the existing Babraham Road Park & Ride and the Cambridge Biomedical Campus; an inbound bus lane from Babraham Research Campus to the Babraham Road Park & Ride site.*
- Strategy 3:** *An inbound bus lane along the A1307 from Babraham Research Campus to the Addenbrooke’s Hospital roundabout.*

Neither Strategy 2 nor Strategy 3 addressed outbound delays, in particular those that are experienced regularly west of the Babraham Institute roundabout. There was also a heavy emphasis on how Strategy 1 (the “Mass Rapid Transit Route”) would be part of a wider Cambridgeshire Autonomous Metro (‘CAM’) network (see Figure 1).

Strategy 1 is the basis for the Transport and Works Act Order application (see Figure 2). However, with CAM now discontinued, there is no longer a plan for a connected network of Bus Rapid Transit routes, which was described as “most likely” in the consultation. In that context, it is unreasonable to rely on consultation feedback from 2018 in determining the preferred option to build now.

The expansion of the Biomedical Campus continues apace. The need to relieve demand to travel there by car grows ever more urgent. The alternative proposal we present here is designed to provide significant benefit rapidly for users of existing bus services from Haverhill, Babraham Park & Ride, and any future services using the A1307.

Alternative proposal in detail

Four Wentways to Babraham Institute roundabout (Figure 6)

A 0.9km outbound bus lane, up to the existing bus lane, created as part of CSET Phase 1, would give buses a near-continuous run of 1.6km. Traffic signals at the Babraham High St junction could give buses an uninterrupted run, and would also improve the safety of the junction.

There appears to be enough land within the existing highway to add an additional lane. However, there is a short section of modern wall on the north side of the highway through the wooded section, 250m south-east of the roundabout.

Consideration could also be given to adding an inbound bus lane along the same section if the benefits are sufficiently high. This would certainly entail widening beyond the highway boundary on the north side (to avoid the Babraham Hall boundary wall to the south).

Babraham Institute roundabout to Wandlebury

There is no current need for an inbound bus lane between the Babraham Institute roundabout to Wandlebury. As local transport policies are aiming to reduce traffic levels in Cambridge, there is no expectation that traffic on the A1307 will build significantly in the short to medium term.

Outbound, traffic does regularly build up in the lead-in to the Babraham Institute roundabout in the evening peak. This is because traffic leaving the Babraham Institute towards the A11 has priority over A1307 southbound traffic (by virtue of it being a roundabout). Part-time traffic signals would enable traffic flows to be regulated, preventing queues building on the A1307 southbound.

Adding a bus bay and an enclosed shelter just off the west side of the roundabout would provide a convenient location for express bus services to stop and pick up/set down passengers travelling in either direction. Bus users would no longer have to cross the A1307 when alighting from or boarding an eastbound service.

Wandlebury to Hinton Way roundabout (Figure 7)

The inside lane of the once-dualled section of the A1307 where it runs between Wandlebury (to the north) and Magog Down (to the south) could be converted to a 1,020m bus lane with no environmental damage. There is space already for a third, right-filter lane for vehicles turning right into Wandlebury. A reduced speed limit would ensure this junction operates safely.

A new 1,100m inbound bus lane From the Haverhill Rd junction to Hinton Way roundabout would extend the above bus lane to a total of 2.12km. Were that entire section to have stationary traffic, buses would be able to overtake over 300 vehicles.

Hinton Way roundabout to Biomedical Campus (Figure 5)

A dedicated busway between the A1307 and Dame Mary Archer Way would allow buses to

bypass congestion on Babraham Rd up to the Addenbrooke's roundabout. This would pass through land that has either already been released from the Green Belt for development, or is likely to as part of the next Local Plan.

Three options are envisaged:

1. Connect the busway to the Hinton Way roundabout only. Reconfigure the Babraham Park & Ride so that buses use the Cherry Hinton Rd access and cars the A1307 access.
2. Connect the busway to the A1307 at the Babraham P&R access junction. Continue the inbound bus lane to the Babraham P&R junction, replacing the layby outside Caius Farm Cottages.
3. Connect the busway to the Hinton Way roundabout and also to the Babraham P&R junction.

Complementary measures

Whittlesford travel hub

There is an urgent need to provide a regular bus connection between the Babraham Institute, Granta Park and Whittlesford Parkway station. This requires a bus stop and space for buses to turn around on the east side of the station. This can also serve as an interchange between buses running along the A1301 and buses running along the A505 (given that both should call at the railway station).

Six Mile Bottom parkway station

As part of plans to improve railway services between Cambridge and Ipswich, a new parkway station at Six Mile Bottom, accessible from the A11, would serve as a convenient railhead for many villages in South and East Cambridgeshire.

As part of plans for East West Rail, there could be direct services from here to Cambridge South station, amongst many other destinations.

Appendix 1: Illustrations

CAMBRIDGE SOUTH EAST TRANSPORT STUDY PROPOSALS

What are we consulting on?

Following public consultation in 2016 and further development of options in 2017, we have identified three strategies which would help deliver faster, more reliable and sustainable public transport options for journeys between Cambridge and the area to the south east.

Let us know which strategy you prefer by completing the online survey:
www.greatercambridge.org.uk/CambridgeSouthEastConsultation or
contacting us using the details on page 22.

Shorter-term proposals include bus priority, junction improvements, walking and cycling measures and road safety improvements along the A1307 between Haverhill and Cambridge. If the public consultation shows support for these proposals, it is intended to progress these works as quickly as possible.

Longer-term public transport improvements consist of three high-level strategies.

Strategy 1

- a new segregated Mass Rapid Transit route from the A11 via Sawston to the Cambridge Biomedical Campus
- a Park & Ride near the A11/A505 junction

- would most likely form part of the Cambridgeshire Autonomous Metro being proposed by the Combined Authority

Strategy 2

- a new dedicated public transport link between the existing Babraham Road Park & Ride and the Cambridge Biomedical Campus
- an inbound bus lane from Babraham Research Campus to the Babraham Road Park & Ride site
- a Park & Ride near the A11/A1307 junction

Strategy 3

- an inbound bus lane along the A1307 from Babraham Research Campus to the Addenbrooke's Hospital roundabout
- a Park & Ride near the A11/A1307 junction

Your feedback will help to develop the strategies further and allow the Executive Board to select a preferred strategy to take forward.



What's the CAM network?

A recent study looking into options for Mass Rapid Transit (commissioned by the Combined Authority and Greater Cambridge Partnership (GCP)) found that a new Metro system is a viable option for Greater Cambridge – providing the capacity and the flexibility to help meet the area's future transport needs at an affordable price.

The CAM (Cambridgeshire Autonomous Metro) is a high-quality tram-like system, with vehicles that are not restricted to rails; it is a flexible form of public transport than can run both over or underground. While the CAM vehicles could travel on-road, segregated dedicated routes provide faster and more reliable services, maximising the potential usage.

This new solution is currently under development, but what it does mean is that any segregated public transport corridors currently used by buses could later transition to form part of the wider CAM network in the future. More detail on the CAM concept can be found at www.greatercambridge.org.uk/futureinvestmentstrategy

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Figure 1: Extract from 2018 Greater Cambridge Partnership consultation brochure



Figure 2: GCP-proposed bus route, subject to TWAO application

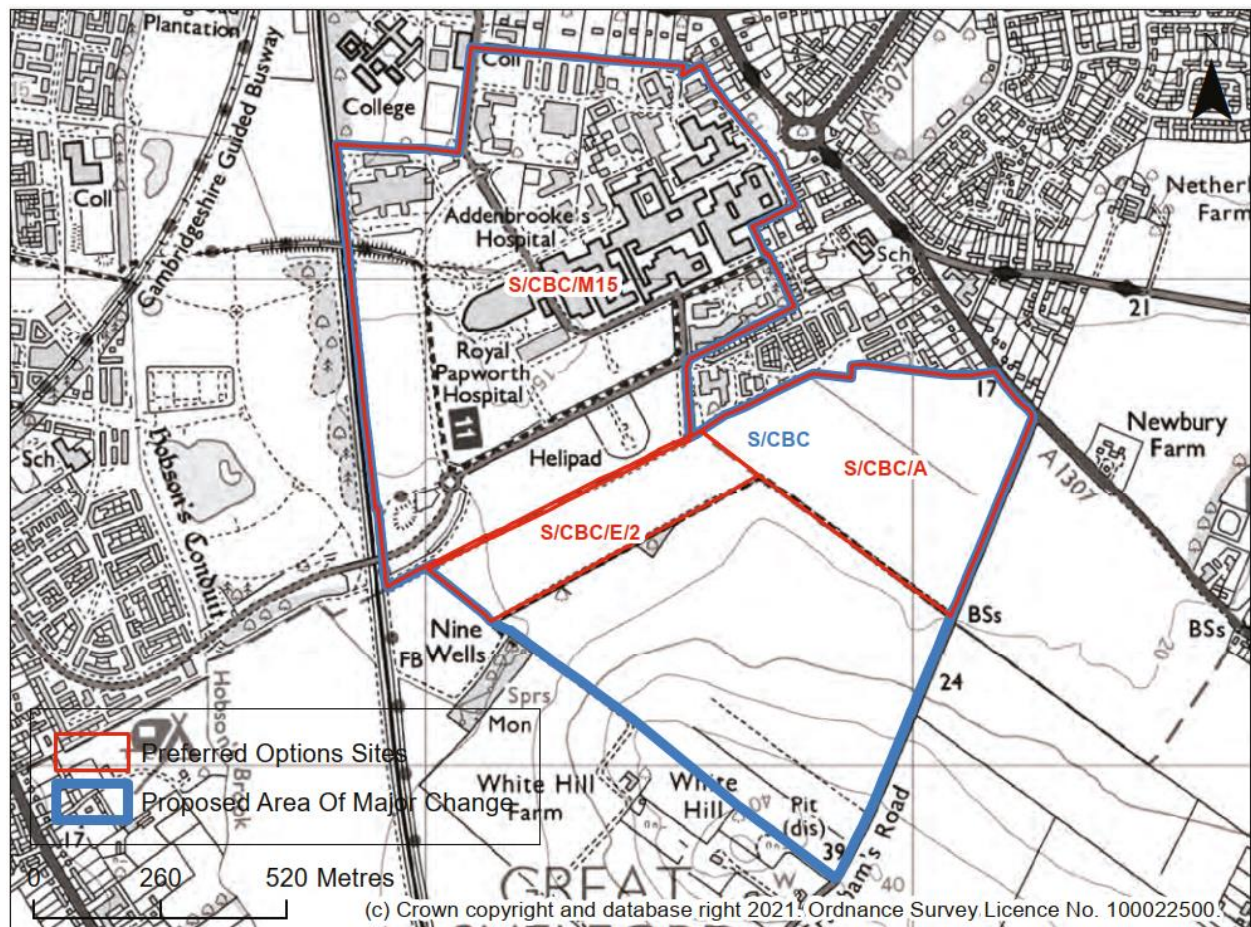


Figure 3: Greater Cambridge Local Plan First Proposals (Regulation 18: Preferred Options 2021) Policy S/CBC site allocations around the Cambridge Biomedical Campus



Figure 4: Overview of alternative proposal showing new and existing or potential bus lanes, plus optional end-points of a bus-only road linking Babraham Road and Dame Mary Archer Way. See following pages for annotations.

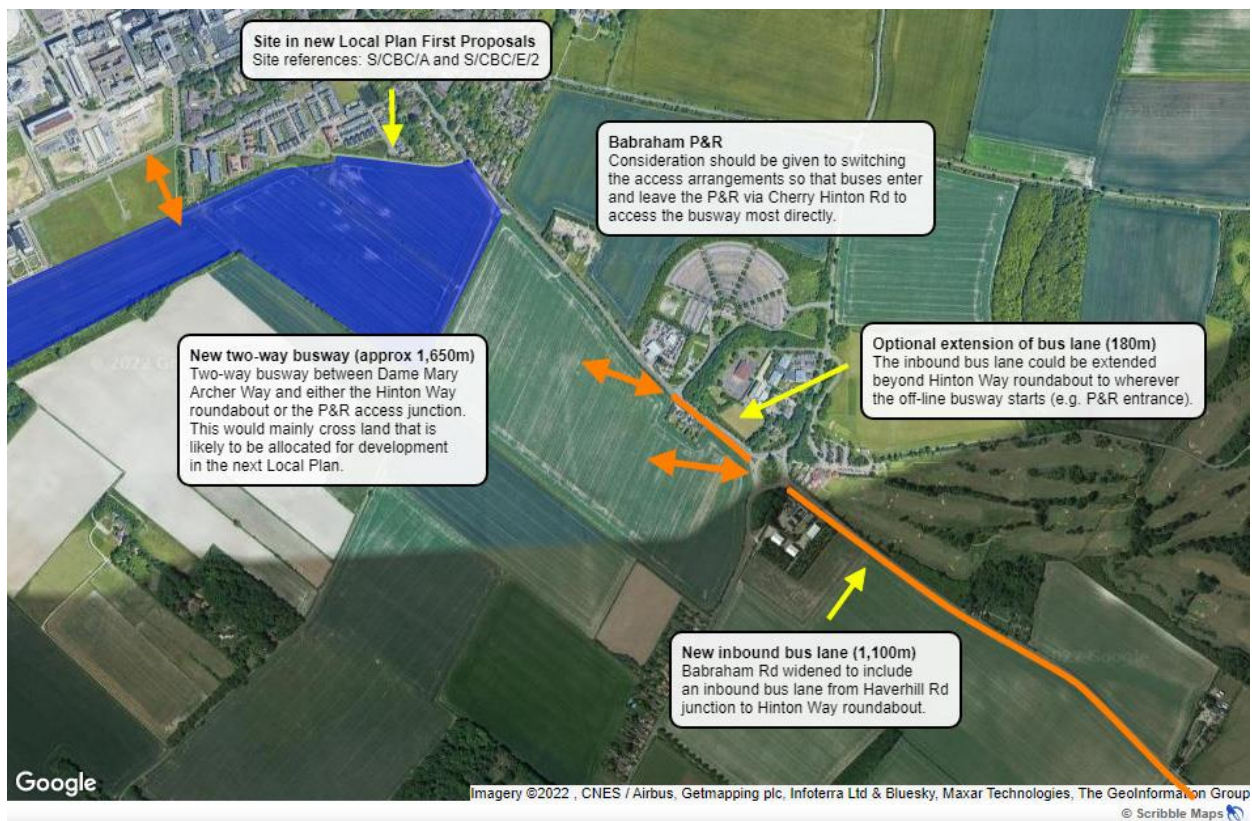


Figure 5: Northern section of alternative proposal. The orange arrows indicate where the off-road bus route would join existing roads (two options in the case of Babraham Road).

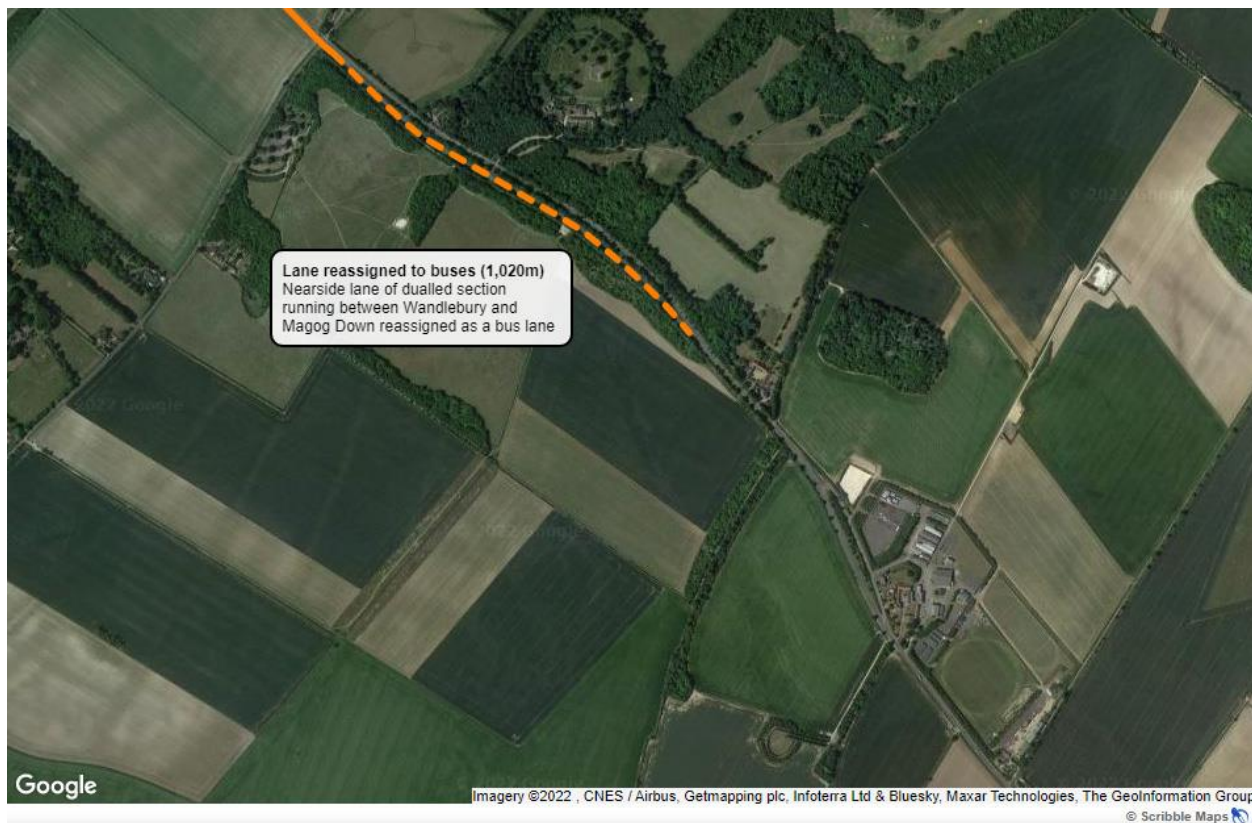


Figure 6: Southern section of alternative proposal

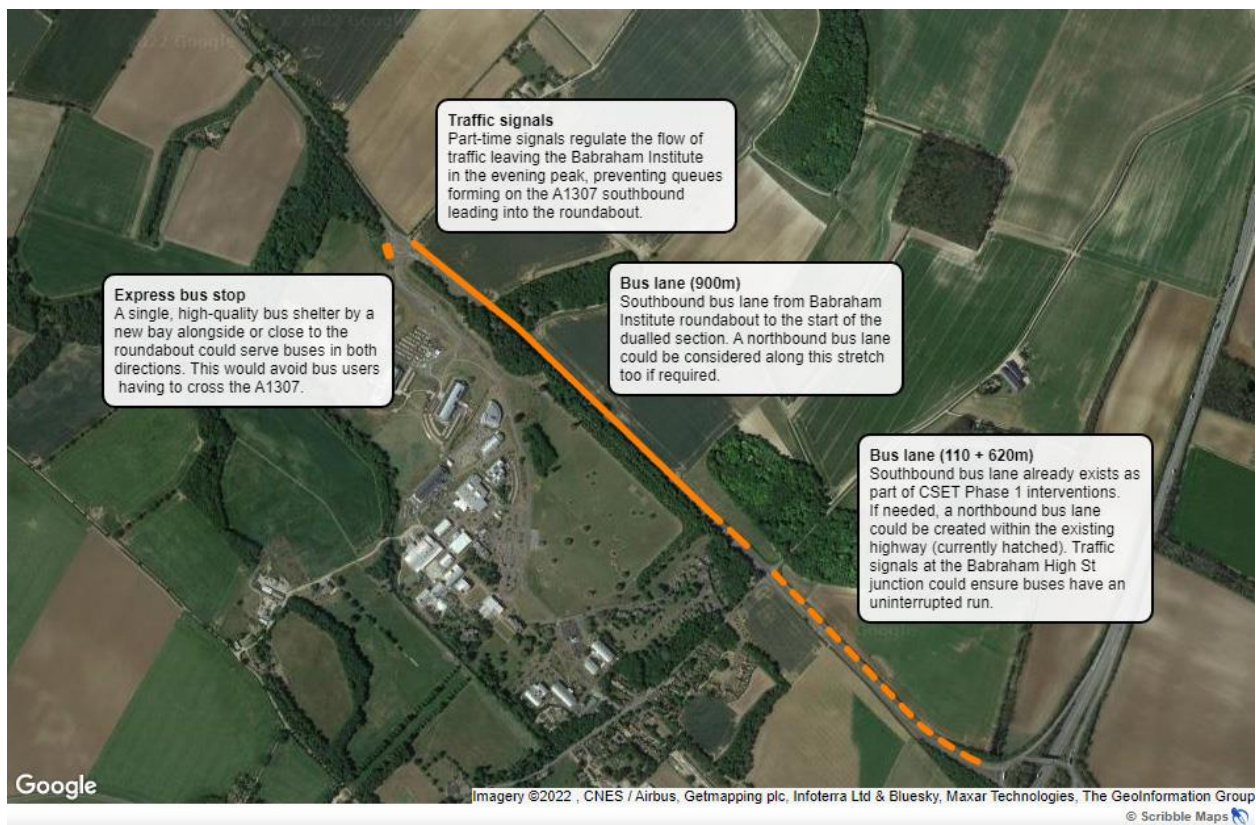


Figure 7: Middle section of alternative proposal