

Cambourne to Cambridge: In-Highway Proposals for High Quality Public Transport Scheme (revised) – extract

*Produced for Cambridge Past, Present & Future
by Edward Leigh MA MSc, updated September 2024*



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This is an extract from the full report, which provides further context and comparisons with GCP's preferred option. First published July 2021, then updated in June 2023 and September 2024 to take account of policy changes, update data, and to simplify and clarify our proposal.

Glossary

- **Madingley Mulch roundabout** refers to the junction between the A1303, A428 and St Neots Rd by Madingley Mulch, the garden building supplier.
- **Madingley Hill** refers to the A1303 between Madingley Mulch roundabout and the M11 Junction 13.
- **Madingley Rd** refers to the A1303 between the M11 Junction 13 and Queen's Rd.
- **Hurry call** refers to a system for adapting traffic signal phasings in response to an approaching bus.

The following reports are referenced:

- **CPIER:** [Cambridge & Peterborough Independent Economic Review](#), Cambridgeshire and Peterborough Independent Economic Commission, September 2018
- **EC:** [Outline Business Case: Economic Case](#), Mott MacDonald, 17 January 2020
- **HGV:** Heavy Goods Vehicle ([legally](#), any goods vehicle over 3.5 tonnes when fully laden)
- **NR:** C2C Technical Note: [Northern Route](#), Mott MacDonald, 22 May 2019
- **NTSR:** Cambourne to Cambridge Better Public Transport Project [Non-technical summary \(Outline Business Case\)](#), Mott MacDonald, December 2019
- **OAR:** [Outline Business Case](#) Appendix B: [Options Appraisal Report Part 2](#) & [Part 3](#), Mott MacDonald, December 2018
- **OBC:** [Outline Business Case](#), Mott MacDonald, 17 January 2020
- **QW:** C2C Technical Note: [Madingley Road 'Quick-Win' Options Outline](#), Mott MacDonald, 14 May 2019
- **RFB:** A428 Cambourne to Cambridge Option Study: [Rectory Farm Bridge Options Report](#), Atkins, 10 June 2016
- **SEN:** [Outline Business Case](#) Appendix J: [Strategic Economic Narrative & Economic Impacts Report](#), Mott MacDonald, 17 January 2020
- **SOBC:** [Strategic Outline Business Case](#), Atkins, 23 September 2016
- **TSCSC:** [Transport Strategy for Cambridge and South Cambridgeshire](#), Cambridgeshire County Council, April 2014
- **TSM:** [C2C Topographical Survey Maps](#), Cambridgeshire County Council, 24 November 2016
- **TWAOA:** [Cambourne to Cambridge: Transport & Works Act Order application](#) (March 2023)

Other abbreviations used:

- **BCR:** Benefit-Cost Ratio, the ratio of cumulative social benefits to total costs over the appraisal period of 60 years
- **C2C:** [Cambourne to Cambridge](#)
- **EWR:** [East West Rail](#)
- **GCP:** [Greater Cambridge Partnership](#)
- **NMU:** non-motorised user (person walking, cycling or riding a horse)
- **RIS2:** Department for Transport [Road Investment Strategy 2](#)
- **TWAO:** Transport and Works Act Order for Cambourne to Cambridge scheme

Detail of interventions proposed

Section A: Madingley Mulch roundabout

Distance	107m (190m now)
Speed limit	60mph
Bus lane position	Through centre of roundabout
Filter pockets in bus lane	n/a
Illustration	Figure 8a

Inbound bus lane

A1. Smart signal controls: Signals that response to an approaching bus ‘hurry call’ would minimise delay through the roundabout. They could also reduce incidences of blocking back by regulating inflows to match outflows. (Reviewed in QW3.1.)

A2. Bus bypass through roundabout: An inbound bus lane from St Neots Rd through the middle of the roundabout to connect with the bus lane on Madingley Road would ensure buses avoid any congestion on the roundabout, and reduce by 80 metres the distance travelled at slow speed around the roundabout.

Optional additions

A3. Outbound bus lane: A westbound nearside bus lane could be accommodated within highway land to the south of Madingley Mulch roundabout (see Figure 14). This would provide buses with a congestion-free route if and when a queue builds on the approach to the roundabout (see Figure 15). (Reviewed in QW3.1.)

A4. A428 exit ramp bus lane: Adding a bus lane for buses and coaches using the A428 from Cambourne, St Neots or from a Park & Ride at Scotland Rd could reduce journey times and variability. An extra lane on the off-ramp was included in GCP’s designs for a Park & Ride at the Waterworks site (see Figure 10).

At peak times, this would allow some services to fill up in Cambourne or Bourn Airfield and run non-stop to Cambridge along the A428 and Madingley Hill. Other services, running along St Neots Road, would then be more likely to have space for passengers boarding at Highfields Caldecote, Hardwick and Coton.

Section B: Madingley Mulch Roundabout to Crome Lea Business Park junction

Distance	553m
Speed limit	50mph
Bus lane position	Central
Filter pockets in bus lane	Madingley Mulch, Jungle, Crome Lea Business park
Illustration	Figure 8a

Inbound bus lane

B1. Central bus lane: This section can accommodate a central inbound bus lane with relatively low environmental and visual impact. The bus lane can incorporate right-turn filter pockets, including at the end, for the Crome Lea Business Park. There is space within the existing highway boundary to widen the road to the north without impacting the NMU path or people’s homes to the south (see Figure 9).

Inbound Flow Control

If the next section (past Madingley Wood and the American Cemetery) were not to include a bus lane, the following interventions could be deployed instead in this section.

B2. Signal controls: Traffic signals level with the end of the bus lane would respond to bus ‘hurry calls’. The Detector loops in the general traffic lane would monitor the length of the queue leading up to the signals and the speed of traffic beyond, enabling signal timings to be tuned to optimise the flow rate in the next section (see *Inbound Flow Control* below).

At any time that the queue backs up to within 50m or so of the Madingley Mulch roundabout, the traffic management system would increase the rate at which general traffic is released into the next section until the queue stops growing. In the worst case, the signals would only hold traffic to allow a bus to join the general traffic lane. This ‘safety valve’ mode of operation would ensure there is no increased risk of queues impacting traffic exiting the A428.

B3. Additional queuing lane: A third inbound lane may be added to give general traffic two lanes, doubling the queuing space from around 88 vehicles to around 176. This would provide similar benefit to building the Section C bus lane (C1).

Though there is space within the existing highway boundary to widen the road to the south and north (see Figure 9), it is likely to be preferable to acquire some of the farmland to the north in order to widen the road only on the north side, thereby limiting the loss of hedgerow and trees and the impact on people’s homes.

Section C: Madingley Wood, American Cemetery and Mill Farm

Distance	931m
Speed limit	50mph
Bus lane position	Central
Filter pockets in bus lane	Coton Court, The Lodge, Blue Gates
Illustration	Figure 8b

Inbound bus lane

C1. Central bus lane: The total width required to accommodate the road, an inbound bus lane and an LTN1/20-compliant shared-used NMU path is around 14 metres (see Figure 5). As the public highway (see Figure 9a) in this section is between around 18.5m and 30m, there would be no need to encroach on third party land or to remove any trees. There would be no encroachment into the Madingley Wood SSSI, nor any need to remove the hedgerow in front of the American Cemetery.

Inbound Flow Control

As this section is the most sensitive in terms of heritage, ecology and residential property, we believe it would be sensible to consider first whether Inbound Flow Control (B2 and, optionally, B3 above) would be a more acceptable intervention than building a bus lane along this section.

Section D: Mill Farm layby to Cambridge Rd junction

Distance	439m
Speed limit	50/40mph
Bus lane position	Central
Filter pockets in bus lane	Madingley Rise, Cambridge Rd (to Coton)
Illustration	Figure 8b

Inbound bus lane

D1. Central bus lane: The layby just east of Mill Farm can be converted to a general traffic lane, releasing the existing carriageway for a bus lane. East of the layby, the central hatching can be converted to a central

eastbound bus lane, interrupted by filter pockets at Madingley Rise and Cambridge Rd. Beyond the hatching there is less than 100m where the road would need widening. There is sufficient land within the highway boundary to accommodate this (see Figure 9b). A replacement layby can be created in Section E just east of the Cambridge Rd junction (E2 below).

D2. Signal controls at Cambridge Road: Traffic signals at the Cambridge Rd junction would limit the rate at which vehicles can leave Cambridge Rd from Madingley and Coton at peak times, reducing delays to traffic on Madingley Hill. The signals would also respond to bus 'hurry calls', prioritising inbound buses in the morning peak and outbound in the evening. The signals could operate part-time if they provide insufficient safety benefit for people walking or cycling through this junction outside of peak hours.

Section E: Cambridge Rd junction to existing bus lane

Distance	390m
Speed limit	40mph
Bus lane position	Nearside
Filter pockets in bus lane	n/a
Illustration	Figure 8b

Inbound bus lane

E1. Inbound bus lane: A bus lane could be accommodated within the public highway, which is approximately 16m wide at its narrowest point, though would likely require removal of some mature trees around Moor Barns Farm houses.

Inbound Flow Control

To avoid any negative impact on Moor Barns Farm houses and trees in this section, we believe it would be sensible to test Inbound Flow Control for this section, using the lights at the Cambridge Road junction to regulate the flow of traffic towards Cambridge.

Complementary measures

E2. Layby: To replace the layby lost in Section D, a new layby can be created in the redundant part of the north side of the Cambridge Rd junction. The inter-green phases of the traffic lights would give vehicles a safe window in which to leave the layby. It would therefore be safer than the existing layby, which is in a 50mph zone.

Section F: Existing bus lane to M11

Distance	352m
Speed limit	40mph
Bus lane position	Nearside
Filter pockets in bus lane	n/a
Illustration	Figure 8c

Inbound bus lane

F1. Reconfigure junction: Reinstate the pre-2015 arrangement where the bus lane continued past the junction with the M11 off-ramp, giving buses an uninterrupted run (see Figure 17).

Currently, a bus waiting in the bus lane is released at the same time as general traffic (see Figure 18). Most vehicles can accelerate faster than a bus, so several vehicles can pull ahead of the bus before it reaches the merge point 85m ahead. Allowing buses to run ahead of stopped traffic allows them to take advantage of

inter-green gaps in the traffic flow as the signals cycle between Madingley Rd and the M11 exit, reducing delays.

Section G: M11 (Rectory Farm) Bridge

Distance	178m
Speed limit	40mph
Bus lane position	Nearside
Filter pockets in bus lane	n/a
Illustration	Figure 8c

Inbound bus lane

G1. Nearside bus lane: The RFB details in Option 2 (see Figure 16) how the bridge can accommodate four 3m-wide traffic lanes in addition to the existing NMU lane. The gain is relatively small once the filter lane is extended behind the end of the existing bus lane (G3), so we do not recommend prioritising this intervention.

If the carriageway were widened, the estimated cost is £632,000 (2016 prices, RFB Appendix E p5), mostly to relocate below-surface services on the south side of the bridge. The lane allocation, north to south would be (see Figure 6):

- Bi-directional NMU lane (unchanged)
- Eastbound bus lane
- Eastbound general traffic lane
- Eastbound M11 entry filter lane
- Westbound general traffic lane

Complementary measures

G2. Traffic signals at M11 exit: Optimise the signals to regulate the flow of traffic onto the M11 bridge to avoid blocking back from the right-turn filter lane when an eastbound bus is approaching, and to minimise delay to westbound buses.

G3. M11 exit filter lane: Extend the right-turn filter lane back to the traffic lights at the M11 exit junction. This will add 84m to the existing 66m filter lane, creating queuing space for approximately thirteen more vehicles. By overlapping the bus lane and filter lane, buses will no longer be blocked by vehicles waiting to enter the filter lane. This can be achieved quickly with paint and minimal engineering. If necessary, the end of the bus lane can be pulled back a few metres to ensure traffic can merge safely before reaching the bridge.

Note that the planning application for Bourn Airfield (S/3440/18/OL) includes a similar proposal to segregate M11-bound traffic from city-bound traffic (see Figure 11). Both options should be modelled with accurate peak-time traffic volumes to determine which benefits buses more.

G4. Reinstate segregation of bus lane through M11 exit junction: Before 2015, the bus lane was segregated from the carriageway by a raised kerb through the junction, enabling buses to proceed when other traffic was held at a red signal (see Figure 17). Despite the obvious benefit this provided buses, in 2015 the kerb was removed and the stop line extended across the bus lane (see Figure 18). The STATS19 collision data does not reveal a significant risk at this junction: the two collisions recorded in the last ten years near this junction both occurred after 2015. It is therefore unclear why this change was made.

G5. Traffic signals at M11 entry: Signals could help accelerate the flow eastbound when there are insufficient gaps in outbound traffic to prevent blocking back at the entrance to the right-turn filter lane. Signals could also respond to a 'hurry call' from buses that route via the M11 (e.g. to reach the Biomedical

Campus), clearing the filter lane as a bus enters it. This is one of a set of interventions at this location that QW 3.4.2 assessed that could “potentially provide significant benefits to general traffic, as well as public transport vehicles.”

Section H: M11 bridge to P&R entrance

Distance	207m
Speed limit	40mph
Bus lane position	Nearside
Filter pockets in bus lane	n/a
Illustration	Figure 8c

H1. Nearside bus lane: East of the bridge, the road is four lanes (approximately 14m in total) wide. Although the time gain to buses is likely to be small, it would be possible to reallocate the space to include a nearside inbound bus lane up to the entrance to Madingley Park & Ride. The middle of the three remaining lanes could be split into an eastbound filter lane for the park & ride and a westbound filter lane for the M11. The optimal lengths of each filter lane may be determined by modelling.

H2. Responsive traffic signals: The signals at the P&R entrance could respond to a ‘hurry call’ from buses entering, leaving or passing the P&R, minimising delays. This would, for instance, clear the filter lane into the P&R when a bus is about to enter it.

[To avoid typographical ambiguity, there is no Section I.]

Section J: P&R entrance to Northampton St roundabout

Distance	2,050m
Speed limit	40/30mph
Bus lane position	None
Filter pockets in bus lane	n/a
Illustration	Figure 8c

Complementary measures

J1. Responsive traffic signals: All signals should be configured to respond to ‘hurry calls’ from approaching buses, and timings should be optimised to promote free flow along Madingley Rd inbound in the AM peak and outbound in the PM peak.

There is a critical requirement is for easy interchanging between east–west and north–south services at or close to Madingley Park & Ride in a way that is efficient for bus operators.

We note that the University of Cambridge consulted in 2020 on running a new service between Eddington and Milton Park & Ride via the Darwin Green Development. If Smarter Cambridge Transport’s [recommendation](#) were followed, and this new service instead ran to Cambridge North station, it could provide connections between Cambourne–Cambridge services and Cambridge North railway station, Cambridge Science Park, Cambridge Regional College, Girton College, Eddington, West Cambridge, the Fitzwilliam Museum, Cambridge Station and the Biomedical Campus.

Cycle route

Z1. Comberton Greenway extension: The most attractive route for active travel is through the villages to the south of the A428, not along St Neots Rd and Madingley Rd. For most people it is the more direct route; it avoids the long and relatively steep incline of Madingley Hill travelling west (see Figure 20); it does not

expose users to traffic noise, vehicle pollution and headlight glare; and it passes through attractive countryside.

With the Comberton Greenway now going ahead, the next step should be to design a continuation of that west from Hardwick to Highfields Caldecote, with the installation of an appropriate all-weather surface along the route of the Harcamlow Way bridleway (see Figure 19). An early agreement should be struck with the developer of Bourn Airfield to create an NMU path through the site, linking Highfields Caldecote with Cambourne (see Figure 21).

Girton Interchange

22. Reassign hatched carriageway on A428: Moving the general traffic lane into the offside hatched area would free up the inside lane to be used by buses and coaches (and emergency vehicles). If the lanes merge before the M11 overbridge, this would provide a 640m bus lane to bypass congestion (see Figure 24). Although congestion is not currently experienced on this part of the A428, as it was pre-COVID, this option can be held in reserve.

When it ran, the 905 bus service from Cambourne (Morrisons) to Cambridge (Drummer St) via the A428 and Kings Hedges took 25 minutes, compared with 36 minutes now for the Citi 4 service.

Were it not for the disruption to traffic caused by the GCP roadworks on Histon Rd then Milton Rd, this route would still offer a faster route into Cambridge (and, significantly, to key destinations, such as the Regional College and Science Park) than the Citi 4. Once those roadworks are completed, it is likely that a bus operator will see an opportunity to reinstate this, or a similar service, using the A428.

Cambourne

23. Bus station: Cambourne provides a poor experience for bus users: there is no bus station and few bus shelters. We recommend that consultation should start urgently to identify the best location for a bus station to serve express services to Cambridge and St Neots, and interconnecting local and demand-responsive services from Papworth, Elsworth, Caxton, Bourn and other villages. Facilities could include shelters, cycle parking, a waiting room, toilets, refreshment kiosk, collection lockers, CCTV monitoring, helpdesk intercom, and WiFi.

24. Bus link between Sterling Way and Broadway: The bus link between Sterling Way in Great Cambourne and Broadway has been granted planning consent ([S/4594/18/RM](#)), and is due to be delivered as part of the Cambourne West development. This will in future connect with the busway through the Bourn Airfield development (see Figure 22 & Figure 23).

In the meantime, this link will reduce the travel time and mileage buses take to cover Lower, Great and Upper Cambourne (see Figure 1, which illustrates how convoluted the Citi 4 bus route is). It should therefore be delivered as quickly as possible.

The Interim Transport Measures Strategy submitted as part of the planning application for Bourn Airfield ([S/3440/18/OL](#)) states that this intervention alone will reduce journey times by 10 minutes. This will help enable an increase in the service frequency (currently two per hour; was three per hour pre-COVID), potentially increasing bus patronage by 16%:

A	Routing Cambourne 4 Bus Service through Bourn Airfield	A section of Busway would be provided within Bourn Airfield with an eastern and western stop, allowing services from Cambourne to route through Bourn Airfield	4 (Bourn Airfield) 8 (Cambourne)	150	Bourn Airfield Cambourne	This reduces timetable journey times by approximately 10 minutes (It is noted that the connection to the Broadway is provided through the Cambourne West consent, however this still reduces corridor flows. In comparative terms to existing Cambourne Residents, Bourn Residents will have a considerably shorter journey time as a result of the direct links)
A	Increase in Frequency of the Service to 15 minutes in the Peak Hour	The connection across the Broadway considerably reduces current journey times. Support for a 15 minute frequency service would provide Cambourne and Cambourne West Residents with a just in time service	13	163	Bourn Airfield Cambourne West	Research shows a frequency elasticity of 0.5. This could equate to up to a 16% increase in patronage. (Source: Impact of Congestion on Bus Passengers)

Bourn Airfield

Z5. Primary bus route through the centre of the Bourn Airfield development site: The Local Plan requirement in *Policy SS/7: New Village at Bourn Airfield* is for (emphasis added):

*Provision of a segregated bus link from Cambourne to Bourn Airfield new village across the Broadway, and **on through the development** to the junction of the St Neots Road with Highfields Road.*

Yet GCP's proposed route is around the northern edge of the development site (see Figure 7). The two stops at the north-west and north-east corners are up to 1.2km from homes to be built at the south of the site, far more than the recommended 400m in transport planning guidance and in the South Cambridgeshire Local Plan for Darwin Green (emphasis added):

*3.20 A fundamental requirement for this site [Land between Huntingdon Road and Histon Road] is that it will be highly accessible and permeable to all its residents on foot, by cycle and High Quality Public Transport (HQPT), to support sustainable transport, recreation and health. Therefore **all development will be within 400m easy walking distance of a HQPT bus stop via direct, safe and convenient routes**. The route must be fully and effectively integrated with the route through the adjoining City development.*

The SPD for Bourn Airfield is slightly weaker, but nonetheless makes clear that 400m is a threshold for accessibility of bus stops:

Typical walking distances of 400m (5 mins) and 800m (10 mins) should be used to help assess whether facilities and public transport stops are within easy walking distance.

Because many homes will be far beyond 400m of the bus 'halts', additional bus services will need to run through the development site, either connecting with or competing with busway services, and potentially requiring long-term subsidy. This is covered in the Transport Assessment (December 2019, p102):

Additional bus service for the south of the development

10.4 To encourage people to use public transport over the private car, and in accordance with SCDC Design Guide SPD, the development is being designed to ensure that all residential properties are within 400m of a bus stop.

10.5 Details of the additional services, together with bus stop locations and bus frequency will be provided within the Travel Packs for the development.

Running all buses through the centre of the site, with appropriate infrastructure, would give all residents access to the full range of bus services without the need to run additional, potentially subsidised, services (other than perhaps a demand-responsive service for those with impaired mobility).

Highfields Caldecote and Hardwick

Z6. Bus priority at Highfields Rd and Scotland Rd roundabouts: In advance of development of Bourn Airfield, measures should be put in place to minimise delays to buses at the roundabouts with Highfields Rd and Scotland Rd. The optimal configuration should be determined by modelling various combinations of signalisation, lead-in bus lanes and central or peripheral bus bypass lanes.

Inbound Flow Control

The concept of Inbound Flow Control (or traffic ‘gating’ or ‘queue relocation’) works as follows:

1. Add a bus lane and, optionally, one or more general-traffic lanes to a main road into a town or city.
2. Choose the location where the equalised cost is lowest (financial costs plus net monetary equivalents of social and environmental impacts), which will typically be outside the built-up area.
3. Use traffic signals at the end of the bus lane to enable buses to insert themselves into general traffic without delay.
4. Also use those traffic signals to hold back general traffic to maintain free flow beyond the lights. This will typically entail releasing (‘metering’) traffic at the rate it is dispersing further down the road (in this case, at the M11 junction).
5. The queue will grow while the rate of arrivals at the back exceeds the rate at which traffic can disperse ahead.
6. If and when the queue extends to near the start of the bus lane, traffic is released from the front more quickly, which may lead to queuing further down the road. But if there is an Inbound Flow Control bus lane there too, buses will not be delayed.
7. Only if and when all of the Inbound Flow Control lanes are filled will buses experience delays on the sections without bus lanes. If this were to become a frequent occurrence, it would provide justification for extending or connecting the bus lanes, or adding an additional queuing lane.

With Inbound Flow Control operating at the end of the bus lanes in sections B, D and F (see Figure 8a,b,c) there would be 1,344 metres in which to queue approximately 200 vehicles before there would be any impact on buses. In other words, buses would be able to overtake up to 200 vehicles. Adding a second general traffic lane before Madingley Wood (B3) would add up to another 550m queueing space for approximately another 80 vehicles.

There is no significant delay to buses after around 10:30am (see Figure 2). From the DfT manual traffic counts on Madingley Hill (see Figure 3), we can infer that the likely free flow rate is around 650 vehicles/hour. With queueing capacity for 280 vehicles, Inbound Flow Control would enable an increased inflow rate of 790 vehicles/hour – a 20% increase – over two hours with no delay to buses.

Appraisal of Inbound Flow Control can and should be made more rigorous using microsimulation modelling based on accurate traffic counts at peak times. Automated counters at the following locations would provide a full picture of traffic movements:

- Just east of the Madingley Mulch junction
- Between the Cambridge Rd junction and the M11 exit junction
- On the M11 bridge
- Between the M11 entry junction and the Park & Ride junction
- Between the Park & Ride junction and the Eddington Ave junction

Figures

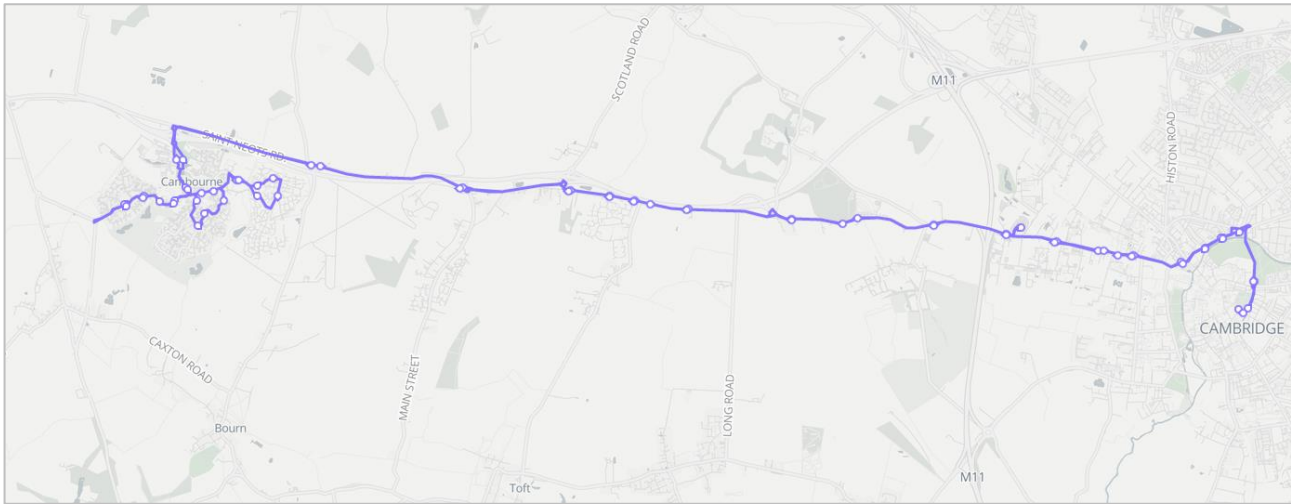


Figure 1: Citi 4 bus route from Cambourne to Cambridge

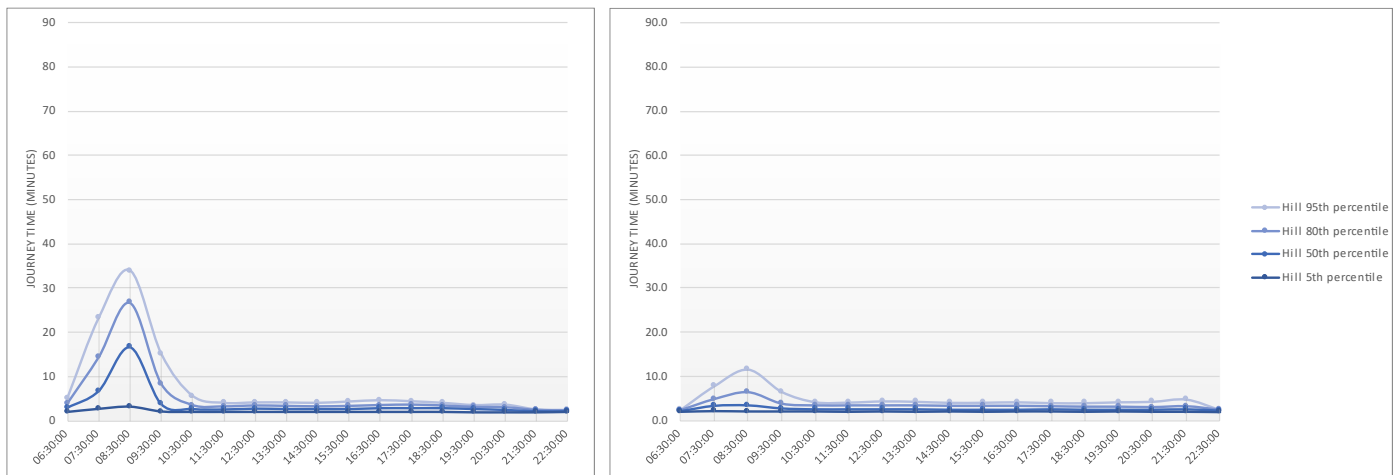


Figure 2: Journey times from Madingley Mulch roundabout to the M11 exit junction in 2019 (left) and July 2023 to June 2024 (right)

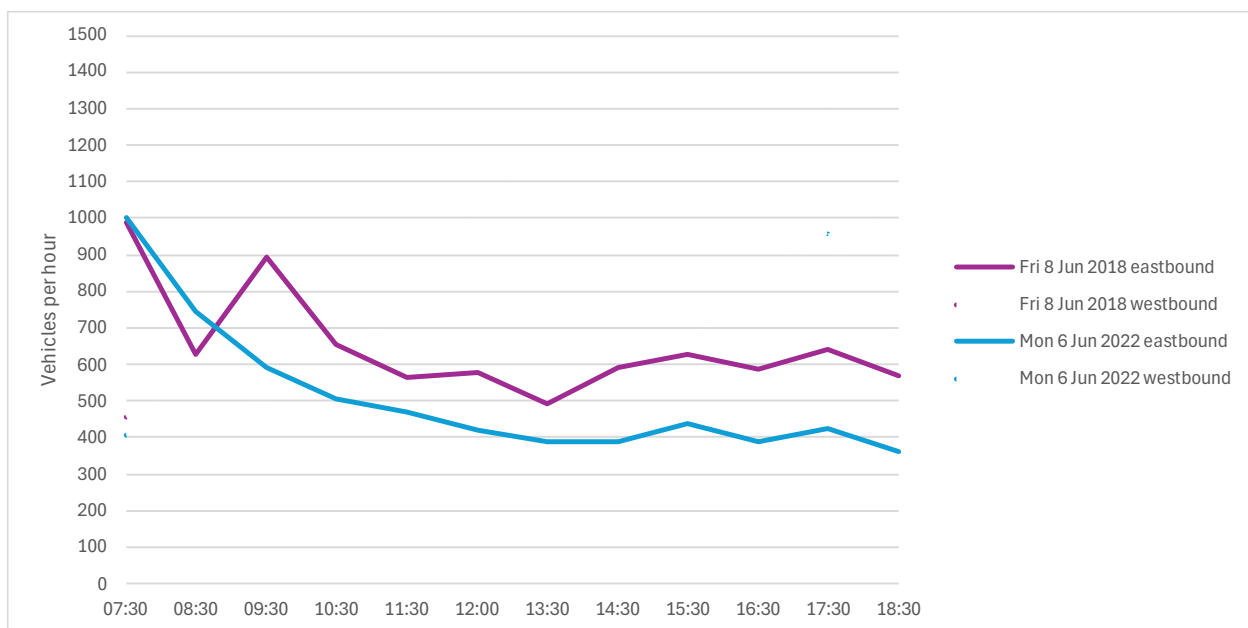


Figure 3: Department for Transport manual traffic counts on Madingley Hill in 2018 and 2022

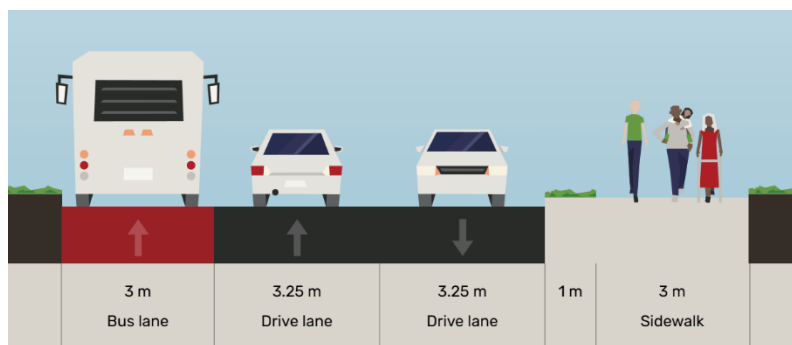


Figure 4: Potential cross-section looking east along Madingley Hill with a nearside bus lane (total width: 13.5 metres)

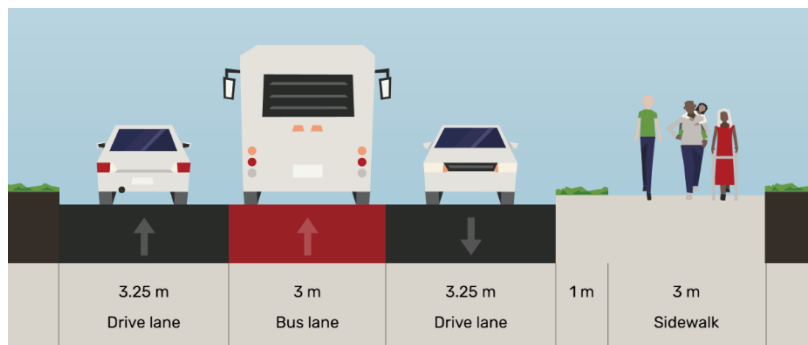


Figure 5: Potential cross-section looking east along Madingley Hill with a central bus lane (total width: 13.5 metres)

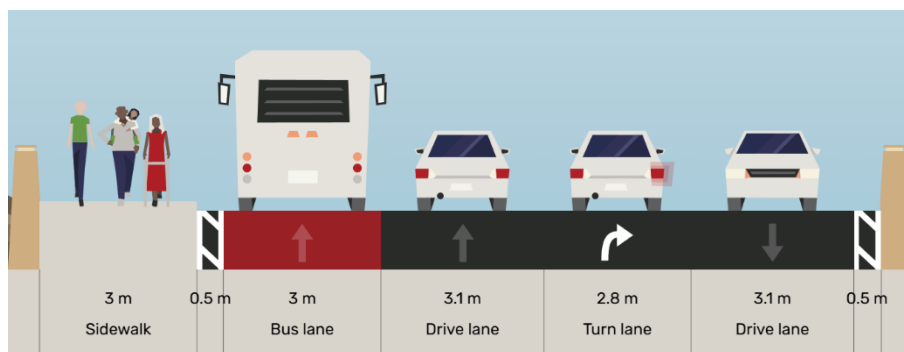


Figure 6: Potential cross-section looking east of Rectory Farm bridge with additional eastbound bus lane (total width: 16m)



Figure 7: GCP proposed alignment for the C2C busway and Cambridge PPF proposed alternative alignment (GCP route from TWAOA Appendix 2)

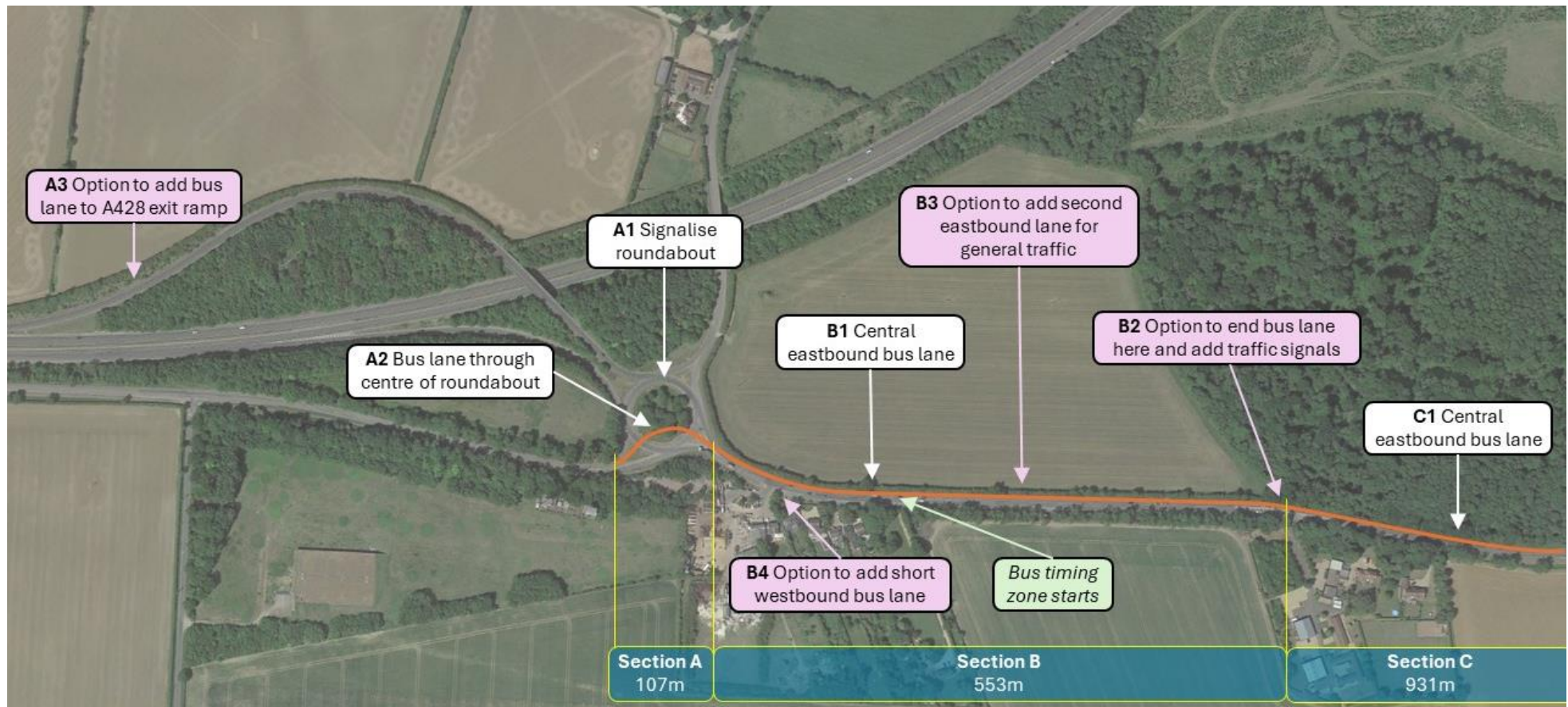


Figure 8a: Annotated satellite map of proposed interventions on Madingley Rd (continued east on next pages)

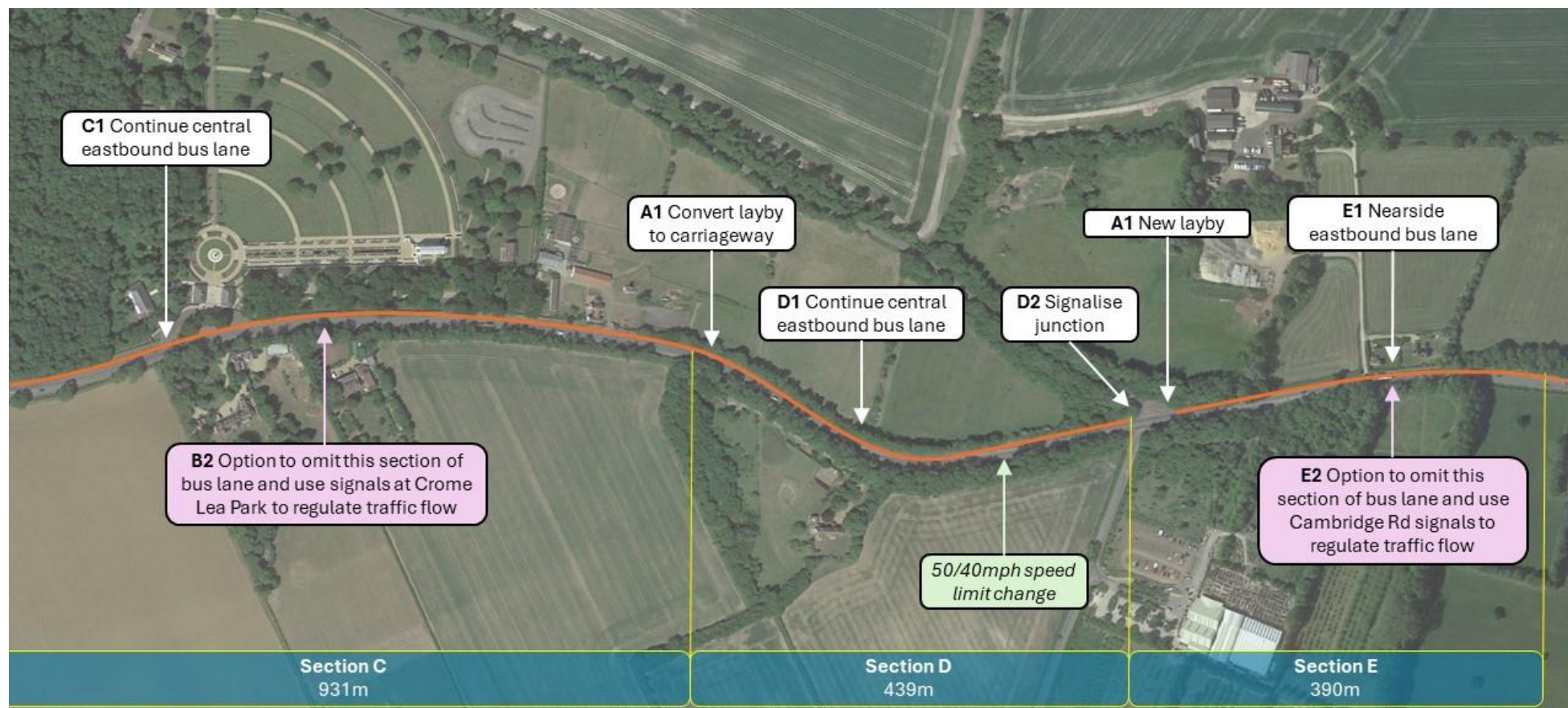


Figure 8b: Annotated satellite map of proposed interventions on Madingley Rd (continued east on next page and west on previous page)

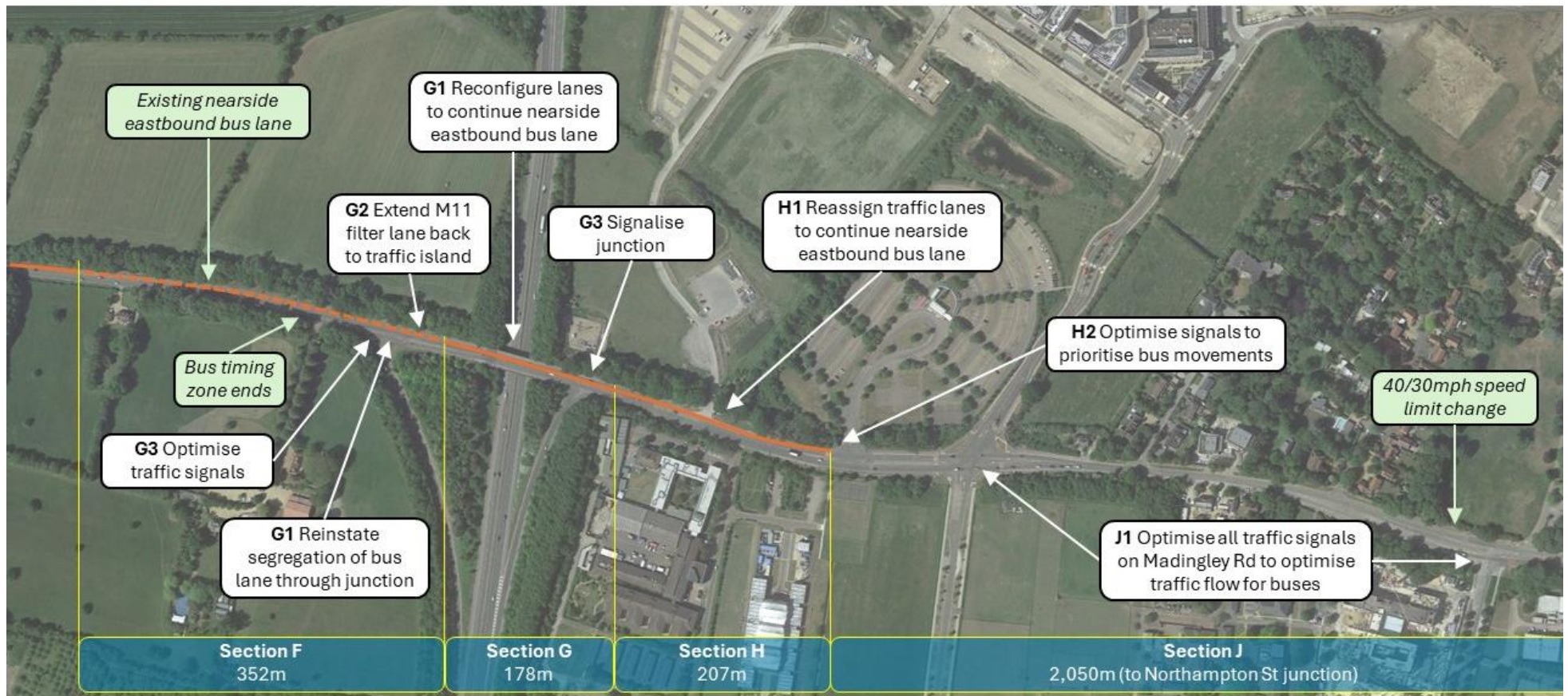


Figure 8c: Annotated satellite map of proposed interventions on Madingley Rd (continued west on previous pages)



Figure 9a: Highway boundary from Madingley Mulch roundabout to Cambridge Rd junction – Sections B-D (from TSM © Crown)

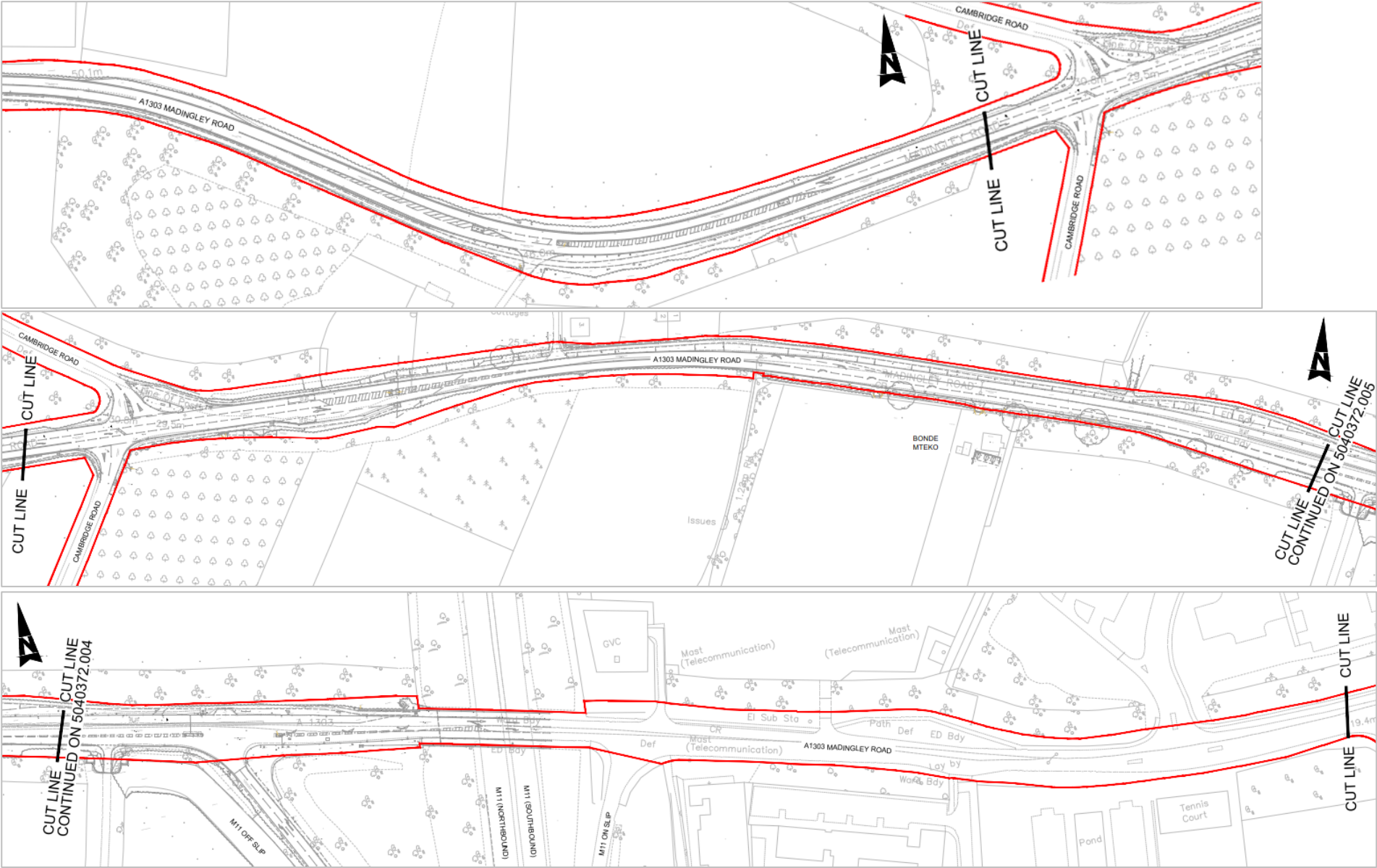


Figure 9b: Highway boundary between Mill Farm and Madingley Rd Park & Ride – Sections D–H (from TSM © Crown)

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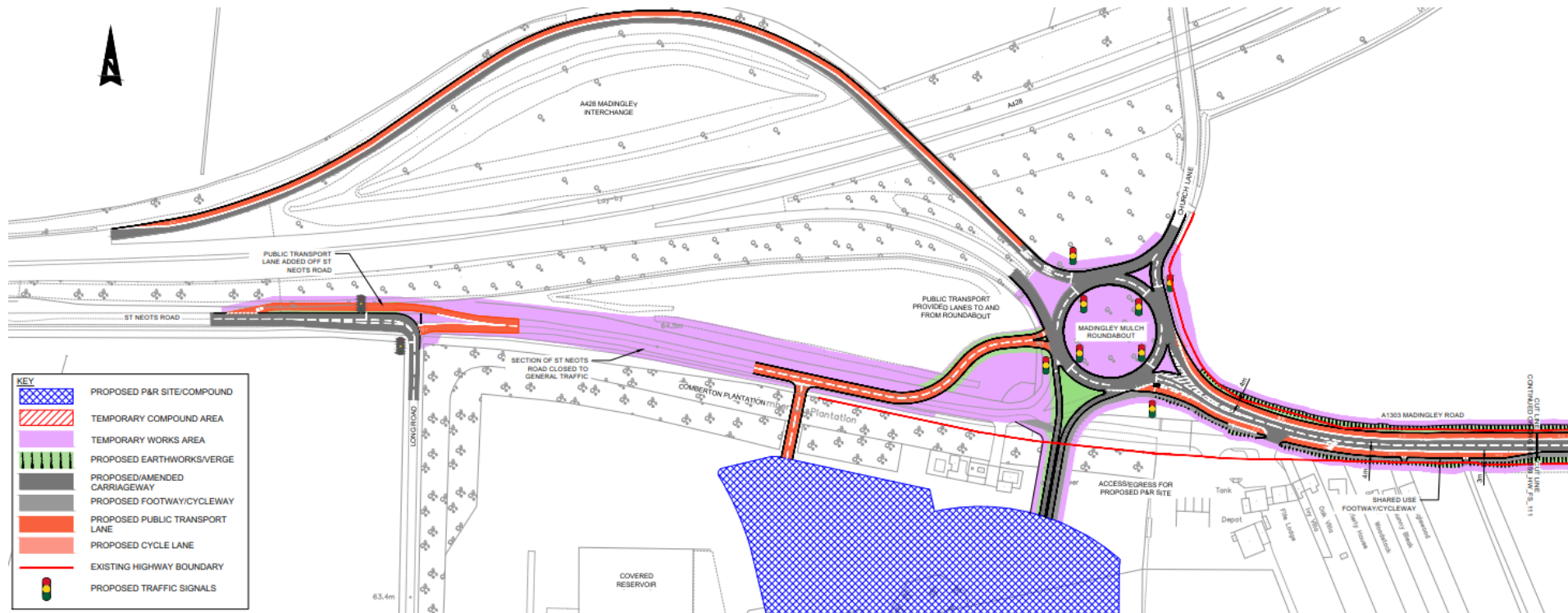


Figure 10: Additional lane added to A428 eastbound exit ramp, as illustrated for GCP option "Low Cost A + Waterworks" in Options Appraisal Report Part 2 (2018)

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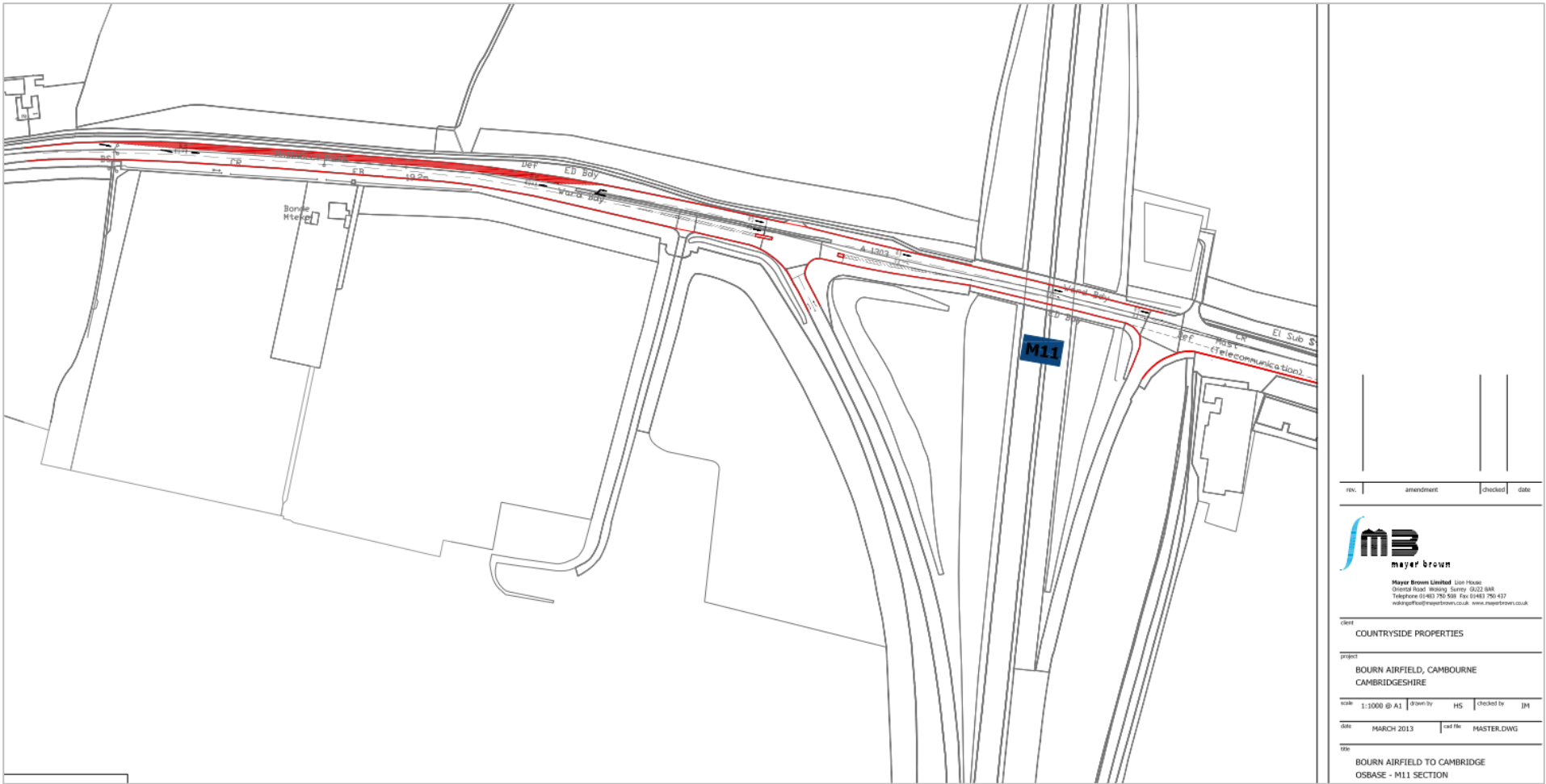


Figure 11: Changes proposed to A1303 at M11 junction as part of Bourn Airfield planning application (S/3440/18/OL)

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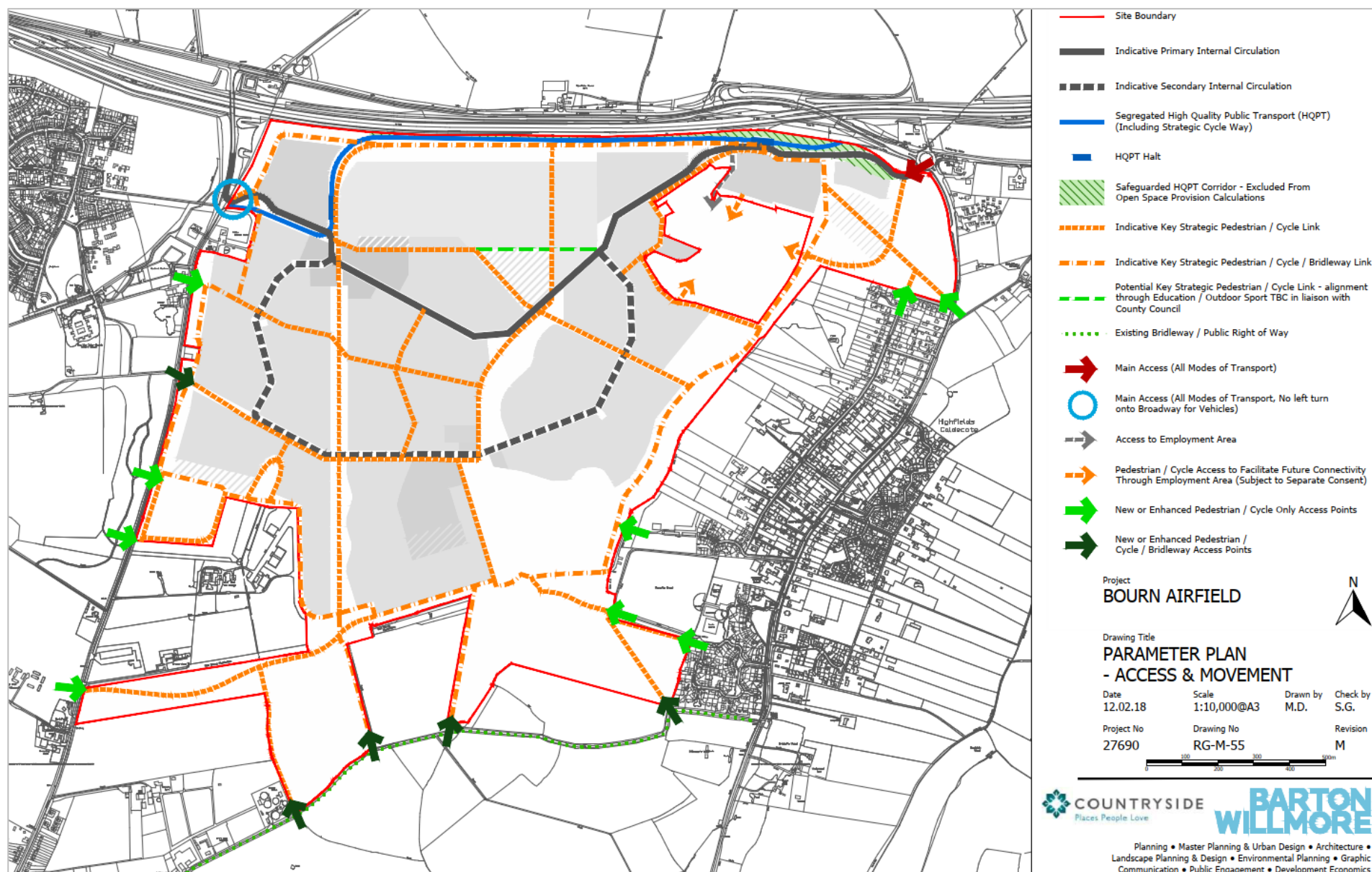


Figure 12: Proposed NMU routes through the Bourn Airfield site proposed in the outline planning application (S/3440/18/OL)



Figure 13: Illustrative masterplan from outline application for Bourn Airfield (S/3440/18/OL) showing how much of the development is within 400m (as the crow flies) of the two 'halts' on the busway as proposed by GCP. 400m is the recommended maximum walking distance to a bus stop. Some homes will be at least 1.2km walking distance from their nearest busway 'halt'..

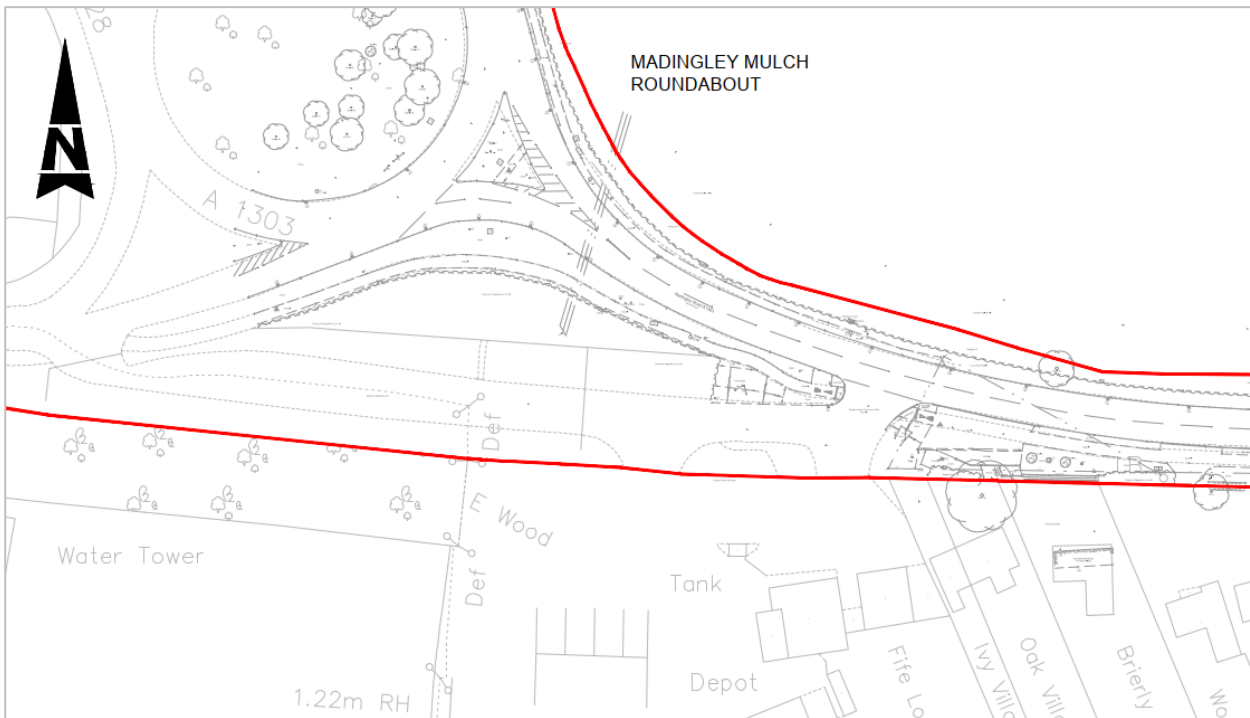


Figure 14: Highway boundary south of Madingley Mulch roundabout – Section A (from TSM © Crown)

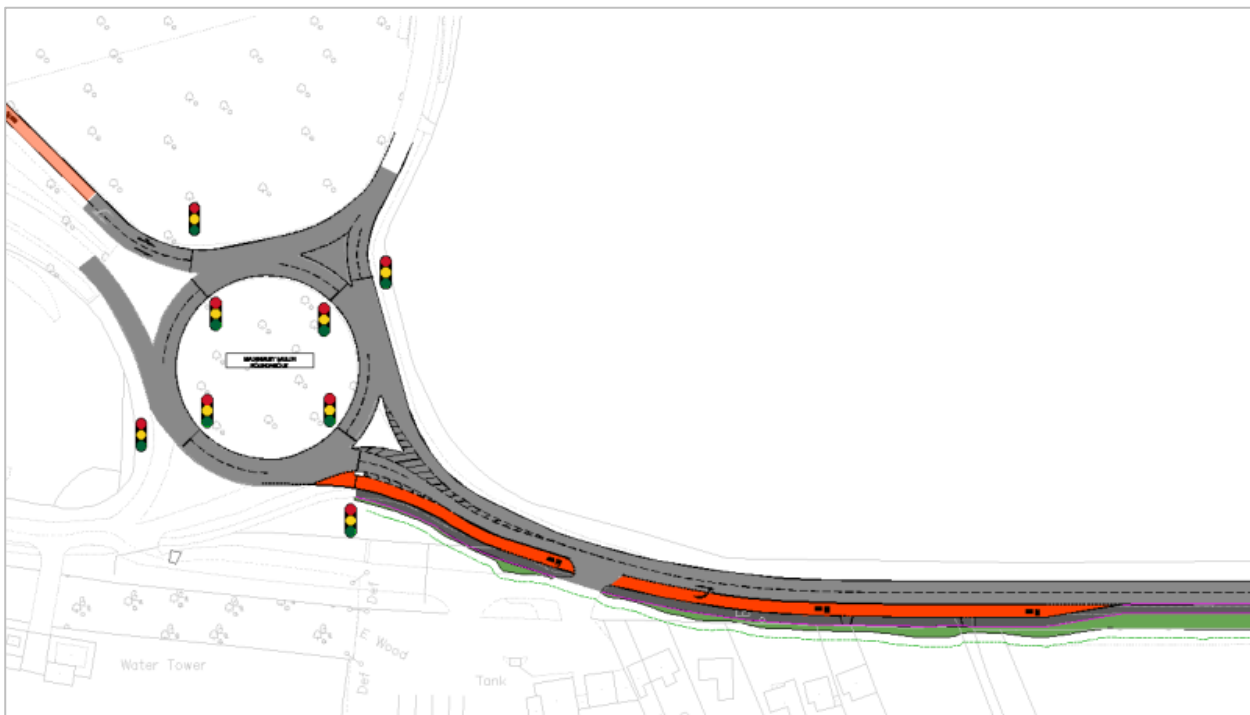


Figure 15: Westbound bus lane into Madingley Mulch roundabout (from QW 3.1/Mott MacDonald)

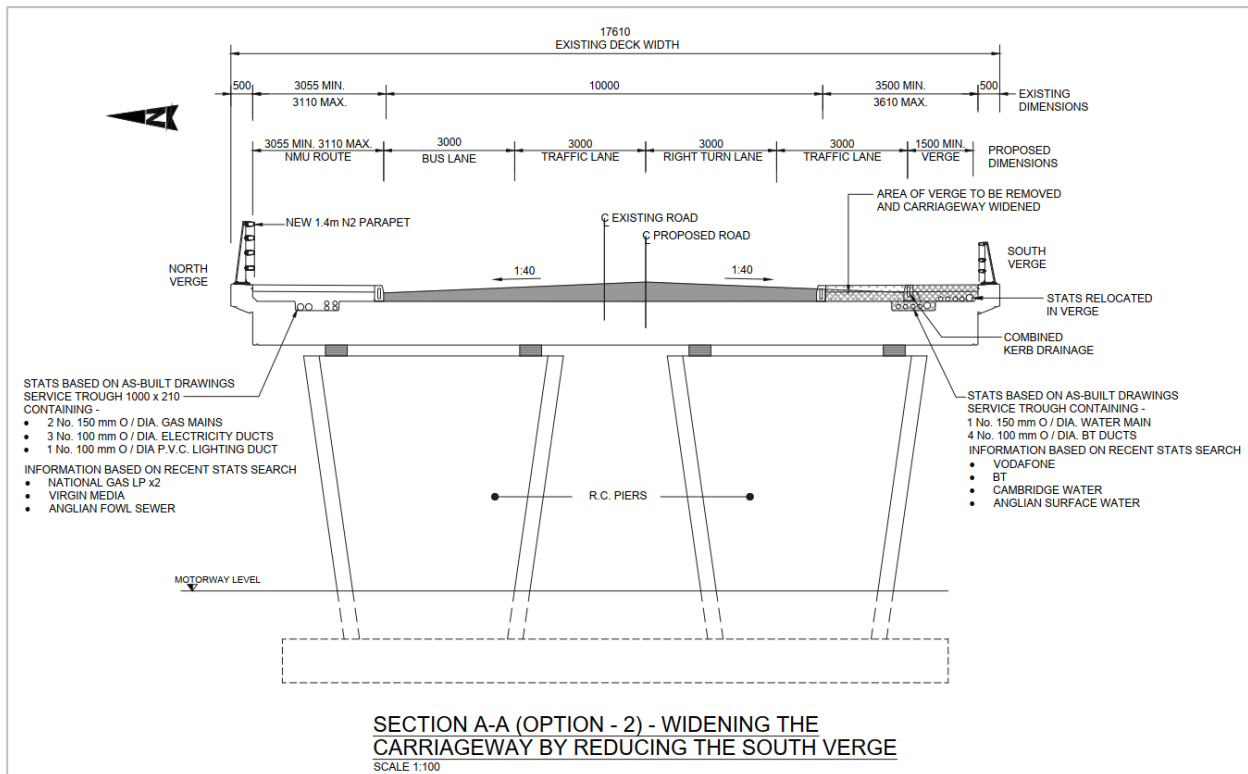


Figure 16: Four-lane configuration of M11 “Rectory Farm” bridge (from RFB page 33 © 2016 Atkins Ltd)



Figure 17: M11 exit junction with Madingley Rd in 2014 (© 2014 Google)



Figure 18: Current M11 exit junction with Madingley Rd (© 2020 Edward Leigh)

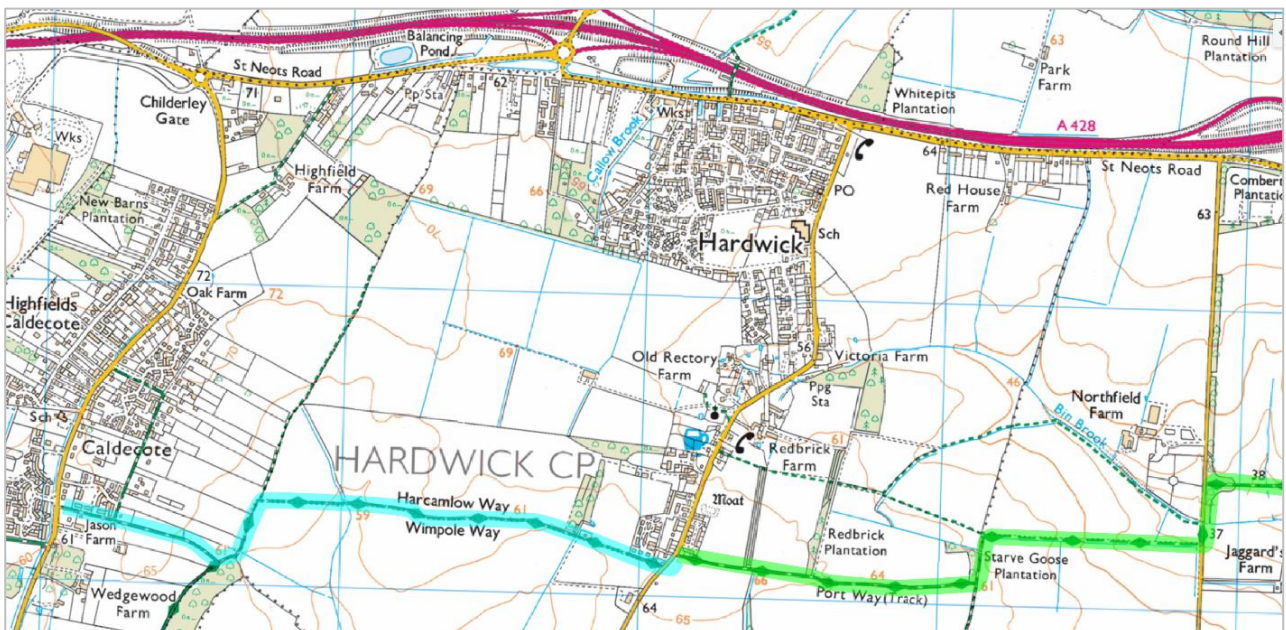


Figure 19: The Comberton Greenway (green) could be extended (blue) via the Harcamlow Way bridleway to Highfields Caldecote (shown here on the Ordnance Survey map)



Figure 20: Topographical view of Cambourne to Cambridge showing elevation in colours and Comberton Greenway route (in black)

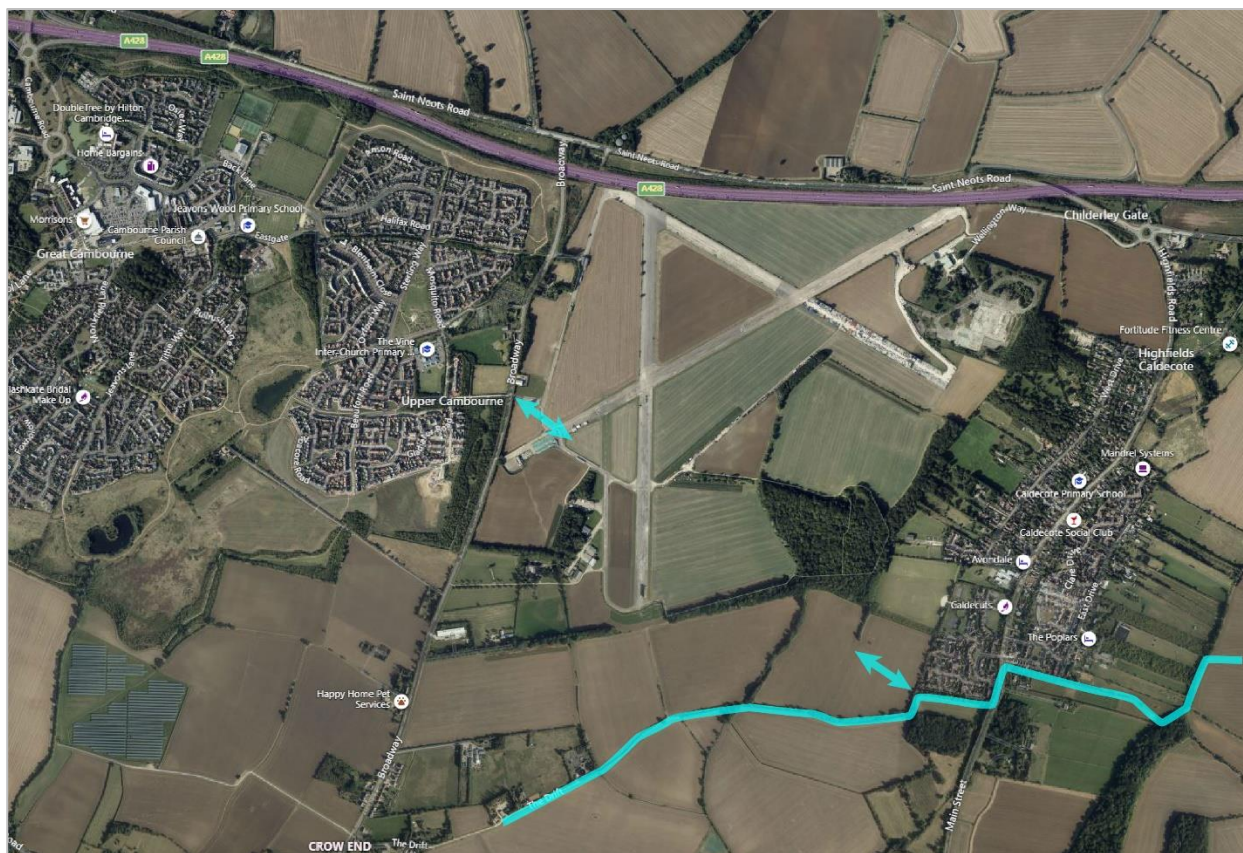


Figure 21: Indicative connection points for an NMT route through the Bourn Airfield development, connecting Cambourne to Highfields Caldecote and a westward extension of the Comberton Greenway, as shown in Figure 19 (Ordnance Survey imagery)

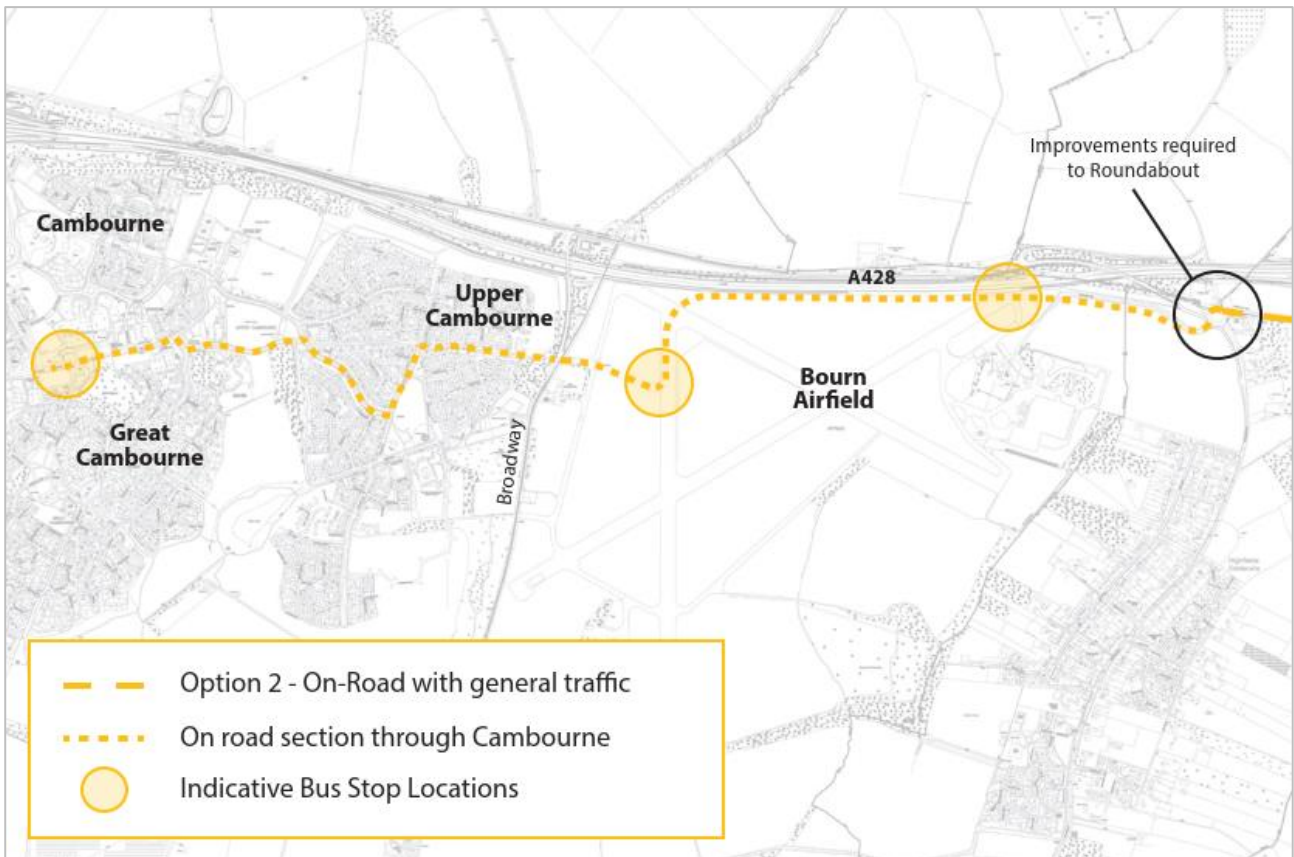


Figure 22: Indicative bus route as part of C2C Busway (from NTS page 38)



Figure 23: Technical drawing showing junction on Broadway with Bourn Airfield western access point (from OAR Part 3, page 70)

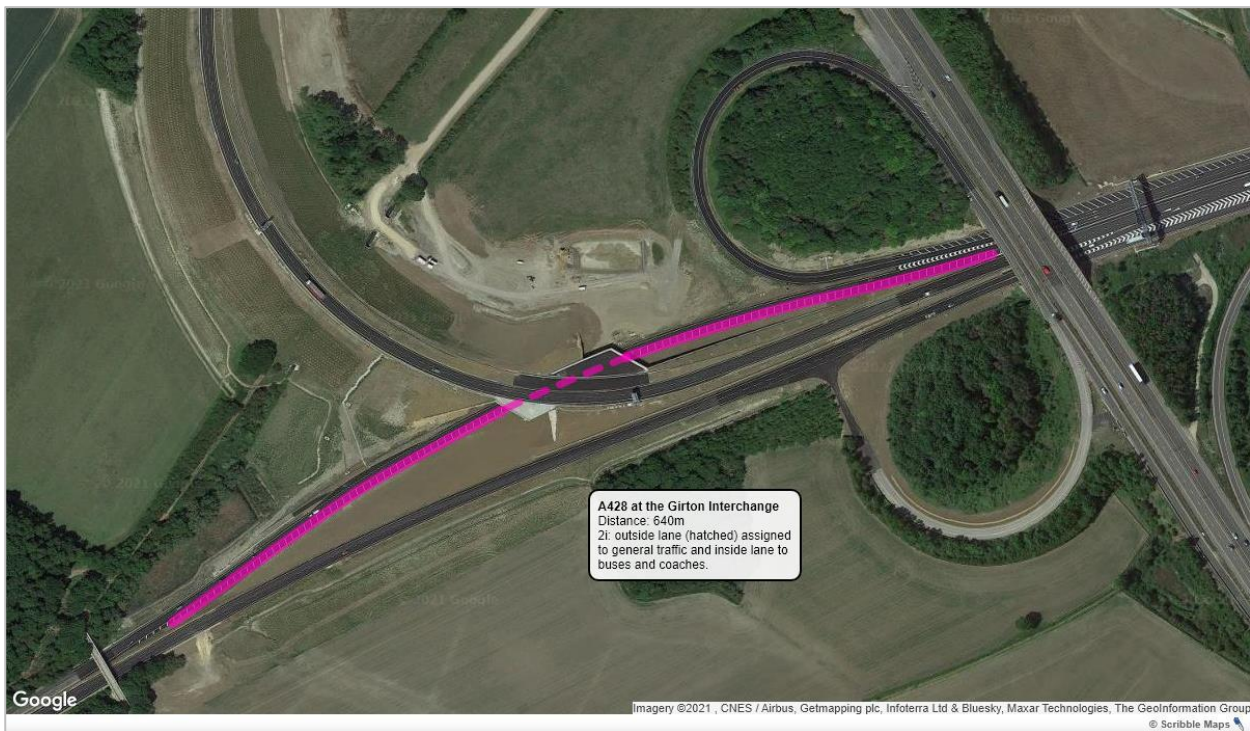


Figure 24: Reassignment of hatched outside lane on A428 at the Girton Interchange to create a 640m long bus and coach lane