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Appendices

A428 Western Corridor Study Cambridgeshire County Council

June 2014



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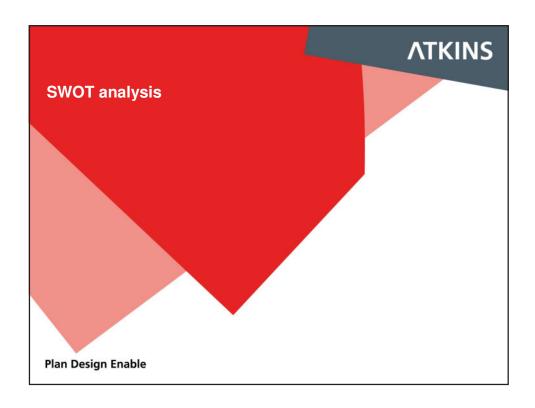
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Appendix A.SWOT Analysis, Planning Objectives and Background Information

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Strengths

- Existing Park & Ride site captures up to 45% of AM peak traffic in scope.
- Dualled section of A428 provides for fast and reliable journey times.
- Direct car access to the Science Park via the A14 / CNB.
- Strong appetite for development along the corridor.
- · Undeveloped employment sites at Cambourne.
- · Clearly defined catchment area.
- · Existing cycle provision in some sections of the corridor.

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Weaknesses

- Significant peak in eastbound A1303 traffic flow (at P&R)
- Significant journey time variability along the single carriageway sections
- Low traffic speeds in both peaks, particularly approaching / at key junctions
- During AM peak 80% of route length from A428 / A1303 junction to M11 J13 is subject to queues.
- Average delay in AM peak of 18 min between A428 / A1303 junction and Queens Road / Northampton Street. Average delay in AM peak of 10 min between St Neots and Caxton Gibbet.
- Lack of priority for bus services along the corridor
- Questionable commercial viability of bus services?
- · Impact of interaction between P&R, M11 and other traffic
- P&R location (M11 vs. A428)
- · Non-continuous cycle provision along the corridor.

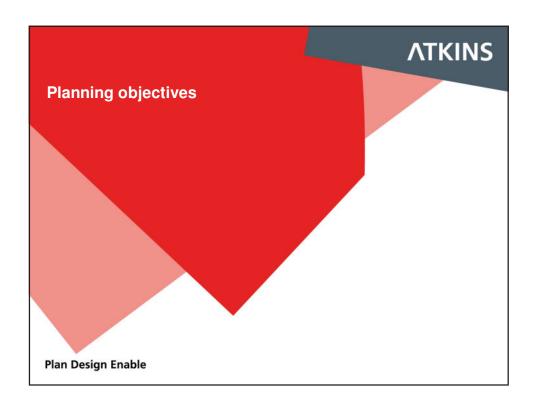
Opportunities

- High proportion (28% AM peak) of existing trips on A428 corridor are destined for central Cambridge (RSI) – strong customer base.
- Peak journey times Madingley Mulch-Queens Road c. 3x inter-peak
- Current/future queuing acts as incentive to use alternative mode
- Scope for options within highway boundary, particularly A1303 east of the M11 to Storeys Way.
- Potential for a range of different solutions for Cambourne and Bourn away from the A1303.
- Potential for safeguarding off-line route alignment before growth takes place.
- Potential for using the old A428 east of Caxton Gibbet for public transport and improved / safer cycle provision.
- · Capitalise on current access improvements being made at Madingley P&R.
- Additional outer P&R site to capture trips from new developments and A428 demand.
- Displace some M11 and/or P&R traffic elsewhere?

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Threats

- Madingley Rise currently at saturation point in morning peak (queues would get worse on upstream sections with adverse impacts on journey times and accidents rates).
- Forecast (2031) growth in car trips on the A428 corridor to Cambridge of 45% in the morning peak hour [but little effect on Madingley Road traffic flows]
- 70% growth in the inter-peak and 50% in the evening peak with growth.
- · No dominant traffic movement where Madingley Road meets Queens Road.
- Future travel patterns likely to become more diverse in terms of Cambridge destinations.
- Increase in trip attractors on Madingley Road (difficult to serve by P&R).
- Lack of PT alternative and route choice for destinations served by M11 south.
- · Unknown impacts of A14 improvements.
- Physical constraints (e.g. environmental designations, heritage sites, listed buildings, bridging the M11, US military cemetery, development).
- Legal and institutional constraints (draft Local Plan, range of landowners, organised opposition, potential for non-local plan growth proposals).
- · Zero opportunities for new alignments within the inner ring road.



Planning objectives - What?

- A definition of the outcome the solution(s) are intended to achieve
 - Congestion free PT serving the corridor including new developments, in order to avoid an increase in current congestion levels and PT (?) journey times.

Planning objectives - How?

A high quality public transport 'solution' which:

- Serves key current/future trip generators in the A428 corridor (west of the M11), including Cambourne and Bourn.
- Serves key current/future trip attractors in Cambridge Cambridge City Centre and other employment sites.
- Intercept trips from new developments from the outset.
- Provides additional capacity for at least 500 passengers (c.2,000 houses) per AM peak hour. [NB: ignores growth in M11 traffic]
- Offers a level of service which will attract a mode share equivalent to 100% of growth in trips due to development and background growth:
 - A peak service frequency of no less than six buses per hour (assumes standing)
 - · Quality of waiting and in-vehicle environments comparable to the Busway
 - Peak journey times no more than the equivalent journey by car (and preferably less)
 - End to end journey time reliability better than the car alternative (as yet undefined)
- Outcome: no growth in delays on the A428 corridor.

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Key challenge for the study

To achieve the objective of no additional delays/queuing on Madingley Rise, the solution(s) must:

- · 're-mode' some existing car journeys; and
- attract a high share of new journeys (both from new developments and underlying growth);

and/or:

- reduce demand for travel to/from Cambridge [outside scope?];
- 're-time' some car trips away from the peak periods [outside scope?];
- re-assign some car trips onto alternative corridors [at best inconsistent with broader strategy].
- ...noting that there are few alternatives for A428/M11 traffic.

A.2. Current Local Characteristics- Background Information

Social and demographic characteristics

- **Population** At the time of the 2001 Census, the population within the study area stood at approximately 59,001 and by 2011 had grown by approximately 28% to 75,600. This growth was accompanied by an increase in households from approximately 21,500 to over 27,000 over the same period. This growth trend is likely to increase as land is allocated for development under the Local Plan.
- **Employment** unemployment in the study area was 2.3% (2011), compared to 3% in Cambridgeshire and 3.2% in England and Wales. Employment within the study area is skewed towards highly skilled occupations and industries.
- Car Ownership 85% of households own a car, and 42% own two or more cars (2011). Overall car ownership is high in comparison to the average for England (74%) and Wales (32%).
- **Deprivation** 0.9% of the working age population claimed Job Seekers Allowance, compared to 2% across England and Wales, and 1.4% in Cambridgeshire (2011).
- Travel to Work travel demand data demonstrates that the car is the dominant mode of transport. Travel to work data for the study area, shows that typically around two-thirds of journeys to work are made by car. The largest use of bus is in Comberton (6%), Hardwick and Cambridge (5% respectively). Overall, walking and cycling comprises less than 10% of journeys made to work. However there is a considerable range in cycle and walking use between the areas.

Land use and environmental characteristics

ONE PARA SUMMARY

- 1.16. Relevant land use and environmental characteristics are summarised below. Many of which represent physical and legal constraints to any transport intervention within the corridor.
 - Water environment the main water features are the River Cam, the wider flood plain and the associated network of drainage ditches, and groundwater. The attributes of these include water supply, transport and dilution of waste water, biodiversity, aesthetics, recreation, value to economy and conveyancing of flow and flood waters. The study area affected by potential improvements falls within the Environment Agency Flood Zone 3.
 - **Biodiversity** (SSSI, ancient woodland, protected species habitats) There are four Sites of Special Scientific Interest within the study area, Caldecote Meadows, Hardwick Wood, Madingley Wood, and Elsworth Wood (north east of Caxton Gibbet). Madingley Wood, Hardwick Wood Knapwell wood located directly north of Cambourne and the A428, and are classified as ancient woodlands. Additionally, Coton Countryside Reserve is classified as a Strategic Open Space a covers over 300 acres (120ha) of pasture and agricultural land, the Reserve is located near the village of Coton to the west of Cambridge.
 - **Green Belt** the draft Cambridge Local Plan 2014 provides for the continued protection of the Cambridge Green Belt, the River Cam corridor and the setting of the historic city. The need for jobs and homes has to be considered within the context of a tightly-drawn Green Belt, which aims to prevent the city merging with the ring of necklace villages. Small Green Belt releases are permitted where exceptional circumstances can be argued.
 - High quality agricultural land-use Agricultural land forms the greatest proportion of the
 land-use to the north of the A428. Much of the land in the area is some of the best and most
 versatile category of Grades 2 (Very Good) passing to Grade 3 (Good to moderate) in
 smaller sections south of the A428. The majority of the land is under intensive arable
 farming, typical of Grade 2 land.
 - Landscape Character Cambridge and its surrounding landscape are located within Bedfordshire and Cambridgeshire Claylands National Character Area (NCA) as identified by the Countryside Agency's National Character Map. The NCA is a broad, gently undulating, lowland plateau dissected by shallow river valleys that gradually widen as they approach The Fens NCA in the east.

- Air quality The boundary of the Air Quality Management Area is defined by the inner ring
 road and some extension along radial routes. As such the A428 Corridor is outside this zone
 of influence.
- Madingley American Cemetery Madingley American Cemetery and Memorial is situated 3 miles outside of the Cambridge city centre. It is maintained by the American Battle Monuments Commission and is Britain's only World War Two American Military Cemetery. The cemetery is on 30 acres of land donated by the University of Cambridge in 1943.
- **Barton Road Rifle Range** is a MOD gallery range south of the A428 and to the west of the M11 near Cambridge. The range faces north and has a bridal path crossing the range.
- Land owners the land on either side of the corridor is under the ownership of a number of different landowners.

Key employment areas and trip attractors

- Cambridge City Centre Cambridge is the centre of a wider travel to work and housing market area. The city's area of influence, both as a sub-regional centre and a major focus for employment, includes most of Cambridgeshire, and parts of West Suffolk, Bedfordshire, Essex and North Hertfordshire. It has a prosperous and dynamic economic base in high technology, research and development and related service sector industries. Cambridge and South Cambridgeshire provide over 152,800 employee jobs (ONS: Annual Business Inquiry 2008 cited in Nomis [online], 2013), approximately 88,100 of which are based within the city boundary. Cambridge's total jobs figure is 100,000. Labour demand is higher than its available workforce, with a jobs-to-working age population ratio of 1.13 (ONS: Jobs Density 2008 cited in Nomis [online], 2013) leading to high levels of in-commuting.
- Cambridge Biomedical Campus, Addenbrookes Cambridge Biomedical Campus, located at the southern edge of Cambridge, is one of the largest centres of health science and medical research in the world and the largest such centre in Europe. It is an accredited UK academic health science centres and home to Addenbrookes Hospital and the university's medical school. There are approximately 7,000 healthcare professionals and research scientists working onsite. Astra Zeneca is moving its headquarters to the Cambridge Biomedical Campus where they will employ 2,000 people. A further 13,000 new jobs are planned for the site, which will also house the relocated Papworth Hospital. The campus will eventually have a working population of around 30,000, making it one of the largest biomedical sites in the world.
- Cambridge Science Park The Science Park has a concentration of science and technology related businesses, and has strong links with the nearby University of Cambridge. It is located 3 km to the north of Cambridge city centre, by junction 33 of the A14, and covers 152 acres. Over 100 companies operate onsite, employing c. 5,000 people.
- University of Cambridge Cambridge is formed from a variety of institutions which include 31
 constituent colleges and over 100 academic departments which are organised into six Schools. The
 university occupies buildings throughout the town and is a major trip attractor. Transport characteristics

A.3. Current Transport Characteristics- Background Information

Bus services

- 1.17. There is a lack of priority for bus services along the A428 corridor. There is a section of bus lane on the inbound lane of the A1303 east of Madingley Mulch, however, it ends before the M11 bridge.
- 1.18. Bus operations in the A428 corridor are primarily conducted by Stagecoach and Whippet Coaches. Stagecoach provides regular city based and P&R services during the weekday peak period, as well as a longer distance service to Oxford (X5) running half hourly between Cambridge to St Neots via Madingley Road, Bedford and Milton Keynes. Whippet Coaches provide long distance coach services and serve Cambourne.
- 1.19. While there are relatively frequent connections from Cambridge to Cambourne, the connections further west linking St Neots are less frequent.
- 1.20. Table-1 shows the timetabled services operating along and in proximity to the A428 corridor, which constitutes 22 services per hour in each direction between 08:00 and 09:00, with 20 services per hour between 17:00 and 18:00 in each direction.

Table-1 Bus services in the A428 corridor

Route No	Route	Frequency	Operator	
1	Cambourne - Papworth - Fenstanton - St Ives	Hourly Monday to Saturday	Whippet Coaches	
2	Cambridge - Hardwick - Toft - Caldecote - Boxworth	One per day Monday to Friday	Whippet Coaches	
3	Huntingdon - Godmanchester - Papworth Everard	4 per day Monday to Saturday	Whippet Coaches	
Citi 4	Cambridge - Hardwick - Cambourne	Approx. every 15mins in AM peaks, hourly off peak Every day	Stagecoach in Cambridge	
UNI 4	Addenbrookes - City Centre - West Cambridge - Madingley Road Park & Ride	Every 20mins	Stagecoach	
X5	Cambridge - St Neots - Bedford - Milton Keynes - Oxford	Half hourly	Stagecoach East	
10	Comberton Village College - Kingston - Cambourne - Caxton	Monday to Friday One per day. School service.	Whippet Coaches	
18	Cambridge - Cambourne	Hourly Monday to Saturday	Stagecoach in Cambridge	
28	St Neots - Abbotsley - Gamlingay - Cambourne (- Papworth)	5 per day Monday to Saturday	Whippet Coaches	
77	Madingley Road P&R – Newmarket Road P&R	Every 10mins	Stagecoach	

1.21. A number of fare and ticket variants exist for the above services ranging from city based Dayrider to a Megarider which allows unlimited travel on the Stagecoach network in Cambridgeshire.

Park and Ride

- 1.22. Madingley Road Park and Ride contributes to the wider strategy by intercepting car users before they add to congestion in central areas. The Park and Ride site is located on the northern side of the A1303 to the east of the M11. The latest journey figures available for 2008 show a 33% increase in passenger journeys on the 2007 figure, as shown in Table-2. The increase is due, in part, to growth in concessionary travel fares.
- 1.23. Road side interview data from 2013 demonstrates that the existing Park & Ride site captures up to 45% of AM peak traffic in scope.

Table-2 Annual park and ride patronage

	2004	2005	2006	2007	2008
Madingley Rd/ Newmarket Rd	1,168,654	1,227,910	1,226,588	1,269,967	1,689,272

Walking and cycling

- 1.24. Walking is provided for in the study area by footpaths along the A1303. Signalised junctions incorporate pedestrian phases and pelican crossing are sited at key locations. The bypassed section of St Neots Road also provides footway facilities.
- 1.25. In the context of this study, walking also forms a key part of any public transport trip, providing a means of gaining access to the bus stop. Walking accounts for 6% of journeys to work. This figure could potentially be much higher as the car is currently used for many short distance trips.
- 1.26. Cycling accounts for 3% of journeys to work. Non-continuous cycle provision is provided along the corridor. Cycle facilities are provided in the form of advisory cycle lanes on certain parts of the A1303 and advanced stop lines at some junctions. The majority of Madingley Road A1303 is designated as local links for cyclists and links to villages off road, with the section between Clerk Maxwell Road and Storey's Way designated as signed primary network off road. Cycling may be discouraged by the high traffic volumes and perceived dangers from speeding vehicles along the corridor. As there is limited cycle infrastructure within the corridor, there may be a suppressed demand for cycling.

Highways

- 1.27. East of Caxton Gibbet the A428 is dual carriageway, bypassing the existing single carriageway section near Hardwick.
- 1.28. Table -3 indicates journey to work movements within Cambridgeshire, which is based on the 2001 census as the 2011 data, has not been released. The majority of journey to work movements focused on Cambridge.

Table 1. Table -3 Journey to work movements per day (2001 Census)

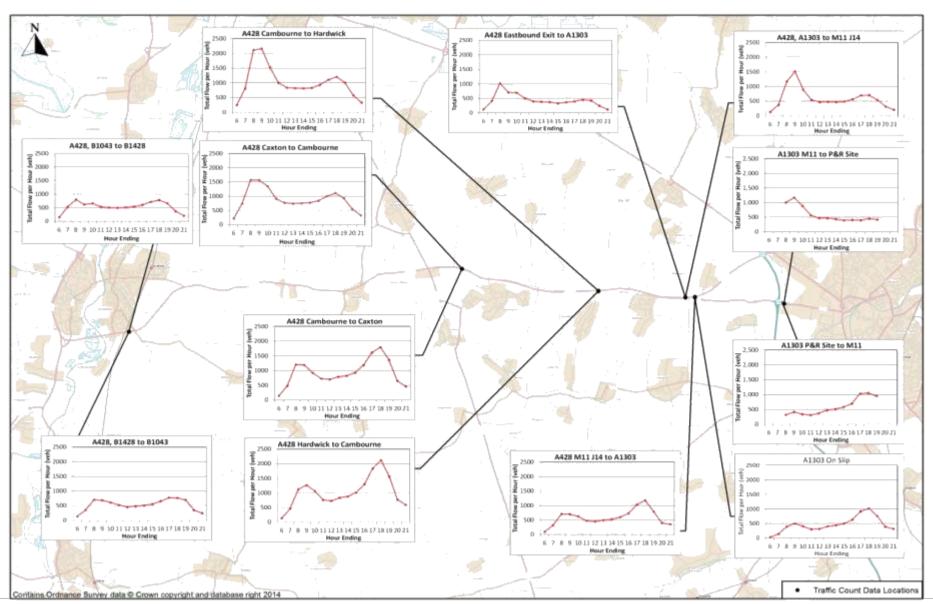
Ward	Cambridge	Bourn	Caldecote	Comberton	Hardwick	Huntingdon	Other	Papworth & Elsworth	St Neots	ТОТАГ
Cambridge	35,346	161	59	21	22	260	12,939	124	77	
Bourn	422	384	15	6	3	39	672	40	39	
Caldecote	275	18	254	12	3	8	272	8	0	
Comberton	483	14	30	255	6	7	370	7	0	
Hardwick	613	25	22	12	302	22	504	9	6	
Huntingdon	448	35	0	0	0	5,108	4,642	94	186	
Other	40,257	861	242	103	99	10,515	23,391, 010	1,147	3,534	
Papworth & Elsworth	445	35	9	0	3	96	799	732	32	
St Neots	526	119	9	0	0	878	6,093	130	6,651	
TOTAL										

Current traffic levels

- 1.29. illustrates the traffic flow at a number of count locations within the corridor. Key observations from this and other data sources are as follows.
 - There is a significant peak in eastbound A1303 traffic flow (at P&R) into Cambridge City Centre in the AM peak. The A1303 also experiences low traffic speeds in both peaks, particularly approaching / at key junctions.
 - During the AM peak period, 80% of route length from A428 / A1303 junction to M11 J13 is subject to queues. The average delay in the AM peak is 18 min between A428 / A1303 junction and Queens Road / Northampton Street. While between St Neots and Caxton Gibbet, the average delay in AM peak is 10 min.
 - Madingley Rise is currently at saturation point in morning peak (queues would get worse on upstream sections with adverse impacts on journey times and accidents rates). Such congestion also affects the reliability of road based public transport.
 - Traffic data has been made available from a previous study which allows analysis of the traffic distribution at the eastern end of Madingley Road. There is no dominant traffic movement where Madingley Road meets Queens Road with approximately half of traffic going north along Chesterton Road and half south along Queen's Road.
 - Those travelling to the Science Park by car can access it directly via the A14 / Cambridge Northern Bypass which provides an attractive alternative to the A1303 as a key route.
 - Existing Park & Ride site east of the M11 captures up to 45% of AM peak traffic in scope, accommodating over 1000 car entries per day. However, the interaction between the P&R, M11 and other A1303 traffic can result in queuing for traffic entering the P&R.
 - There is an approximate 75/25 split between A428 corridor traffic and M11 traffic.

Appendices

Figure 1. A428 corridor traffic flows, between St Neots and Cambridge



A.4. Current Problems- Background Information

Journey time variability

- 1.30. The dual carriageway section of A428 provides for fast and reliable journey times. However, while the A428 is a dual carriageway east of Caxton Gibbet and the A1 and A421 to the west are also dual carriageways, the A428 between Caxton Gibbet and St Neots is a single lane carriageway. This section currently experiences congestion at certain times of the day with significant journey time variability.
- 1.31. Journey time variability has been highlighted to be greatest in the peak traffic flow directions towards Cambridge in the morning and towards St Neots in the evening. Time lost in queues and significant delays due to bottlenecks along the corridor can negatively impact the economy.
- 1.32. **Error! Reference source not found.** presents journey time variability for the A428/A1303 eastbound in the AM Peak, while **Error! Reference source not found.** 3 presents westbound journey time variability in the PM Peak. Locations of high journey time variability are:
 - A428 between St Neots and Caxton Gibbet, particularly between Croxton and the B1040 AM Peak:
 - A1303 between the A428 and Queens Road, particularly the section to the west of the M11 AM Peak;
 - A1303 between Queens Road and the M11 PM Peak; and
 - A428 between B1428 and Barford Road PM Peak.

Figure 2. Journey time variability for A428/A1303, eastbound, morning peak hour

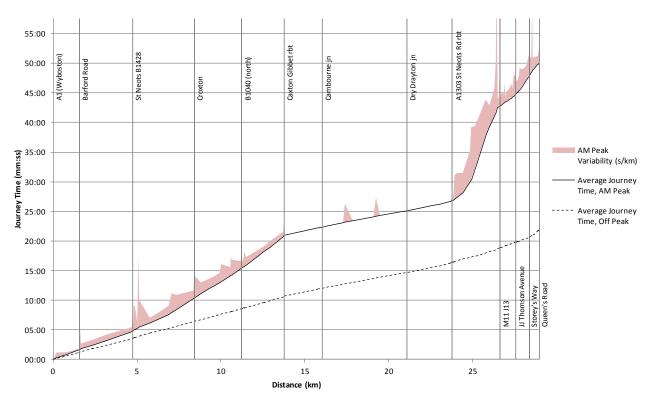
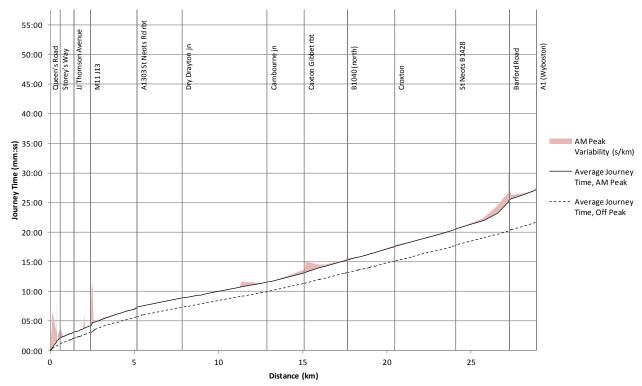


Figure 3. Journey Time Variability for A428/A1303, westbound, evening peak hour



A1303 congestion

1.33. Madingley Rise is currently at saturation point in morning peak. Greater than 80% of the length of Madingley Rise is travelling below 20mph between 07:45 and 09:00. While greater than 80% of traffic on Madingley Road is travelling below 20mph between 08:15 and 08:45.

Road safety

- 1.34. A summary of accidents for the period from January 2009 to December 2013 along the A428/A1303 Corridor is shown in Table-4 classified as slight, serious or fatal dependent upon the nature of any injuries sustained.
- 1.35. 189 accidents were recorded along the corridor with concentrations along the A1303 from Madingley to M11, and on the A428 from Caxton Gibbet to Eltisley. The majority of accidents involved motorised vehicles, with five accidents involving pedal cycles.
- 1.36. While the majority of recorded accidents were slight in nature, there have been a number of serious and fatal incidents. Many accidents occurred at or near to junctions along the corridor and involved a number of common factors, such as driving too fast, too close or failing to judge the path or speed of other road users.

Table-4 Location of accidents recorded on the A428 Corridor 2009-2013

Section	Slight	Serious	Fatal	Total	Involved Pedal Cycles
A428 St Neots Bypass	9	2	0	11	0
A428 St Neots to Croxton	8	2	0	10	1
A428 Croxton to Eltisley	5	0	1	6	0
A428 Eltisley to Caxton Gibbet	27	10	0	37	1
A428 Caxton Gibbet to Cambourne	16	2	1	19	0
A428 Cambourne to Hardwick	6	3	1	10	0
A428 Hardwick to Madingley	11	3	0	14	0

Section	Slight	Serious	Fatal	Total	Involved Pedal Cycles
A1303 Madingley to M11	22	6	2	30	0
A1303 M11 to Queens Road	19	4	0	23	2
St Neots Road Caxton Gibbet to Cambourne	2	1	0	3	0
St Neots Road Cambourne to Childerly Gate	10	1	0	11	0
St Neots Road Childerly Gate to Hardwick	2	1	0	3	0
St Neots Road Hardwick to Madingley	11	1	0	12	1

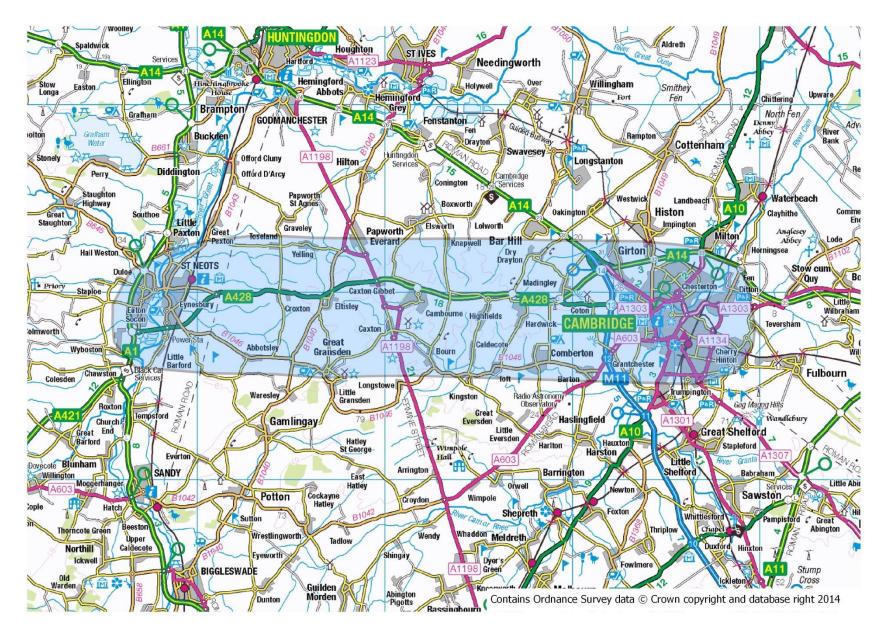
Figure 4.

A.5. SWOT Analysis Table

SWOT Analysis

Strengths	Weaknesses					
 Existing Park & Ride site captures up to 45% of AM peak traffic in scope. Dualled section of A428 provides for fast and reliable journey times. Direct car access to the Science Park via the A14 / CNB. Strong appetite for development along the corridor. Undeveloped employment sites at Cambourne. Clearly defined catchment area. Existing cycle provision in some sections of the corridor. 	 Significant peak in eastbound A1303 traffic flow (at P&R) Significant journey time variability along the single carriageway sections Low traffic speeds in both peaks, particularly approaching / at key junctions During AM peak 80% of route length from A428 / A1303 junction to M11 J13 is subject to queues. Average delay in AM peak of 18 min between A428 / A1303 junction and Queens Road / Northampton Street. Average delay in AM peak of 10 min between St Neots and Caxton Gibbet. Lack of priority for bus services along the corridor Questionable commercial viability of bus services? Impact of interaction between P&R, M11 and other traffic P&R location (M11 vs. A428) Non-continuous cycle provision along the corridor. 					
Opportunities	Threats					
 High proportion (28% AM peak) of existing trips on A428 corridor are destined for central Cambridge (RSI) – strong customer base. Peak journey times Madingley Mulch-Queens Road c. 3x inter-peak Current/future queuing acts as incentive to use alternative mode Scope for options within highway boundary, particularly A1303 east of the M11 to Storeys Way. Potential for a range of different solutions for Cambourne and Bourn away from the A1303. Potential for safeguarding off-line route alignment before growth takes place. Potential for using the old A428 east of Caxton Gibbet for public transport and improved / safer cycle provision. Capitalise on current access improvements being made at Madingley P&R. Additional outer P&R site to capture trips from new developments and A428 demand. Displace some M11 and/or P&R traffic elsewhere? 	 Madingley Rise currently at saturation point in morning peak (queues would get worse on upstream sections with adverse impacts on journey times and accidents rates). Forecast (2031) growth in car trips on the A428 corridor to Cambridge of 45% in the morning peak hour [but little effect on Madingley Road traffic flows] 70% growth in the inter-peak and 50% in the evening peak with growth. No dominant traffic movement where Madingley Road meets Queens Road. Future travel patterns likely to become more diverse in terms of Cambridge destinations. Increase in trip attractors on Madingley Road (difficult to serve by P&R). Lack of PT alternative and route choice for destinations served by M11 south. Unknown impacts of A14 improvements. Physical constraints (e.g. environmental designations, heritage sites, listed buildings, bridging the M11, US military cemetery, development). Legal and institutional constraints (draft Local Plan, range of landowners, organised opposition, potential for non-local plan growth proposals). Zero opportunities for new alignments within the inner ring road 					

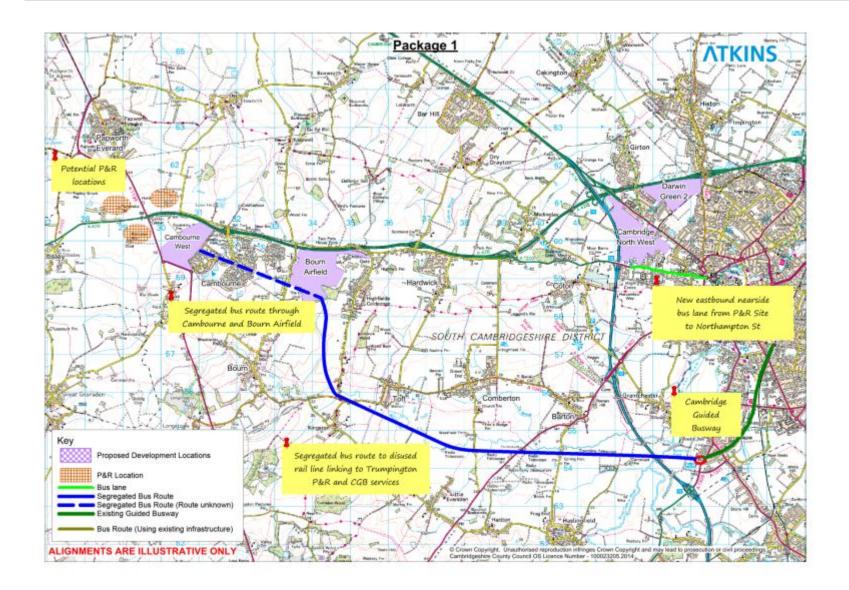
A.6. Area of Interest

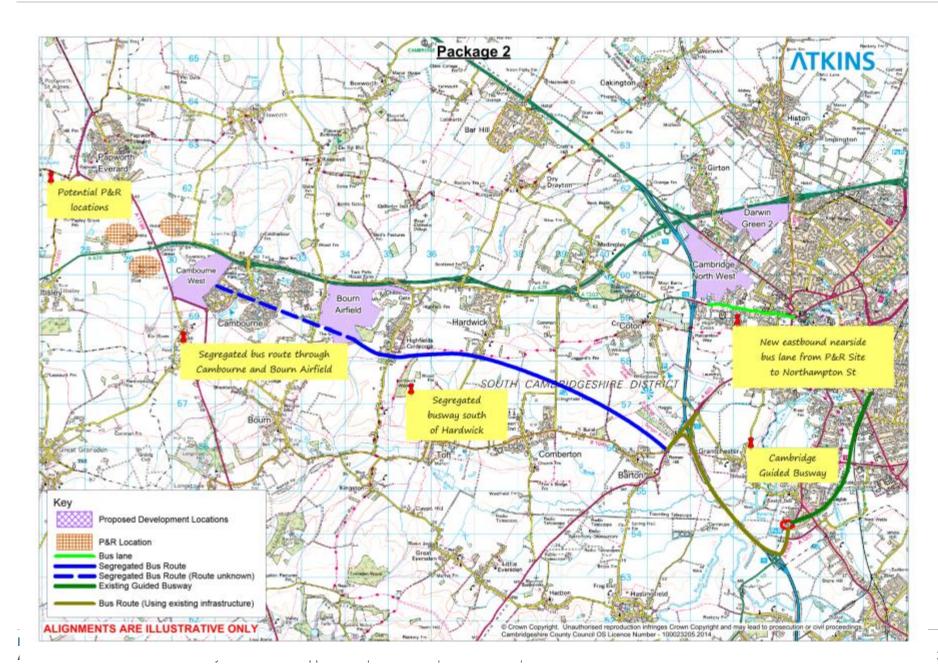


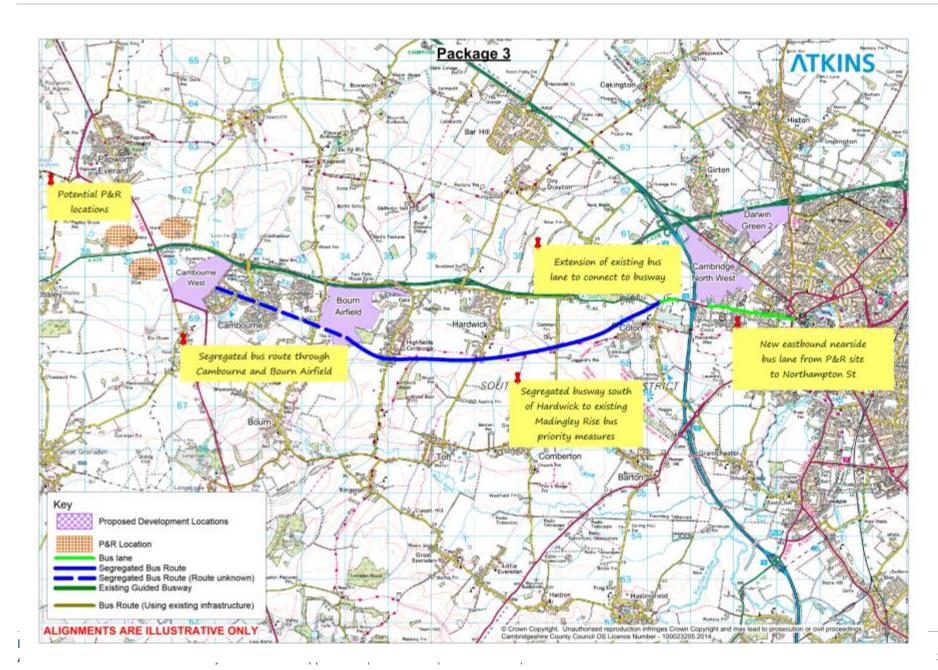
Appendix B. Options Development

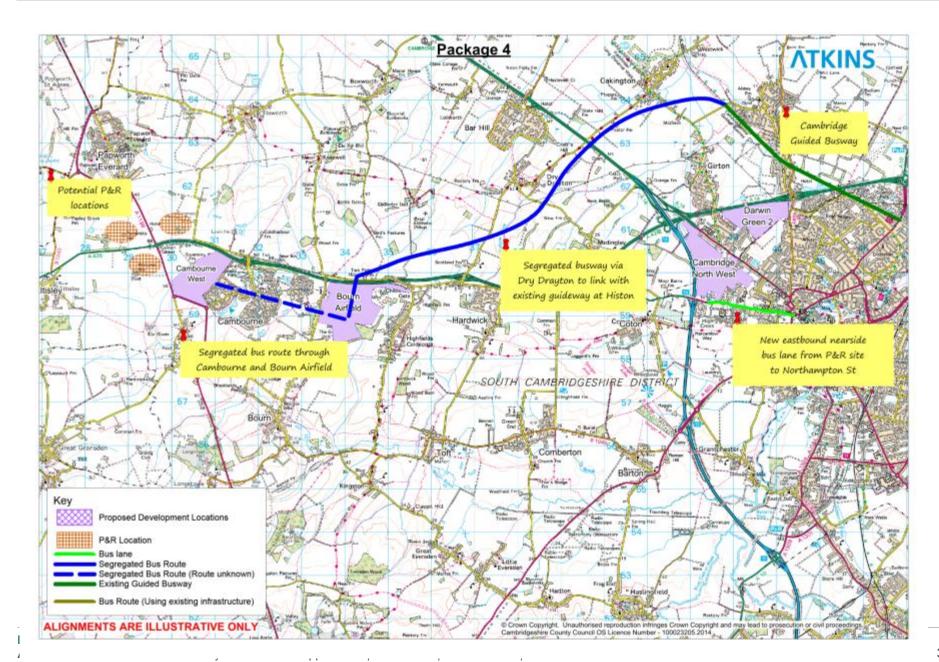
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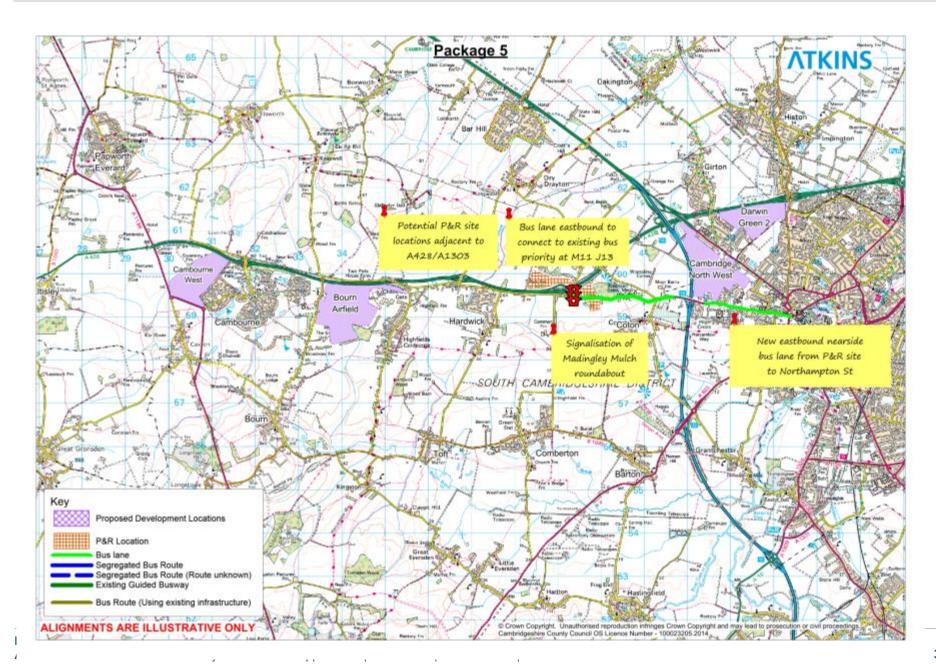
B.1. Option Maps

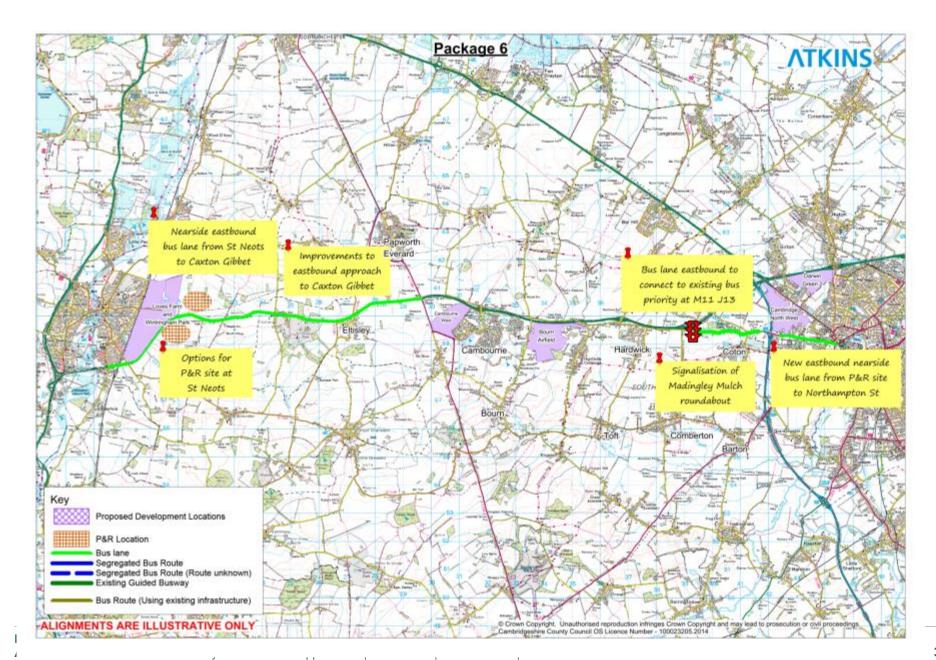


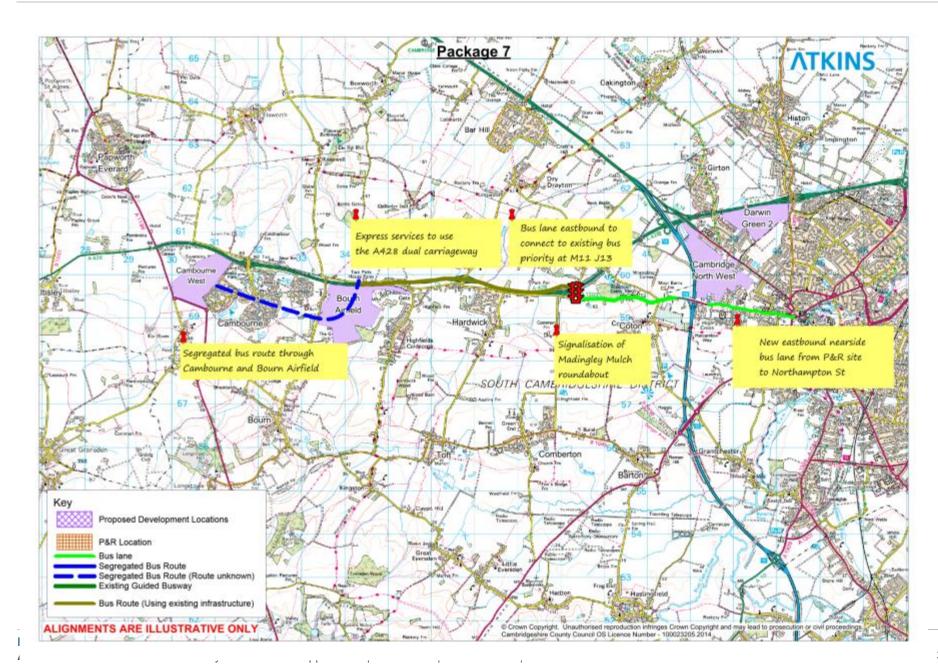


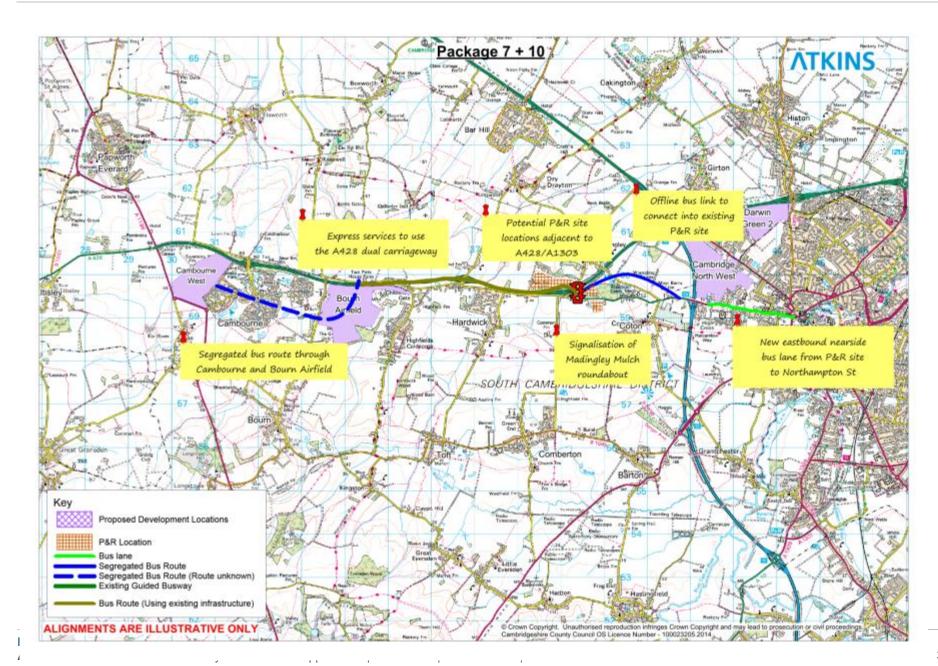


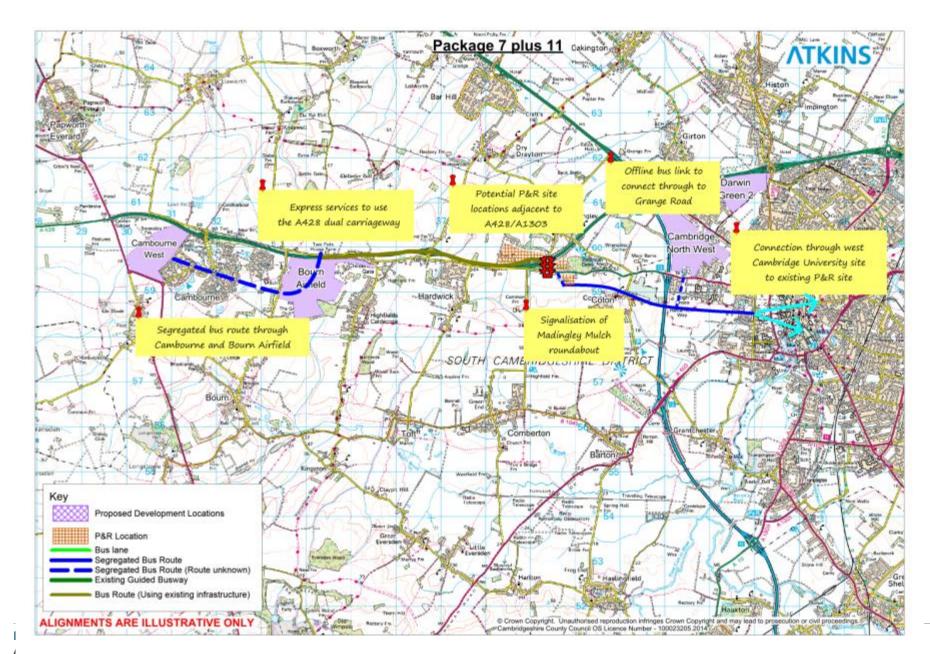


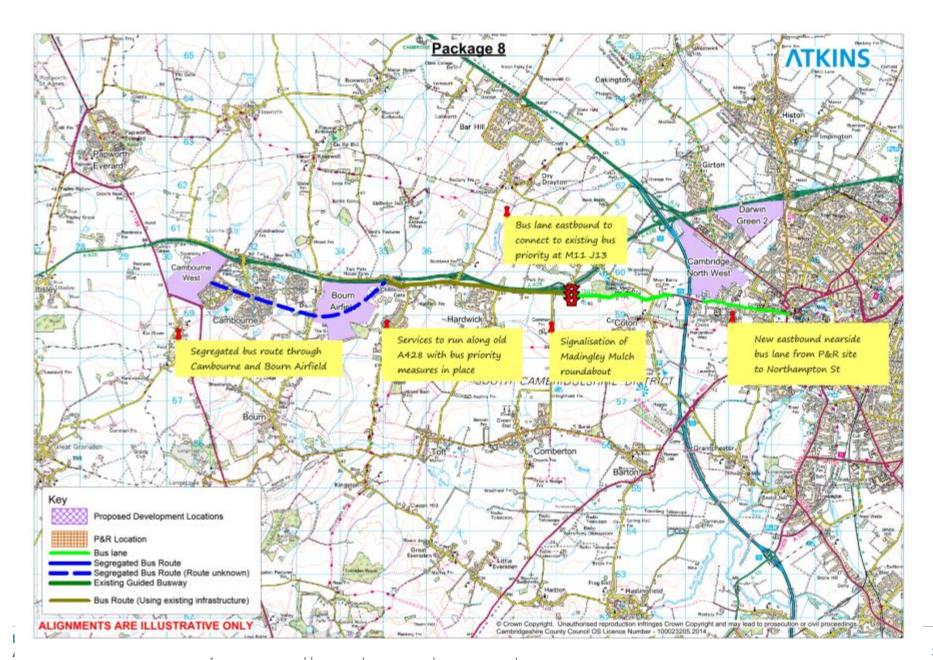


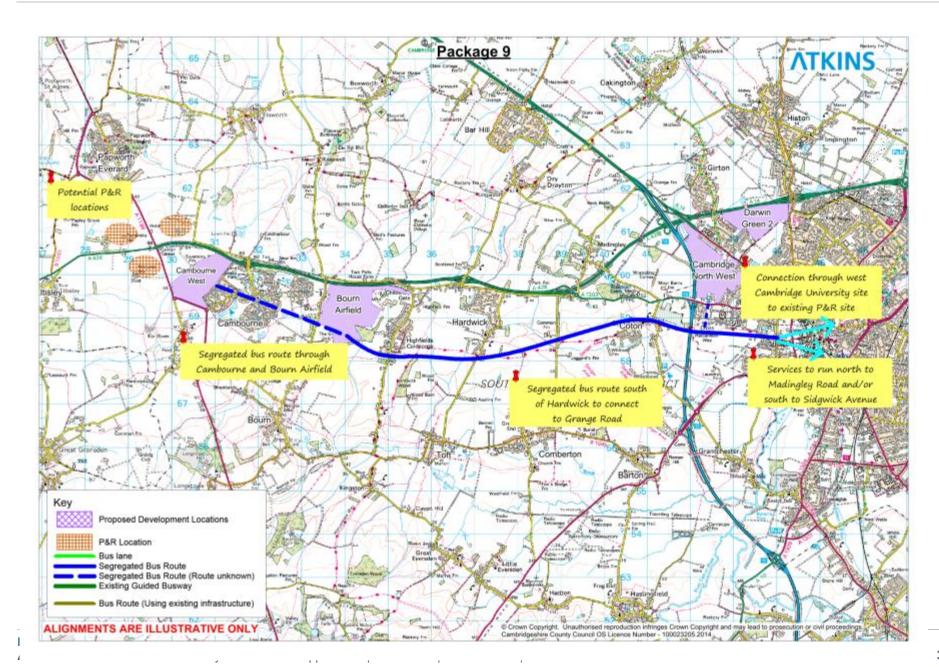


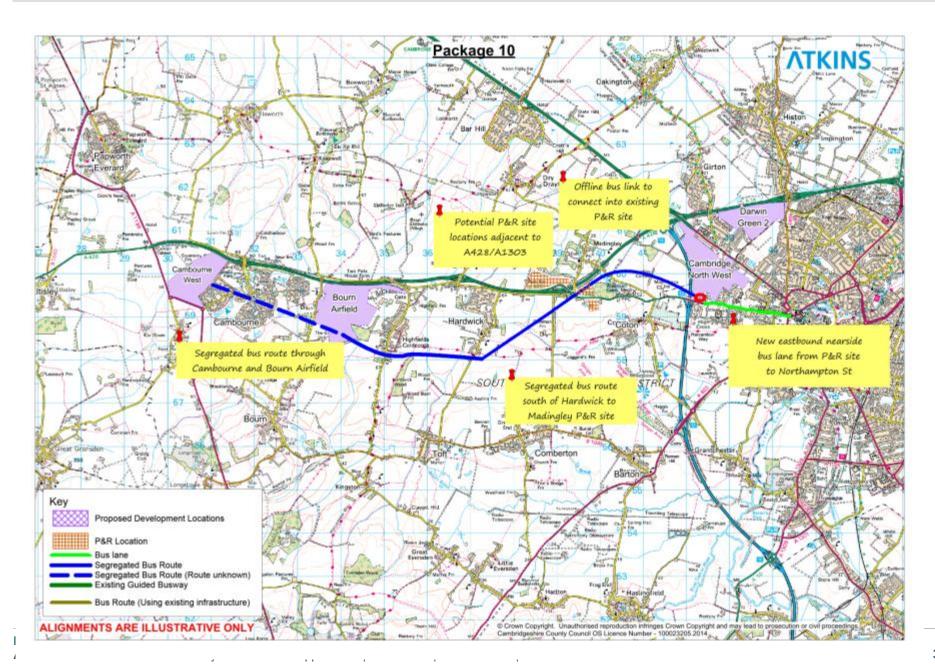


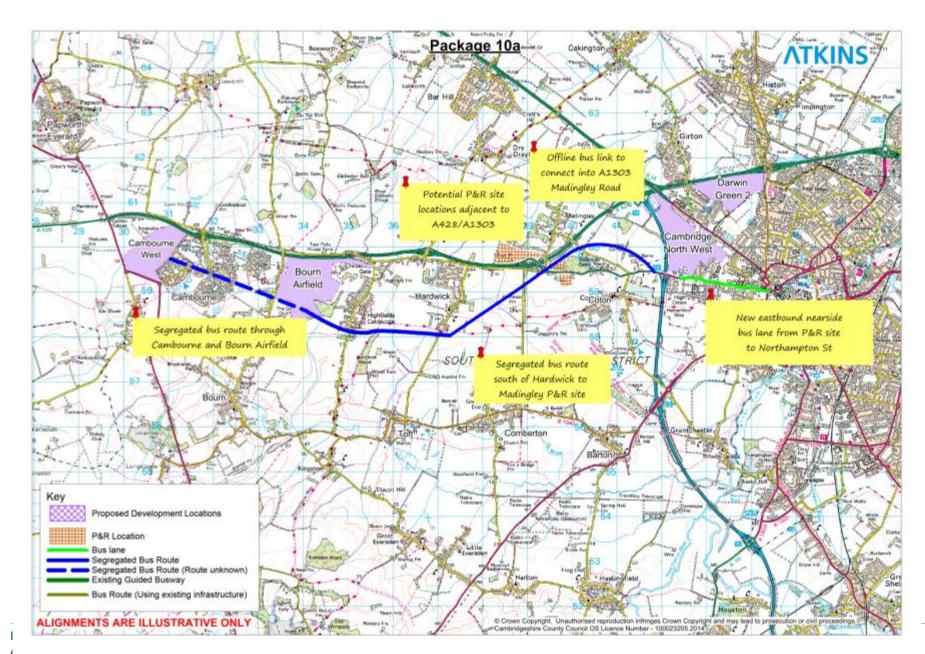






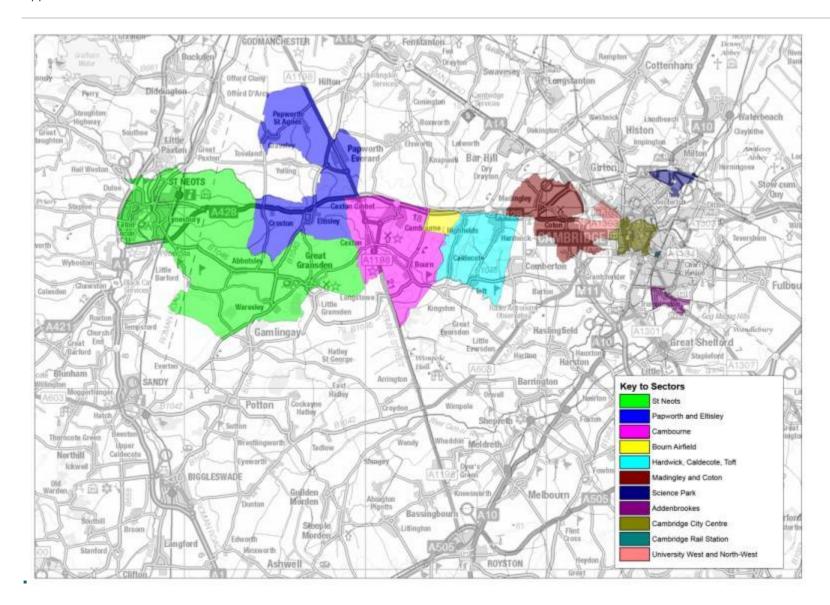






B.2. Sector Map

Appendices



B.3. Option Sifting Summary Table

Appendices

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B.4. Option Descriptions

Option 1

A Park and Ride site located near the A1198/A428 junction would feed a segregated bus route through/around Cambourne and Bourn Airfield with stops at each. Southern busway route via the old Bedford to Cambridge Rail Line to Trumpington Park and Ride site. The distance between Cambourne and the Trumpington P&R site via this route would be **15.9km**. This would then connect to the existing Cambridgeshire Guided Busway to ultimately serve the rail station and City Centre areas. An online nearside eastbound only bus lane improvement along Madingley Road will help to benefit the existing Park and Ride site at Madingley to help serve the western side of the City Centre (**2.0km**). This scheme is forecast to offer an average journey time saving of between 4 and 5 minutes per person.

- Distance from Cambourne to Trumpington P&R via new busway = 15.9km
- Length of Madingley Road bus lane improvement (inbound only) = 2.0km
- Average journey time saving per person is between 4 and 5 minutes

Option 2

A Park and Ride site located near the A1198/A428 junction would feed a segregated bus route through/around Cambourne and Bourn Airfield with stops at each. Central busway route south of Hardwick to connect to M11 J12. On-road service along the M11 to J11 to link to Trumpington Park and Ride site. The distance up to this point would be **11.4km**. This would then connect to the existing Cambridgeshire Guided Busway to ultimately serve the rail station and City Centre areas. An online nearside eastbound only bus lane improvement along Madingley Road will help to benefit the existing Park and Ride site at Madingley to help serve the western side of the City Centre (**2.0km**). This scheme is forecast to offer an average journey time saving of between 2 and 5 minutes per person.

- Distance from Cambourne to Trumpington P&R via new busway = 11.4km
- Length of Madingley Road bus lane improvement (inbound only) = 2.0km
- Average journey time saving per person is between 2 and 5 minutes

Option 3

A Park and Ride site located near the A1198/A428 junction would feed a segregated bus route through/around Cambourne and Bourn Airfield with stops at each. Central busway route south of Hardwick and north of Coton, (10.9km) to connect to the existing bus priority measures (which would be extended westwards) immediately west of the existing Madingley Road Park and Ride site. An online nearside eastbound only bus lane improvement along Madingley Road will help to benefit the existing Park and Ride site at Madingley to help serve the western side of the City Centre (2.0km). This scheme is forecast to offer an average journey time saving of between 2 and 4 minutes per person.

- Distance from Cambourne to busway junction with A1303 via new busway = 10.9km
- Length of Madingley Road bus lane improvement (inbound only) = 2.0km
- Average journey time saving per person is between 2 and 4 minutes

Option 4

A Park and Ride site located near the A1198/A428 junction would feed a segregated bus route through/around Cambourne and Bourn Airfield with stops at each. Northern busway route east of Dry Drayton, sharing the existing Dry Drayton over-bridge of the A14. Passing between Oakington and Girton to connect to the existing Cambridgeshire Guided Busway west of Histon to serve the Cambridge Science Park area. An online nearside eastbound only bus lane improvement along Madingley Road will help to benefit the existing Park and Ride site at Madingley to help serve the western side of the City Centre (2.0km). The distance from Cambourne West to Cambridge Science Park would be 19.0 km. This scheme is forecast to offer an average journey time saving of up to 1 minute per person.

- Distance from Cambourne to Cambridge Science Park via new busway = 19.0km
- Length of Madingley Road bus lane improvement (inbound only) = 2.0km

Appendices

Average journey time saving per person is up to 1 minute

Option 5

A Park and Ride site located at near the A428/A1303 junction (Madingley Mulch roundabout) would feed into an online nearside eastbound bus lane along Madingley Rise to connect to the existing bus priority measures immediately west of the existing Madingley Road Park and Ride site. An online nearside eastbound only bus lane improvement along Madingley Road will help to benefit the existing Park and Ride site at Madingley to help serve the western side of the City Centre. Signalisation of Madingley Mulch roundabout to manage traffic congestion. The overall distance of these 2 bus lanes would be **4.4 km.** This scheme is forecast to offer an average journey time saving of between 3 and 10 minutes per person.

- Length of bus lane improvement (inbound only) = 4.4km
- Average journey time saving per person is between 3 and 10 minutes

Option 6

A Park and Ride site located to the east of St Neots. An eastbound nearside bus lane along the A428 allied to highway and bus priority improvements on the approach to Caxton Gibbet. A nearside eastbound bus lane along Madingley Rise to connect to the existing bus priority measures immediately west of the existing Madingley Road Park and Ride site. An online nearside eastbound only bus lane improvement along Madingley Road will help to benefit the existing Park and Ride site at Madingley to help serve the western side of the City Centre. Signalisation of Madingley Mulch roundabout to manage traffic congestion. The distance of both the bus lanes is **16.6** km. This scheme is forecast to offer an average journey time saving of between 4 and 9 minutes per person.

- Length of bus lane improvement (inbound only) = 16.6km
- Average journey time saving per person is between 4 and 9 minutes

Option 7

A bus service would run on a segregated route through Cambourne and Bourn Airfield before joining the A428 (it is assumed that this junction onto the A428 would be provided as part of the Bourn Airfield development) through to the A428/A1303 junction (Madingley Mulch roundabout) which would be signalised to provide bus priority. An online nearside eastbound bus lane would be provided along both Madingley Rise and Madingley Road, utilising the existing bus priority measures at M11 J13 and would provide bus priority into Cambridge. The distance of the bus route from Cambourne West via Bourn Airfield to the A428 **and** the 2 bus lanes is **8.9 km.** This scheme is forecast to offer an average journey time saving of 6 minutes per person.

- Length of improvements through Cambourne/Bourn Airfield = 4.5km
- Length of bus lane improvements (inbound only) = 4.4km
- Average journey time saving per person is 6 minutes

Option 8

A bus service would run on a segregated route through Cambourne and Bourn Airfield (**4.5 km**) before joining St Neots Road through to the A428/A1303 junction (Madingley Mulch roundabout) which would be signalised to provide bus priority. An online nearside eastbound bus lane would be provided along both Madingley Rise and Madingley Road, utilising the existing bus priority measures at M11 J13 to provide bus priority in to Cambridge (**4.4km**). This scheme is forecast to offer an average journey time saving of 4 minutes per person.

- Length of improvements through Cambourne/Bourn Airfield = 4.5km
- Length of bus lane improvements (inbound only) = 4.4km
- Average journey time saving per person is 4 minutes

Option 9

Park and Ride site located near the A1198/A428 junction would feed a segregated bus route through/around Cambourne and Bourn Airfield with stops at each. An offline busway would run south of Hardwick and north of Coton, continuing over the M11 on approximately the alignment of the Coton Footpath. An on-road connection can be provided through the West Cambridge University site to access the existing Park and Ride Site on Madingley Road. The busway would continue south of the West Cambridge University site to connect to Grange Road. Services could then run on road either north to Madingley Road or south to Sidgwick Avenue to access the City Centre. The distance between Cambourne West and the West Cambridge University site is **15.6 km.** This scheme is forecast to offer an average journey time saving of between 2 and 4 minutes per person.

- Distance from Cambourne to West Cambridge University Site via new busway = 15.6km
- Average journey time saving per person is between 2 and 4 minutes

Option 10

A segregated bus route would run through/around Cambourne and Bourn Airfield with stops at each. Central busway route south of Hardwick then heading north to a Park and Ride site located at near the A428/A1303 junction. An offline busway then continues north crossing Cambridge Road and the M11 to connect in to the existing Park and Ride site on Madingley Road. An online nearside eastbound only bus lane improvement along Madingley Road will help to benefit the existing Park and Ride site at Madingley to help serve the western side of the City Centre. The distance between Cambourne West and Cambridge North West is 12.3 km. This scheme is forecast to offer an average journey time saving of between 4 and 7 minutes per person.

- Distance from Cambourne to Cambridge North West via new busway = 12.3km
- Average journey time saving per person is between 4 and 7 minutes

Option 11

A Park and Ride site located at near the A428/A1303 junction would feed into an offline busway running between Coton and Madingley Rise, across the M11 and south of the West Cambridge University site to connect to Grange Road. A connection can be provided through the West Cambridge University site to access the existing Park and Ride Site on Madingley Road. Services could then run either north via Madingley Road or south via Sidgwick Avenue to access the City Centre. The distance between Coton and the West Cambridge University Site is **4.7km**. This scheme is forecast to offer an average journey time saving of between 3 and 8 minutes per person.

- Distance from Coton to West Cambridge University Site via new busway = 4.7km
- Average journey time saving per person is between 3 and 8 minutes

Option 12

A new single carriageway highway link would connect the A428/A1303 junction with M11 Junction 12, routing to the west of Coton and connecting on the alignment of the existing overbridge from M11 Junction 12 to Coton. There is the option to close M11 Junction 13.

Option 7 plus 11

A bus service would run on a segregated route through Cambourne and Bourn Airfield before joining the A428 (it is assumed that this junction onto the A428 would be provided as part of the Bourn Airfield development) through to the A428/A1303 junction (Madingley Mulch roundabout) which would be signalised to provide bus priority. A Park and Ride site located at near the A428/A1303 junction would feed into an offline busway running between Coton and Madingley Rise, across the M11 and south of the West

Appendices

Cambridge University site to connect to Grange Road. A connection can be provided through the West Cambridge University site to access the existing Park and Ride Site on Madingley Road. Services could then run either north via Madingley Road or south via Sidgwick Avenue to access the City Centre. The distance between Coton and the West Cambridge University Site is **4.7km** with the length of improvement through Cambourne and Bourne Airfield being **4.5km**.

- Length of improvements through Cambourne/Bourn Airfield = 4.5km
- Distance from Coton to West Cambridge University Site via new busway = 4.7km

Appendix C. Engineering and Modelling Input

C.1. Engineering Input

Cost Information

£1.02 million + 15%=> Per km of New Route

£0.832 million + 15%=> Per km of Single Lane Widening

£0.937 million + 15%=> Per km of Bus Priority Facilities

Park and Ride => £3.2 million

Signalised Roundabout =>£4.9 million

Timescale Information

Existing Cambridge Guided Bus= 25km over 3 years= 8.3km/year

(A40 Daff Y Nant) Minor Structure= 8 weeks (2 months)

Major Structure= 6 months

(M96 Thorley) M11 Bridge= 11 months

Minor Junction= 12 weeks (3 months)

(A1 Blackcat Roundabout) Major Junction= 7 months

New Signals= 12 weeks (3 months)

Signalised Roundabout= 16 weeks (4 months)

Information produced using Highways Agency Area 8 Website. (Not taking into account stats.)

Package 1	Methodology
Cost	Developer Land: [(3.7x1.02)+(3.7x0.937)]x1.15 = £8.33million
	Offline Route: [(13.15x1.02)+(13.15x0.937)]x1.15 = £29.6million
	Madingley: [(2.1x0.832)x(2.1x0.937)]x1.15 = £4.3million
	Park and Ride = £3.2million
	M11 Bridge = £22million to £45million
	Estimated Cost = £90.43 million
Land Take	Offline Route: 18.5mx13.15km = 234,275 m2
	Madingley: 2.1kmx8m =16,800 m2
	Park and Ride: 80,000 m2

	Estimated Land Take 341,000m ²
Timescale	Max
	Offline Route: 24months
	Major and minor structures/junctions (concurrent working): 10months
	<u>Min</u>
	Concurrent offline route, structures and junctions: 24months
	Estimated Maximum Timescale: 35 months
	Estimated Concurrent Methods Timescale: 24months

Package 2	Methodology
Cost	Developer Land = £8.33million
	Offline Route: [(8.46x1.02)+(8.46x0.937)]x1.15 = £19.04million
	Madingley = £4.3million
	Park and Ride = £3.2million
	Estimated Cost = £34.87million
Land Take	Offline Route: 18.5mx8.46km =156,510 m2
	Madingley: 16,800 m2
	Park and Ride: 80,000 m2
	Estimated Land Take = 254,000m ²
Timescale	Max
	Offline Route: 18months
	Minor and major junctions/structures (concurrent working): 14months
	<u>Min</u>
	Concurrent offline route, structures and junctions: 14months
	Estimated Maximum Timescale: 32 months
	Estimated Concurrent Methods Timescale: 14months

Package 3	Methodology
Cost	Developer Land = £8.33 million
	Offline Route: [(8.31x1.02)+(8.31x0.938)]x1.15 = £18.7million
	Madingley: 4.3+(0.41x1.769)x1.15 = £5.11million
	Park and Ride: £3.2million
	Estimated Cost = £35.34million
Land Take	Offline route: 8.31kmx18.5m = 153,736m2
	Madingley: 16,888m2
	Park and Ride: 80,000m2
	Estimated Land Take = 237,000m ²
Timescale	<u>Max</u>
	Offline route: 9months
	Minor structures: 4months
	Major junctions: 21 months
	Minor junctions: 3 months
	<u>Min</u>
	Concurrent offline, structures and junctions: 21months
	Estimated Maximum Timescale: 37 months
	Estimated Concurrent Methods Timescale: 21months

Package 4	Methodology
Cost	Developer Land: [(4.85x1.02)+(4.85x0.937)]x1.15 = £10.9million
	New Junction over A428 = £15million to £23million
	Offline Route: [(10.1x1.02)+(10.1x0.937)]x1.15 = £22.73million
	Madingley: £4.3million
	Park and Ride: £ 3.2million
	Estimated Cost = £64.13million

Land Take	Offline Route: 18.5mx10.1km = 186,850m2
	Madingley: 16,8000m2
	Park and Ride: 80,000m2
	Estimated Lane Take = 284,000m ²
Times	Max
scale	Offline built concurrent with:
	Minor structures: 14months
	Minor junctions: 9 months
	Major junctions: 14 months
	<u>Min</u>
	Offline and minor structures built concurrent with:
	Major junction: 14months
	Minor junction: 9months
	Estimated Maximum Timescale: 37 months
	Estimated Concurrent Methods Timescale: 23months

Package 5	Methodology
Cost	Park and Ride: £7million
	Widening: $[(4.8x0.832)+(4.8x0.937)]$ x1.15 = £9.8million
	Signalised Roundabout:: £4.9million
	Estimated Cost = £21.7million
Land Take	Park and Ride: 120,000m2
	Widening: 8mx4.8km = 38,400m2
	Estimated Land Take = 160,000m ²
Timescale	Max
	Major junction: 7 months
	Signalised Roundabout: 3 months
	Online route with upgrade of existing junctions: 9months

<u>Min</u>
Signalisation of roundabout with new major junction: 7months
Online route with upgrade of existing junctions: 9months
Estimated Maximum Timescale: 19 months
Estimated Concurrent Methods Timescale: 16months
Estimated Maximum Timescale: 19 months

Package 6	Methodology
Cost	Single Lane Widening: [(12.03x0.832) + (12.03x0.937)]x1.15 = £24.5million
	Double Lane Widening: [(1.4x2)+(0.937x0.832)]x1.15 = £5.7million
	Park and Ride: £3.2million
	Signalised Roundabout: £4.9million
	Estimated Costs = £38.3million
Land Take	Single Lane Widening: 8mx12.03km = 96,240m2
	Double Lane Widening: 28kmx8m = 22,400m2
	Park and Ride = 80,000m2
	Estimated Land Take = 200,000m ²
Timescale	<u>Max</u>
	New Signalised roundabout : 3 months
	Upgrade Existing Junction: 12 months
	Major Highway Caxton Gibbet: 7 months
	Structures: 12 months
	<u>Min</u>
	Concurrent construction with:
	Upgrade of existing junction:12months
	Structures: 12months
	Estimated Maximum Timescale: 34 months
	Estimated Concurrent Methods Timescale: 24months

Package 7	Methodology
Cost	Signalised Roundabout: £4.9million
	Widening Madingley: £9.8million
	Developer Land: [(4.2x1.02)+(4.2x0.937)]x1.15 = £9.45 million
	New Junction A428: £15million to 23million
	Estimated Cost = £47.15million
Land Take	Madingley Widening: 38,400m2
	Estimated Land Take = 40,000m ²
Timescale	<u>Max</u>
	New signalised roundabout : 3 months
	New bridge: 6months
	Offline and online: 9months
	<u>Min</u>
	New signalised roundabout: 3months
	New bridge: 6months
	Concurrent construction of offline and online: 4months
	Estimated Maximum Timescale: 18 months
	Estimated Concurrent Methods Timescale: 13 months

Package 8	Methodology
Cost	Developer Land: [(4.3x1.02)+(4.3x0.937)]x1.15 = £9.7million
	Widening Madingley: £9.8million
	Signalisation of Roundabout: £4.9million
	Bus Priority along old A428: (4.6x0.937)x1.15 = £5million
	Estimated Cost = £29.4million
Land Take	Madingley Widening: 38.400m2
	Estimated Land Take = 40,000m ²

Timescale	Max
	New signal roundabout: 4 months
	Minor junction: 3 months
	New signals: 3 months
	Upgrade existing junction: 3 months
	Offline and online route: 9months
	Restricted working: 4months
	Min
	New signalised roundabout: 4months
	New signals: 3months
	Upgrade existing junction: 3months
	Concurrent workingof offline, online and minor junctions: 5months
	Estimated Maximum Timescale: 26 months
	Estimated Concurrent Methods Timescale: 15 months

Package 9	Methodology
Cost	Developer Land: £8.33million
	Offline Route:[(10.9x1.02)+(10.9x0.937)]x1.15 = £24.53million
	Park and Ride: £3.2million
	M11 Bridge: £22 million to 45million
	Estimated Cost = £81.06million
Land Take	Offline Route: 18.5x10.9 = 201,650m2
	Park and Ride: 80,000m2
	Estimated Land Take = 282,000m ²
Timescale	Max
	Concurrent construction of offline with:
	Major and minor structures/junctions: 28 months
	New Bridge: 11 months
	<u>Min</u>

Concurrent construction of offline with:
New bridge with major junctions: 11months
Minor junction: 3months
Minor structures: 8months
Estimated Maximum Timescale: 39 months
Estimated Concurrent Methods Timescale: 22 months

Package 10	Methodology
Cost	Developer Land: £8.33million
	Offline Route: [(9.5x1.02)+(9.5x0.937)]x1.15 = £21.4million
	Park and Ride: £7million
	M11 Bridge: £22million to 45million
	Estimated Cost = £81.73million
Land Take	Offline Route: 18.5x9.5 = 175,750 m2
	Park and Ride: 120,000m2
	Estimated Land Take = 296,000m ²
Timescale	<u>Max</u>
	Concurrent construction of offline and online with:
	Major and minor structures/junctions: 28 months
	New Bridge: 11 months
	<u>Min</u>
	Concurrent construction of offline and online with:
	New M11 bridge and major junctions: 11months
	Minor junctions: 6months
	Minor structures: 8months
	Estimated Maximum Timescale: 39 months
	Estimated Concurrent Methods Timescale: 25 months

Package 11	Methodology
Cost	Park and Ride: £7million
	Offline Route: $[(4.92x1.02)+(4.92x0.937)]x1.15 = £11.1$ million
	Optional Route:[(1x1.02)+(1x0.937)]x1.15 = £2.25million
	M11 Bridge: £22million to 45million
	Estimated Cost = £65.35million
Land Take	Park and Ride: 120,000m2
	Offline Route: 4.92x18.5 = 91,020m2
	Optional Route: 18,500m2
	Estimated Lane Take = 230,000m ²
Timescale	<u>Max</u>
	Concurrent construction of offline with:
	Major junctions: 21 months
	New Bridge: 11 months
	<u>Min</u>
	Concurrent construction and phasing of work:
	Major junctions: 11months
	New bridge: 11months
	Estimated Maximum Timescale: 32 months
	Estimated Concurrent Methods Timescale: 22 months

Package 12	Methodology
Cost	Offline Route: 3x1.02x1.15 = £3.6million
	Junction Upgrades: £1million
	Closing Slip Roads: £16.6million
	Estimated Cost = £21.2million

Land Take	16.5mx3km = 49,500m2
	Estimated Land Take = 50,000m ²
Timescale	<u>Max</u>
	Offline Route: 4.5months
	Major and minor junctions: 8month
	Minor structure: 1month
	Closure of slips: 8months
	<u>Min</u>
	Concurrent construction of route with:
	Major and minor junctions: 8month
	Minor structure: 1month
	Closure of slips: 8months
	Estimated Maximum Timescale: 21.5months
	Estimated Concurrent Methods Timescale: 15months

C.2. Modelling Input

Table C-1 Forecast Demand in Scope by 2031 per Option

Option Number	1	2	3	4	5	6	7	8	9	10	11
AM Peak Period Demand in Scope (3 hours)		5,200	6,100	4,800	1,800	3,100	2,600	3,800	6,100	3,400	2,400
PM Peak Period Demand in Scope (3 hours)	3,800	4,700	7,000	4,000	900	2,300	2,100	4,200	7,000	3,400	2,700
AM + PM Demand in Scope (6 hours)	8,200	9,900	13,100	8,800	2,700	5,400	4,700	8,000	13,100	6,800	5,100

Table C-14 Forecast Indicative Mode Share in 2031 per Option

Option Number	1	2	3	4	5	6	7	8	9	10	11
Indicative Mode Share (AM Peak Period – 3 hours)	28%	25%	23%	24%	46%	30%	40%	32%	23%	34%	44%
Indicative Mode Share (PM Peak Period – 3 hours)	13%	12%	16%	11%	25%	17%	31%	22%	16%	26%	31%

Table C-2 2031 Average Forecast Journey Time Savings and Demand Benefits per Option

Metric	Optn 1	Optn 2	Optn 3	Optn 4	Optn 5	Optn 6	Optn 7	Optn 8	Optn 9	Optn 10	Optn 11
2031 Average User Demand Weighted DM Journey Time - AM (mins per person)	33	50	35	32	32	36	33	32	34	31	31
2031 Average User Demand Weighted DS Journey Time - AM (mins per person)	28	45	33	31	22	27	27	28	30	25	23
2031 AM Average Journey Time Benefit Per Person (mins)	5	5	2	1	10	9	6	4	4	7	8
2031 Average User Demand Weighted DM Journey Time - PM (mins per person)	42	38	24	-	24	25	25	21	23	24	26
2031 Average User Demand Weighted DS Journey Time - PM (mins per person)	37	36	20	-	22	21	19	17	21	21	22

A428 Western Corridor Study

Appendices

Metric	Optn 1	Optn 2	Optn 3	Optn 4	Optn 5	Optn 6	Optn 7	Optn 8	Optn 9	Optn 10	Optn 11
2031 PM Average Journey Time Benefit Per Person (mins)	4	2	4	-	3	4	6	4	2	4	4
2031 Indicative PT Demand Receiving Benefit AM 3 hours (person demand)	360	120	680	780	780	680	750	780	670	810	910
2031 Indicative PT Demand Receiving Benefit PM 3 hours (person demand)	30	40	<10	-	210	150	320	40	190	510	740
Person Hour Saving - AM	30	11	27	11	130	103	78	57	41	92	124
Person Hour Saving - PM	2	1	<1	-	9	9	34	3	7	30	43
Person Hour Saving - AM plus PM	32	12	27	11	139	111	112	59	47	122	167

Appendix D. Options Appraisal



Agenda

- 1. Introductions
- 2. Review of progress to date
- 3. Appraisal methodology demand analysis, modelling, AST
- 4. Recommendations
- 5. Next steps
- 6. AOB

Progress review



- SWOT analysis
- · Identified problems and challenges
- Confirmed planning objectives
- · Identified options
- Initial sift (meeting 2)
- Agreed options for assessment
- Defined 11 packages & link road in more detail
- Assessed packages

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Demand Forecasts: What does the model do?



- Cambridge Sub Region Model (CSRM) is a Land use/Transport Interaction model
- The land use model helps predicts the take up of residential dwellings and commercial floorspace
- The transport demand model examines mode, travel time and the destination choice
- The assignment model (highway separate from PT) routes trips through the network on minimum cost routes
- Taking complex relationships, places them in a framework that iterates to high level of convergence

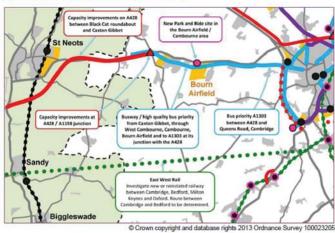
Demand Forecasts: What does the model tell us?

- Model covers a wider area than just A428
- Forecasts are based on 2031 with appropriate S.Cambs and Cambridge City Local Plan Allocations
- A14 Upgrade from 2021 (tolled HSB)
- · Notable large developments:
 - Cambridge NW & Darwin Green
 - Bourn Airfield and Cambourne West
 - St Neots

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DM and DS Local Plan Long Term Transport Strategy assumptions

Figure 5.15. Major interventions in the corridor

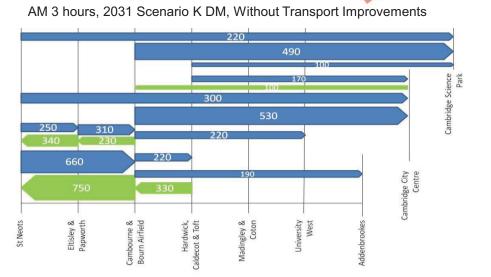


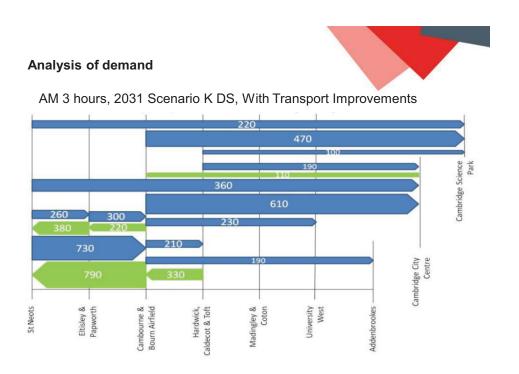


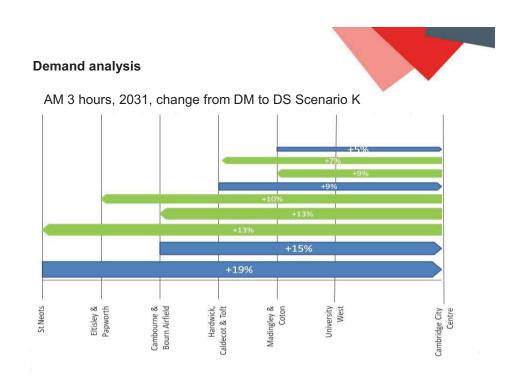
- M11 on west side of Cambridge will be chronically congested (caused by background growth, local development pressures, A14 upgrade)
- Bourn Airfield and Cambourne have significant jobs (4,500) which leads to substantial local internalisation.
- Bourn Airfield housing growth struggles to materialise with only 85% household/dwelling ratio (the lowest target value set in the model).
- Households that do form are biased towards "employed adult" / high car ownership with very little unemployment or retired HH.

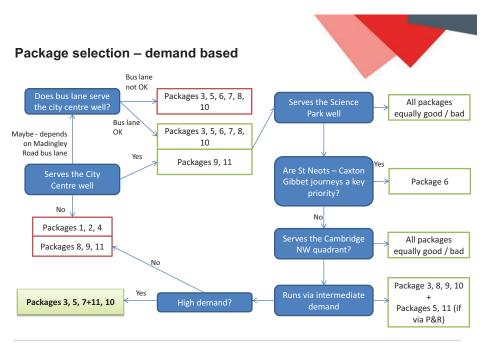
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Analysis of demand







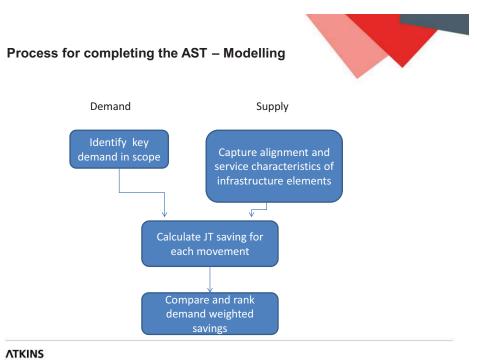


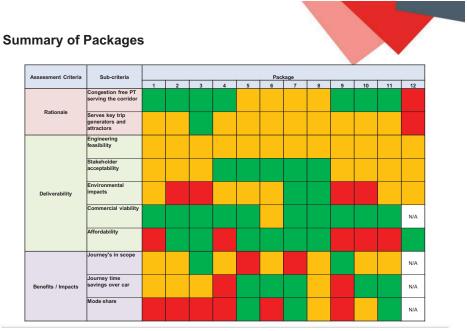
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Process for completing the AST



- Rationale:
 - · Does it provide congestion free PT in the corridor?
 - · Does it service key trip generators and attractors?
- · Deliverability:
 - · Engineering feasibility
 - · Stakeholder acceptability
 - · Environmental impact
 - Affordability





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Recommendations



- Based on the methodology used we recommend the following packages are taken forward for detailed assessment under Phase 2:
 - Package 3 Busway, links to A1303 north east of Coton, inbound bus priority
 - Package 5 P&R at Madingley Mulch, inbound bus priority
 - Package 7+11 on road (A428) bus, Madingley Mulch P&R, off line busway to Grange Road
 - Package 10 Busway, linking to A1303 at M11, inbound bus priority

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Recommended Packages – Summary

Package 3:

Pros

- Segregated bus route Cambourne and Bourn Airfield will lead to JT savings
- P&R at Caxton Gibbet removes some of the Cambridge bound traffic from the A428.
- No new M11 bridge required

Cons

- Close to a SSSI site
- Inbound bus lanes will only benefit AM peak bus journeys and will not address PM peak congestion.
- Only partially addresses the public transport needs of areas west of Caxton Gibbet (i.e. St Neots).
- High green field construction

Package 5:

Pros

- P&R capacity increased
- Makes best use of existing infrastructure at a relatively low cost
- Efficient at intercepting majority demand
- Efficient at intercepting majority demand
 Efficient at providing PT priority on links of most acute congestion

Cons

- Does not provide direct PT links to/from Cambourne, Bourn Airfield or St Neots.
- Inbound bus lanes will only benefit AM peak bus journeys and will not address PM peak congestion.
- Relies on P&R to provide accessibility to PT service





Recommended Packages - Summary

Packages 7+11:

- Efficient at intercepting demand from Cambourne and Bourn Airfield P&R capacity enhancements

- New M11 overbridge required
- New A428 overbridge required at Bourn Airfield if new junction not provided by developer
 No service facility to Addenbrookes or the Science Park
 High level of green field construction needed

Package 10:

- Pros
 No M11 bridge required
 P&R capacity enhancements
 P&R location tailored to meet maximum PT delays
 Efficient at intercepting demand from Cambourne and Bourn Airfield

- Significant green field construction
 Does not provide direct PT links to/from Cambourne, Bourn Airfield or St Neots

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Benefits / Impacts

Metric	1	2	3	4	5	6	7	8	9	10	11
2031 Demand in Scope AM 3 hours (person demand)	4,400	5,200	6,100	4,800	1,800	3,100	2,600	3,800	6,100	3,400	2,400
2031 Demand in Scope PM 3 hours (person demand)	3,800	4,700	7,000	4,000	900	2,300	2,100	4,200	7,000	3,400	2,700
2031 Average User Demand Weighted DM Journey Time - AM (mins per person)	33.0	49.8	34.8	32.4	32.4	36.0	33.3	32.4	34.1	31.4	31.3
2031 Average Demand Weighted DS Journey Time - AM (mins per person)	28.0	44.5	32.5	31.5	22.4	27.0	27.0	28.0	30.4	24.6	23.1
2031 AM Journey Time Benefit Per Person (mins)	- 5.0	- 5.3	- 2.4	- 0.9	- 10.0	- 9.1	- 6.3	- 4.3	- 3.6	- 6.8	8.2
2031 Average Demand Weighted DM Journey Time - PM (mins per person)	41.7	37.7	23.9		24.2	24.9	24.9	20.6	23.3	24.3	25.5
2031 Average Demand Weighted DS Journey Time - PM (mins per person)	37.4	35.9	19.9		21.5	21.4	18.5	16.9	21.2	20.8	22.0
2031 PM Journey Time Benefit Per Person (mins)	- 4.2	- 1.8	- 4.0		- 2.7	- 3.5	- 6.3	- 3.7	- 2.1	- 3.5 -	3.5
2031 Indicative PT Mode Share AM (assuming no mode shift due to measures)	28%	25%	23%	24%	46%	30%	40%	32%	23%	34%	44%
2031 Indicative PT Mode Share PM (assuming no mode shift due to measures)	13%	12%	16%	11%	25%	17%	31%	22%	16%	26%	31%
2031 Indicative PT Demand Receiving Benefit AM 3 hours (person demand)	360	120	680	780	780	680	750	780	670	810	910
2031 Indicative PT Demand Receiving Benefit PM 3 hours (person demand)	30	40	-	-	210	150	320	40	190	510	740
Percentage of Demand in Scope Receiving Benefit - AM	8%	2%	11%	16%	43%	22%	29%	21%	11%	24%	38%
Percentage of Demand in Scope Receiving Benefit - PM	1%	1%	0%	0%	23%	7%	15%	1%	3%	15%	27%
Person Hour Saving - AM	- 30.1	- 10.6	- 26.9	- 11.2	- 129.6	- 102.6	- 78.4	- 56.5	- 40.6	- 91.5 -	124.3
Person Hour Saving - PM	- 2.1	- 1.2	-	-	- 9.4	- 8.8	- 33.7	- 2.5	- 6.5	- 30.0 -	42.7
Person Hour Saving - AM plus PM	- 32.3	- 11.8	- 26.9	- 11.2	- 138.9	- 111.4	- 112.1	- 59.0	- 47.2	- 121.5 -	167.0

Appendix E. Appraisal Summary Table

AGE Online Associal Europey											
Description of Option	Beckers I. A Park and Fole sile hashedness the 32 195/A25 persion would lead a supregisted less waste through home of Cambrianess and Beach Adults with views places. To other homes persion on the old Beach of the sile of	Beckers 3. A Park and Side site housed near the ATSEAGS purcles would heat a supergisted size now interplaneous Cambridges and Bloom Affects and Development Cambridges and Bloom Affects and Development Cambridges and Affects and Affe	Emiliare 3 J. Park and Falor site hassled near the SYSSEACE position would be if a supprepared to a south Promphismous Commission and Steam Market with stops at each. Control becames outle for such of Stateholds and not	Shork and Eight wite Smalled man that IS 1960ACR provides would head a supergraded loss tools Recognition and Cambridge and Bloom Andreas with stores at least A Surface in Superconstitute and ISPs Operation, Marketin like stores at least A Surface in Superconstitute and ISPs Operation.	Enthrop 2 3 Park and Bale site hashed almost the ACRA/SCI product Makingley Mich novelakesal greated less into an unifer complete applicated last, large along Malinator Size to convent	Backban & A Park and Fifthin the headerd in the seas of El Noole, As anothered mention has been along the ACE allocal to highway and loss princip, and the proposed principal and the proposal of Control Clark and control and seasoning techniques are the regional to Control Clark and control and loss laws along blooking to Whom to accommod to the existing loss princip, measures in resolution with all the making lightness four first and measures in resolution with all the making lightness four first and and the control of the control o	Restaur 7 Alon service small our on a segregated roote flessigh Cambourse and Boses Article lasters plotting the AGE (in secured that this purchase units the ACE Would be received as service the ACE to their in the Staurs (Inthic).	Backers X Disc service would come a supergrief male frough Cambrian and Book Melait before points in News Seas through to the AURILIANS position (Baltimeter Maintenandaria) which would be submitted to reside this points.	Revision 3: A Park and fisters in booked near for AI 188A/DB paraller small fixed a supposed from make throughtenanced Combinations and Boom Artificial with stems of match, An office Instance would not south of Mandada and	Readons 18 Long registed than tracter would not through broasted Combination and Blasse depending with slapes at each. Combine has may make trache of Nationals them beauting more than the National Action tracted at one of a 42 (881) 300 junction. In willing because yhere conditioned not one of a 42 (881) 300 junction. In william beauting them conditiones contributing Combining Read of the MS to account in the date and price and Miller below to Makingly!	Revision 19 A Park and Ride site located at near the ACRA/SCI juristics would be direct as a stillness boungs owning between Colon and Madeingley Rise, areas the RIT Landscale with a Ribert Confederate in Conscious and Conscio
	Cambridge Fiel Line to Trumpington Fiels and Ride sile. This would be a someoffer the exhibiting Cambridgeshire Carded Bussey to ultimately sense the real visiting and City Centre areas. As online reported and the continue rep	connect in MT J CL On road service along the MT I to JT I to Into its Sumplington Red and Elde size. This result then connect to the existing Cambridgeshire Existed Business in Minutely same the sall station and City Centra areas. In colors manufact applicated only law.	printing remanance (which seculation entered of reminanch) in medically work of the exhibit planting Water Plant and Rate with the ordine remaining and interest confidence into improvement along bloking by Read will help to be benefit the exhibit plant and Risks when all bloking is to that secure for exhibit and the first Color of the which all bloking is to that secure for exhibit and the first Color of the secure of the security or better than the security of the Color of the planting the security of the security for exhibit and the security of security o	mining Dy Corpian som bridge of the J.J.E. Faculing between Cabington and Grison is somewhat to the existing Cambridge-Nive Cabinel Businessy security Histories is some the Cambridge Editions Fact area. As notice reproduct anything of orbital participations of orbital large immovement about Madematics Road	to the existing but printly measures immediately went of the existing Mantegley Knool Ports and Rich site. As unifor measuring standard Mantegley Knool was improvement along Mantegley Knool will have to be expedit the existing Ports and Rich site at Mantegley Nool.	has lare along Medingley Flow in connect to the existing has extently measures immediately word of the existing Missingley Statistical Park and Ride site. As written nearestide nearboard original lare improvement alone Misdoode's Flouri will have be breadt the explaint. Park and Eide	development) through in the ACERT SCI junction (Makingley Uthin) numbels out which would be signalized in provide two proving. As arrive near-tide explanated but, here would be provided along their Makingley Since and Makingley Road, within the existing but an electromagners at	de coline manufale mediousel hus lane socialite provided along both Miningley fine and Miningley Road, utilizing the exteing bus printipmeasures at M11 J13 social provide bus printip in to Cambridge.	pools of Colon, continuing over the MT1 on approximately the alignment of the Colon Poolpads. As on mad connection can be provided through the Continings University with its access the existing Park and Finite Elle on Madingley Road. The Sourcey would continue would in the Their Elle on Madingley Road. The Sourcey would continue would in the Their	persion. As office increasy than continues north convining Combridge Road and the MT I to community to the existing Park and Riste wire on Makingley Road, As online newside sendound only but, large improvement along Materials Road will had to be existed the existing Park and Riste view of	to someoi in Donge Kood. A someoise can be provided brough the West Cambridge University size in assess the seating Plate and Finis Die on Madingley Road. Sentence sould have not either noth-via Madinalin Road or worth in Edinalin Agence to assess the City
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Kay Brangita	Segregated bus note through Cambourne and Sourc Arterid will lead to journey time sanings.	- Engagulari Itus voda Brough Candosava and Brown Ridari and forway mode of Narolasis will need to journey from savings. - PSES at Cash Gibber Immores some of the Cambridge Bound buffle from law AUDs.	Segregated but route through Cambourne and Tourn Artistic and Susseay south of Humanist will lead to journey one statings.	- Engageded bus made through Combourne and Source Arteld and new lockway nash of the AIDS will reduce delays resulted by congestion.	FET capacity is survive increased No. MT Straige	*Makes best our of existing infrashrature sent of Coston Clithes *No MT1 bridge *Provides sondownes: PT communicity for IS bends *Addresses all brown PT builderenins	No.5011 bridge required Molecular smoother green field made correlated on Minimizer smoother green field made correlated on Minimizer information glemand from Carolinsons and Bourn Arbeid	-No. NET ar ACE bridge required -No. NET ar ACE bridge required -Minimizes need by paren first nuire construction -Efficient of information planned from Community and Source Arteria	FEX squarity or consider increased Elicinesis on any open in consequence Alland Physiole congestion	PEX capacity enhancements PEX to pacify enhancements PEX to calculate the meet maximum PT delays PEX to calculate the meet maximum PT delays PEX to calculate the meeting demand from Cambridone and Bourn Antarid Pouris maximum placement in PEX.	PER sapady erbansenenis PER location informed in meet maderum PT delays Tangapited bit directional locasisysthms Atland Physials congestion anotherse.
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	-Tuesding lebecopes on sail line										
Compension has PT serving the comister (including new deadleps note); In order to avoid an increase in convenience provides in levels and PT (purely times.	Enubern Income will be to devotional and seprepaire from general india forugh Cembrums and Enum, and between Enum.	Bussey will be to directional and seprepaired from personal traffic freezigh Cambourne and Enumin Earlier and the ACCS, and from	Burvary will be suppopied to an personited to through Combination and Bours, and along burvary largement (territor has been supposition with reliable (survey).	Library to achieve some of the objective and have a maderale overall impact.	Signal season of Madingley Shilah will improve musements through the jurnism	Likelyla meet the objective and have a benefit led impact.	Litely in most the objective and have a beneficial impact.	2 Likelyte meet the objective and have a beneficial impact.	Exprepried to destinal PT service to Groupe Road to produce also Dange Road.	Segregated, to almosteral PT sentents Change Road, No provision after Change Road.	Engregated, bi-directional PT note from Medingley Moth in Grange Road, No productor after Energy Road.
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	PER at Caster Glibies will capture a proportion of Combridge boundinglis from 30 blests, however, no live princily measures are proposed from Caster Glibes in Medingley Rose and PT powery lesses maybe impacted on.	However, there is an on-road service that includes creating over the SET is an thruldES, followed by a journey southern the SET JES - ST which could be subject to congression and unreliable journey times.	Makingley Kisa and PT Journey Smar, may be impacted on. Earthround neurolate box land from Makingley PAR site to Northampson Zirwill Jengeroe PT encueroencializing this sention.	PEX at Caster Gibbet will capture a proportion of Cambridge Insured staffs from 20 Mexic, Insures, no loss priority measures are proposed from Caster Gibbs in Madingley New and PT journey season singles impainted for.	No additional PT produces would likelinging Malch. Likely in arbitrar some of the objector and have a made also overall impact.	M I paralism G seath-ridge limits PT privally	The ability is Inh Cambourne west and Bourn Artistic density wise the ACE strengthens reliability	PEX still reliant on making Madingley Essal site. No loss produkts west of Cambroome seral.			transi inpat.
	Environméntuminé has lore from Madingley PAX sie le Northempion Si will improve PT momment along this sention. Librityle activem some of the objective and have a maderale	FUX at Caston Global will capture a proportion of Cambridge bound halfo from Si-Vands, however, no loss printly measures are proposed from Caston Silbert in Madingley Kine and PT tourner lines marrier impacted on.	Makingley line office loss into avoid also suprepaie buses from personal traffic. Minaing loss priority for short link more MTI intege.	bres may be impassed on. Earthound nearside loss land from Madingley PAR sile to Northerspine 21 will improve PT measurems along this sention.	enalesis consiliepas.		PAR still relation existing likelingley Founds in. No has produlen seed of Combourne seed.				
	menal repair.	Easthourd namide has lare from Modegley PBT site to Northernplan Direll improve PT recomment along this section.	No loss printly unbinsed until make joins new bussesp	Likely to manifes objective and have a maderately impact.							
		Lifely is achieve some of the objective and have a medicale sexual impact.									
PT serves key convenificator bije generation in the ACM contribe (west of the WHI), including Combourse and Boom.	Package saries Candourne and Bour. Soled though the production of a suprepried locatory.	Peology serves Combinions and Source Artifield Beough the Introduction of a supregisted investory	Findings saves: Cambourse and Sours-Artifold through the introduction of a saggregated loss easy.	Peologie serves Combourse and Bourn Schild Brough the absolution of a segregated business	PAR adjacent to the AGBAI SIX will capture a proportion of tipe originating to the west of Cambridge.	Shelple meet for objective and hour a beneficial impact.	Chely is ment the objective and have a beneficial impact. Bendon saldens, Dahriu umilities from Nachbish.	2 Shelyte med for objective and hour a beneficial impact.	Paulage sares Continues and Bour-Arfald though the introduction of a segregated horaxy.	Peologie serves Cambourne and Bourn Schold Brough the industrials of a segregated increasy.	PER adjacent to the ALSENTACO will septure a proportion of trips originating to the west of Cambridge.
and lines.	PER at Coden Obligat will capture a proportion of Combridge Incontinuate from It Newto, however, there is no increased PT proteined directly from It Newto.	PEX of Caston Citizen will septem a proportion of Cambridge Instead halfo from 26 Nation, Incomes, Hermin, no incomessed PT produces density from 26 Nation.	PEX at Carbon Oblivel will capture a properties of Cambridge bound indice from 3s North, however, there is no increased PT prodution directly from 3s North.	PER at Coales Gibbert will supture a proportion of Combridge Insured halfo from Ib Neols, however, there is no increased PT produles directly from Ib Neols.	or tops originating to the latest a Commange. Unable to same Combinating and England Artifold for now now available trips. Fight dependence on PAR sameler without dead PT only option from Combinating west and Boson. Solded.	See other-services of symmetrices: Poor access high placement by the Cambrowne, Cambrowne services discuss highest PEX site access compromised for hells judging bows 30 UE.	Earnine patterns Statylar until tips from Hambrids. PER still retiant on existing Statingley Front's ite.	Finale along slif AGE would septime trips from Hardwish. PEX slif relaxed on entring Maningley Final size.	PSR of Coulon Oblivel will supher a proportion of Combridge Issued builts from It Nests, Incomer, deresis, no increased PT problem directly from It Nests.	PEX at Makingley Multih will capture a proportion of Cambridge bound stalls from IS Needs, Insureus, there is no increased PT productor density from IS Needs.	Unable to same Combourne and Bourn Arteid for non-our available hips. High dependence on PER sentor without-direct PT and/opplien from Combourne servi and Bourn Selladd.
	Big nated that PT senties to the sity senter would continue to use Medingley files.	Additional connection to Hardwish may be pussible with this pushings.	Additional convention to Hardwish and Critiss maybe you slide with this you large. Litely to advisor some of the objective and have a basellated correct impact.	Library to achieve some of the objective and have a moderate overall impact.	Edwinds Likely to author a some of the objective and have a made site owner.				Additional commention to Handwish and Colon maybe possible with this panlage.	Additional commercion to Hambarish and Colon maybe possible with this peologie.	Likely to authors some of the objective and home a maderale overall impact.
	Litely's actions some of the objective and have a maderals named impact.	En mind that PT services in the objective would continue to use Maningley inn. Libraria polices some of the objective and have a manine in							Litely to achieve some of the objective and how a moderate overall impact.	Likely is achieve some of the objective and have a medievile owned impact.	
F	Contact contacts with the business of Transmission which given	menal impani	English of Albitrary Control of Control Control	No large or Al IIII agrees Cambridge Cit-Cardes The connection	Coloures de chambe la resucción la	Silvana de diverte la concession in Milestrolan	Column to discuss to me consider to Administration and	Oir unem tre circumste. No con consentents Militationaless profite	Bus lane on Al SID series Cambridge Cit-Carries house at fines	Bus lane on 10000 serves Combridge Cir Combe hopping there are	Colombia de alcuerte Sones accestan la Addressa de
Cambridge - Cambridge City Canine and other employment sizes (i.e. Existent Park, Addendaraske's).	access to Addenismation Blue lane on ATSES serves Combinities City Control.	assensing Addendessales Heavens, it was in the potential to someonic to the ADDAMT which would allow for services, on the services you've to common to existing CDB sentence. There is about the potential to connect in the ADDA and from these connect to CDE-Comit loss, resident.	connection to Addressmaler or the Science Park. Likely to achieve some of the objective and have a made also consult impact.	between the horsesy and the CCR will provide assess to the Science Park, CDpContra and Addinstructure. However the journey time for people travelling from Cambourne to Addinstructure is Study to be long.	Addeniusales and the Esterne Park. Likely is arbitrar some of the objective and have a made size count in year.	and the Extense Pail. Likelyin achieve some of the objective and have a medicative sound impact.	the Enteron Park. Likely is achieve some of the objective and have a manifestive consti	Disease Park. Likelyis arbine some of the objective and have a maderate corroll impact.	are no new connection to Addendrouble or the Extense Fast. Libely to arbitrar some of the objection and house a madenate consult.	no new committee in Malantanaka or the Estense Park. Likely in achieve some of the objective and have a medievale correct broads.	and the Science Park. Likely is achieve some of the objective and home a medicale areast.
e 3	,	is City Centre bus novies. But lare on AC303 serves Cambridge City Centre.		Libely to meetibe objective and have a benefitial impact.			1 · ·				
		Likely is achieve some of the objective and have a maderate sexual impact.									
a 4 Intercept all jet trips in scrape behading sommer	Peologie shors and septime blys in Manhabit and Caldensia (out may be alkeste for Tell, Krigolan, and Camberlan residents.	Package has the potential to capture trips from Hardwish.	Peologic has polerial to capture trips from Heritable and Color.	Overs not copylate Mys. from Handwisk / Colors	Even not density replace by a from their origin along the service as roles on use of the PER.	Captures St Neste Hys, but no street Inde to Caretourne, Bours, Handalob or California.	Captures trips from Cambusons and Bluss. Does not capture trips from Hardwish Published to No.	Coptures Mys. hom Continuent and Bount, Harwish / California. Communications blom St Nimite	Fundage has potential to capture tops from Hambatch and Color.	Peologic has polentially suplace trips from Handalah and Calon.	Rades or residents making use of the PER only No street side up in the healthy reservation
Feels journey lines no more than the equivalent 8 journey by our jumi prohosoly less)			1	•	4	Consider of FEE world and makes blooms in the MI 198		1	*	•	•
End to and journey time reliability better than the car alternative (as yet undefined)	Migh level of 25 reliability offered compared to use. Shely to arbitrar some of the objective and have a waderale.	Increase of reliability to some associated with the SET and delays at produces 11 and 12.	Phylored of JT relability offered compared to care Ballack of priority across MT1 enalls abstractly impact on reliability	High head of JT reliability offered compared to car. Likely to achieve some of the objective and have a maderale council.	T reliability repeated in the lower than surpregular make epitors, and result he impacted on by lack of priority over \$11 t bridge.	Discord Improvements only Lenk of loss priority-over RET I bridge model woman JT reliability	Manual Improvements only. Leak of loss printly over MT I Intige could women. 27 reliability.	Three JT form running on the old AUS compared to new with greater potential for JT reliability impacts.	High level of JT reliability affered compared in servand service is on segregated in directional less say in Compa Road.	High-braid of 2" reliability of eval-compared is car and service in on segregated in directional incomey to Drange Road.	IT which young sugregated in directional businessy's separated to be high.
	mend impact	Edinity is actioner some of the objective and have a maderate mental impact.	Likely to achieve some of the objective and have a made size overall impact.	Impail.	In bound improvements units. Literary to substruct some of the objection and home a	Elletyle actions come of the objective and have a medically second impact.	Likely is achieve some of the objective and have a markinate ownell impact.	Last allow printpress Mill sould women 25 edukting. Likelyin advise some of the objective and have a moderate overall impact.	Litely to achieve some of the objective and have a loweristal owned impact.	Likely is achine some of the objective and have above food owned impact.	Litely is ashine some of the objective and have a terrelated sound impact.
					makeak conditional						
Engineering Instability	Location of the investing belonger along the sid natural free presents this land being deadoped for the box mate. Buy change in alignment may result in additional viscoluted elements being required due to water courses.	Office loss way north of Handarish would may impact subdife site and houses in Highlights, Caldessie. Patential to such amound house as well as building the area with a loss sentice.	There is a requirement for 2 minor shouloud works so that water courses can be extended. There is a requirement for 3 major and 2 minor junction improvements along the proposed reads.	Polential archeolis associated with existing over head cables near Dy Doglan. There is a requirement for 7 minor shoulded works as that eather sources and be created.	Pelevilal assisted exhalian measures (shulphinning) to 8100 B Nesis used. 2 New major juniforms at Miningley Mulch to excuse module park and ride.	Promisid accident reduction measures: juinsightening/lis. 8/200 St. Next signals asion of Makingley Mulch municipus.	Princial audieni relucion mascures (sindyhiming) is 8/333 El Venis masi. Vene signalisation of likelingley Mikhi mundeksasi.	rans signalised II. Nesh, Highlaid Final roundahoul is provide loss priority born Bourn Ardeld development. Minor junction improvements at II Nesh, Soviend Knad.	There is a requirement for it minor should endes so that under context names context. There is a requirement for implor and I minor junction improvements along the proposationals.	There is a requirement to if or virus variables with a softed under sources, see his concept. There is a requirement to Employ and 2 minor juristics improvements along the proposed node.	There is a requirement for E-major juridies impresements along the proposed reals. New intige required overthe MT south of juridies TL.
	There is a requirement for Eminor situated works an that water sources can be crossed.	There is a requirement for 2 minor shoulded earlie up that water sources, can be created. There is a requirement for 2 major and 2 minor junction improvements along the proposed made.	proposad reals. North and on south was I path and rities preferred due to producily to aduling a printed and Cambridge Wins.	There is a requirement for 3 minur and 2 major junction improvements along the proposed male.	Epigeade of missing jurishms, along AVXII to economissish has printly.	Upgrade of existing junctions along ALSES to accommodate has priority	Opposite of existing (anothers along ATMS in assummodate has printily	Potential aucident reduction measures (sinsightening) to A1303 St Nexts. read.	New bridge required over the MT south of jurniture 11.		Highway improvements through West Cambridge University site (unlesses descripment layout).
	There is a requirement for Emirar junction improvements along the proposed male. Anne linking was 1011 is required to provide link in Trampington park and filled along the numeric proposed deligement. Principles and its existing farmers assesses user the \$611 abids would reduce next	improvements along the proposed mode. North-mod or woult west park and rides preferred due to proximity to misking-cycle mode and Cambourne Vibral.	Potential assistent reduction measures: (sheightening) to ATSES Street read prior to less way link in.	North next or wouth west park and rides preferred due to positivity to exhibit graphs made and Cambourne West.	Pulantial limits and resistations to samiagenery elidering along the #1303.	resented limits and restrictions is santagenezywidening along the ACOO. Major highway in processors is required on approach to Coden.	r comind limits and resistations in seriagenery widering along the ACSD.	nere signals alon of Malingley Wilds roundations. Lipposte of existing juristions along 30 303 in assummodate loss priority.	Highway improvements through West Cambridge University site (unbrown dentifymed lagrau). North awd on south west park and sites probroad due to prodmity to entitles out and it cambridge.	New bridge over MC morth of parallers 1 C. Prizerial another makes was plointightening (in Al 203 S) Bank was Upgede of exhibit junctions along Al 203 to assummedate how	
1		Potential limits and restrictions to contagency widening along the A1303.	Pulmital limits and matrickons to carriage any widening along the Al 305.	Pulerial limits and existritions in samagerary widening along the ATSES.		Cities. Princial impact of our head power soldes, on proposed Siffenis, park and fele size, as well as the lost lare.		Princial limits and resitutions to contagency eldering along the AISES.	existing cycle route and Cambourne West.	priority Polential limits, and restrictions to contagenary widening along the AT-203.	
	North earlier south west park and rides preferred due to proximity to existing cycle route and Cambourne West. Pulsedad limits and restrictions to confesses considering along the					Initial identification suggests impaction 6 structures along single santageness sestion of the ACH.					
	Albas.										
Entransant Impants	Degregated has link how Combourne in Bourn Arbeid Constraint: Propagated Edministrativas Plans: Prolog SEA: New Vollage and Boson Selectal Prolog NASA: and Stores Repair Policy TO's land in Bridge Kelde Telescope Linked Sealing in wincing lane and Arpendonal and Coden 2 3a, 8, "on significant advances effects upon EEA objections.	Depreyable from the hors Combination in Brazon Related Combination Frequence Endowshized count Res Pulsay SEES have Williago at Brazon Ardebit, Policy (NPU) on Lond Committee Policy SEE, Lond Braight, Related Technology, United Section Endoy See, and Related Combination Combination (and princip lanes of Informational Lond Combination), See 100 100 100 100 100 100 100 100 100 10	Degregate Flox Inh Inn Conhume in Brun Atlald - Consistints - Prepared Eubreatonic Land Pinn - Police Edit, New Wage at Bours Artest Police 90/12 on Land Cons Sports Policy 171 - Loris Bridge Reals Telenopee (Loris buildings in within Jones of Injinduced and Osele 2, 3s, 3s, - on significant adverse efficies, upon Edit-Injindes.	2 Regregated has bits how Combinems in Bisson Aufacil. Commission of the Commission	Only south of ATS They risk of impaction sensible population receptors. Loss of agricultural land. Otherwise - no significant advenue effects upon EEA algorithms	Fight quality ordine has priority measures; between Highfields and the junction of the ACREATEGS and for IET 1. Constants: Along serving seal junction) has all Agriculturalized guide 2, 2 is 53b; loss of Protected species and Auditors along make has significant advanced reflects upon IEE Adaption.	Expression Leads to the Combination in Enterth Edition Combination. Proposed Mademichanic Comfiner Policy Policy (2015), New Village of Baser Article Policy (2015) and Lead General Equator (Policy TEV). Leads Basilian Faulty Television policy (2016), page 1976,	Egypegaled has link from Cambraume in Braum Refald: "Cansinging Proposed Eulemination Load Plan - Pulsing EEE, New Village at Braum Arbeids Pulsing 10-12 on Load Green Epasier Pulsing YEV, Loads Beilige Hadio Brinscope Linked Incidings in whiting loan of Agricultural land Grade 2, In.	Bosons problem mode Engraphed has lich har Candinome is Boson Stellerich Commission. Program Edinomission London. Plan- Poliny 2006: New Yillings and Stellers Arthrift Poliny 2006; Son Loud Chron Essen Poliny 2017: Louds Edinomis Arthrift Poliny 2007; Son Loud Stellers (Louds and Louds). In the Candinomission and Stellers (Louds Intelligence and Candinomission and Candinomission and Candinomission and Intelligence and Candinomission and Candinomission and Languaged in Commission and Candinomission and Candinomission and Commission in Language and Candinomission and Candinomission and Commission and Candinomission and Candino	In leaves (provided to south Empropried that in the Non-Continuous on Branch Added - Combination Programs Edition States (1981) and could file the State (1981) and could find the State (1981	Bladwighey Maksh PER 2 spitters har invasions. Only wouth of A2 2003 but risk of impact on semicine population recognises. Lone of approximated lands: Observation sport 2ER objections - on significant eathers as effects upon 2ER objections flowers placed eather lands.
	words less of Agricultural land Chade 2, 3a, 3b, -na significant adverse effects upon EEA significant	enriey has al Aptoulusel lend Daale 2, In. In. - no significant adverse effects upon IEE objectives.	stooming in vision on a regional and area and a, in, in, in, in a large plane and adverse their, upon EEA high leads and in the English and adverse their, in the English and	Agricultural land Cleade 2, 3e, 3h. "no significant adverse effects upon EEA objections.	High quality orders has printly measures between Highlishis and the junction of the ACE/RICESS and the MYL Constraints. Among existing and political, has a digenolated land grade 2. In A. Sin, has all Personnel species an articlashists along made - no significant advance effects upon IEEA significant	• no significant adverse effects upon IEE to be provided. Madingley Road has lare - Constraints - Medingley Road presses.	Approximational Grade 2, Se. 3b. * no significant advenue effects upon SEX objectives		buildings in visitity loss of Agricultural land Grade 2, Se, Se, - no significant adverse effects upon EEA-signifies Expregulati lossary wouth of Hambrick in Change Road :	leas of Agricultural land-Daule 2, Sa. Sh. *no significant allowed Resid 2, sa. Sh. *no significant allowed reflects upon SEA objections Regregated locatory would of Handarick to Madespaty Polificial American	*On trightness's assisted frames again, sock segments of interesting section and interesting section makes (Section greater from sear you such at it formation has been seen to compare the section of th
	Engrepher luncusy or discused sail line hore Transpingion in CGB senters: Combinets: spansing populated, antiding main settlements. Delower impact of further feetings. - no significant adverse effects upon EEA objectives.	Engagaled Isosawy south of High fields in MIT (O - Complaints is sparsely yequilated, availing main selfaments. Unknown in past of fourted feetings. **no significant advance effects upon EEA objectives.	populatini, amiding main satilimentin. Libbourni impaci di kutind heritage. • no significant alaborar definits spor Elizholpholise. El I pandiel sanion - Dedicated hus besity in our pandielise the MII between	Regregated has believe rooth of Brown Advicts in Chy Chapton belong to Cambridge United Browny of Holivo: Commission - species by proposal adapton entitle than the Value - Deliverse impact of transitive stages. Loss of applicational fased, with collection impact of transitive stages. Loss of applicational fased, entiting unless ability to climate in home proof that of this "same superficient advices effects upon IEEA objectives.	Agricultural land grade 2, Se & Sin lans of Protected Agenties and habitate along mode - no significant advence effects upon SSA algestives	Van segelstenstadelske freien specialisationspielen. Makelinger Van Kom keen V. Cristianse Vallendiger Van de passen freiende Van Combridge Commenden Ann. Producting van freiende Van Van de Van	High quality writes how priority measures between Highlight and the preston of the ACE/ACE/ACE and the MT. Commission. Along making read [colors] is not of depositional leading to the of Protected species and building stong reads a supplicate alance affects upon EEC all pictures.	The significant lease lines — Commission is Milestingly Stead peaces. Neverth Madeingly/Stead (activities) of the line — Commission Anna. Proteined queue squares directly in the work of Milesting Stead of the sealest Anna. Proteined of the special commission Anna. Proteined of the sealest Anna Anna Anna Anna Anna Anna Anna Ann	Combinité: spannify populated, analong main sellements. Linimous impantoi fundad tentage. Eaction anal of MT analoh. Madinglos Tid, sa analoh impasted emegions immediately south of thatlinis. Committee through university: most littley impact would	Cennelary - Constaints - sparsely populated, assisting main selfenerals, University impact of butted haritage. Earlier assist! Manketch assists Collect completely. - no significant adverse effects upon SEA objectives.	WIT amon't Miningley file, so amon't impained exceptors immediately south of hat link. Convention through uninensity - montified; impain would be on heritage. - no significant asserts when it upon SEA objections.
	Statingley final into lare: Commission Statingley Final powers frough Vitral Cambridge Conservation Seas. Protected open spaces already to the north of Malingley Seas. The western and	MIT parallel services: Declinated loss heality to our parallel in the MIT between junction 11 (Decemberging) continuation 12 Administration (Section 14 decimpation (Perloy BE) Silve in translate within "Level's Beinge President-level Perloy, 107 only permits described within "Level's Beinge President-level Perloy, 107 only permits described from the Control Section (Section 14 decimpation of the Section Perloy Control Section 14 decimpation (Section 14 decimpation 14	MIT paradial sentem - Dedicated has harbly to non-paradials the MIT between paradian III (Demandappia) and fundam LS (Beldinglay Study - consciously) - Owner bed designation (Mary Study III as included within Land - Study Personal fundam for the Committee of the Committee of the Committee of the Committee of the Harbly Committee of the Committee of the Committee of the Committee of the Committee of the London's Minter and (Dellamon complex Study Committee) (All of the Committee of the Comm	slimate shange and food risk -same significant adverse effects upon 300 stajentives. Madingley Snad Iron lane - Constraints - Madingley Food passes.	Medingley Road has lare: Coreheints: Medingley Road passes frough West Coreheintys Corearation late. Probeint open spaces directly to the north of Medingley Road in the standard of	honing Malingley Road. Fixed Zone : Los polishilly. AQVision : inhoused manufacture largely unpopulated within EDn until montal Energy Way. *As significant larged out astempt effects upon IEEA significant.	no nignificant advenar effects upon IEEE objectives Medingley Road loss lone - Cornelatinis - Medingley Road passers Resulph Start Contintings Compensation Jones - Protected open.	Serious Coole E Index holdings busing bledingley Road. Flood Zone : Low probability. ACTione : inhumon manufactors lare largely unpopulated within 50m until seas of Storeys Viey. - na significant larenthist or adverse effects upon SEA significant	- no significant adverse effects upon EEA signifiers	Moleginy Malch PER Lopines for Insurine. Onlywoods of Al 303 has taked impact on servation population recorders. Loss of agricultural local. Observine: "An injusticant advance effects upon 30 Autojustions.	
w 13	Bindingley East loss loss: Commission: Undergley East Jones and State of the Commission: Undergley East Jones spream strengths for early of Madergley State. She washen and let Haddingley State. She washen and let Haddingley East. She is skipped Dann for Holly and Facel, Valence Obert Ellisser (East Haddingle) and East Haddingle (East Haddingle) and East Haddingle) and East Haddingle (East Haddingle) and East Haddingle).	EG, Site in Instendantion Lond's Beinge Fernánskout Prolon SVF only permit development four soudername and in any sisk of trindenment in the Muland Faults Autonomy Chromostop of Lond's Bridge A. Schedule Manument (Estilament complex NE of	Scheduler Messen and (Britism and compiles NS of Figs. Implicible) is bounded cords of Junction 11 (Fability NS14 S Heritages Australia). Significant advance effects against IEE Antiquations on qualenties and prohausomers of the Intelligence and contripution, producing historia and prohausomers of the Intelligence and contripution producing historia and	Vasant agustamination of entre upon incomprison of planting in Table Law Commission Law Principle (and grows drough View Combining Conservation Law Principle span and the Commission Commission Law Principle span lanting in the control of the Commission Commission Commission (Policy Commission Law Law Law Law Commission Commission Law Law Law Policy Commission Law Law Law Law Law Law Law Law Law Policy Commission Law Law Law Law Law Law Law Law Law Annual Commission Law Law Law Law Law Law Law Law Law Law Law Law Law Law Law Law Law Law	Production open systems (develope the north of Markengley Basel. The northern and all followings) of Road is the solvening of the SEI in developed the SEI in developed of the SEI in developed of the SEI in developed of the SEI in t	Caster Stitler jurnion improvements: Unpopulated agricultural area: widening ASSE west of jurnion to match existing elitering to each.	Madingley Road Ion Ione - Combatein - Madingley Road passes from the Combateling Communication Area. Produced again, against Service in the Combateling Communication Area. Produced again, against Service in the school of the Mill In designated Committee. But Pulsy a Combateling Ioned Plant J. Materic Code In Date Standard, International Execution Committee International Committee in the passes benefit assessment from the Committee International Committee Int		en impani my jupini materomeni and unifely any adense impani un 55 and mate. Control Shires Park & Ride Vey spensyly proprieta general anna et applicationations. Constability in hos along material land. An application delense effects your Elf-highesters.	and to displace the second proposation recognises, beat to experimental or of the control of the	
	Dire uniformated Statege, Way, no significant beneficial or adverse effects upon SEA abjectives. Centro Chiber Park S. Rafer. "Dery sparsely proprieted agricultural area of 3 options (Insulence, Combatrio), loss of agricultural land, no shorthand adverse of Refer June SEA Schriedus.	Heritoglaid in located moth of Junation 11 (Policy NH14 Heritogo Bocario). - Egynthout Record effects against EEAstignation on production and enhancemental the landscape and countrivides understood	enhancinginal testures and insir settings, and reducing valuestability to climate shange and facultists. High results secrement has extended measures between Habilatits and the	Soning Madingley/Road Pland Zone : Low probability ASP/color : bloomed manufaction land largely unperpulsed within ISM until easted Stemps Way. - on a significant immediate or adverse effects upon SEA absention.	inhoused recentific has large largely appropriated within Ele- self metal of Storogo Eley. - non-special interestinal or adverse effects upon EEA objectives.	 no significant adverse effects upon IEEE objectives NOEE tous lone - Insufficient details. Securing central total loss lone, no impact on physical environment and artifact) any adverse impact on IQ and notice. 				Cambridge Local Planty - Various Gode I Indeed buildings burning Madingley Foad. Food Zone - Long probability. ACT bake - Indeed Academies has lone largely unpopulated within 50m until most of Stoneys. View.	
	area at 3 optional leadures. Constraints loss of agricultural land. "no significant adverse effects upon EEA significes.	and anhancemental the landscape and recordingle, potenting holests and archaeological leakness and their selfings, and estimoing submedify is climate change and flood (s). Medically-flood for loss Completitis Medically flood excess.	Phylocolic paymycain has planifymania can hainen i Ryddidd, and the souther of the Dicklat SIG and and M. I. Cambriania. Haining SIG Cambridge Green Sath, Well. Proteining Agrandunal Land Sid Stadenswith SIG Size of Brodensity Cambridge International Land Sid Stadenswith SIG Size of Stadensity and Cambridge International Land Size of Size of Size of Size of Size of Size of	Carbon Gibbel Fach & Ride - Very sparsely populated agricultural area of 3 splined baselone. Constitution loop of agricultural land.	Eignatine Mastingley Malch roundational - Balter management of space and means of providing bus priority of junction, would have no impact on physical environment or of collections and providing the providing and providing	Impart on ICI and make. B Steels Park & Kide: 2 options for location. No sensitive population reception. Loss of agricultural land. Observine many applications above, special parts IEEE applications.	Eignation bladingley Mulch roundational - Better management of spower and means of providing true priority of junction, establishmen as largest on physical environment and unlikely any selecture impact on A2 and mean.			*na significant beneficial or asterose effects upon IEEAstignotives	
		Madingley-Road has love - Combatith - Madingley-Road passers frough Wash Combidge Commenders Awa. Proteinted upon sparse, descript in the moth Madingley-Road. The sension and of Madingley-Road is the similar following the Com- tain Philips of Combining is count Plant. Vision Dated White Incidings bendeg Madingley-Road. Plant Zhon : Love-probability.	* expellment asterna effects from the Green Bell in South Combridgeshire (Poliny B.V. * Spellment asterna effects may also arise locally against the SEAstipolises estating in brokkings, sites and leatures of anthesiologisch, historical or architectural interest and deer settings (b), protestion and orbinousses of the soundsystel (E)			significant administration sport EET Antipotions					
Land take	Total land late extended to be around 161,000m2 extuding land	buildings banding libralingley transf Fland Zone 1 Law probability. 2 Marian labor extension in the annual 201,000m2 encluding land became developed to the annual 201,000m2 encluding land	interest and first settings (ii), protestion and enhancement of the countywide (ii) and countywide interesting the countywide (iii) and countywide interesting the county interesting the countywide interesting t	Trial land lake automated in the annual 284,000m2 methoding land floreign developments (deathed blue line on maps.)	Total land lake estimated to be around 100,000m3.	Total land take extension to be around 200,000m2.	Total land lake estimated to be around \$5,000e2 estiming land	Total land later extension in he around 40,000m2 excluding land through departments in backer fills in large several.	Total land take animated to be around \$10,000m2 evaluating land through developments (dashed blue line animaps).	Total land lake extended to be around 200,000m2 excluding land	Total land later estimated to be around 238,000m2.
	Land on which the browling intercope is booked evolution difficult to obtain due to the cost associated.	Large amount of audite land take required.	Large amount of easible land take required. Earne of the widdle sale land may require to be latter near Hastlerick word.	Large amount of easile land take required. (Review Farm land)	Proximityal park and side land lake to aminet would may preside an inpute.		and and an end of the second	and the second s	Large amount of actific hard take required. Some of the wildlife take land may require to be laken near Hankshik.	Large amount of audite land later required. Some of the wildlife site land may require to be laten near Handelah.	University land take required through recently developed area and stilled righty Exact.
13	Large amount of autitle land take required.	Some of the solidite site land may require to be taken near Hardwish asset. Proximity of land take to ensient word may create an issue.	Prodeligal land lake is animal wood may reside an house.						eval. Prodmityof lend bite to ancient wood may result an bour.	wood. Prodmityof land lide to ancients wood (Hambrish and Madingley) may	
Distribute fronts assertance	This Science of March Radio Informativ Operation countries	Low definited house; working adjacent in Mandalah Wand in Bathic amount in looks and endocrareful areas.	Z.new definited has say naming adjacent in Yandarid. Thesi and an office has bit in a billioning from in blery in opposed by locals and entiremental groups.	Annual dedicated has any connecting with the COR in Wellyte opposed by leash and endormerated groups.	The stirit reserves in Malindo Star and Statinday	This stock wassures in Malinder Stat and Malinder Stat	This solety researces on Medicular Size and Medicular Size	The exists measures on Madinates Was and Madinates Food waster a	University land lake required through resemby developed area south of likelingley Exact. A new definited buyears somine adjacent to Yandahib Wood is 18ets	A new definated houses receive adjacent to Medinate Ward and the	Abusesy sureing through south of the Wast Cambridge University size may realize as cambridge to the fundaments.
	A mile (LE hm) imply of the tomer Contintings to Berkhold Red line. Buy programs in mode the belowage are likely to be met with restriction only the University.	Delyto opposed by books and environmental groups. Likely to have a maderate impani.	link at Malingley files in 'Mely to opposed liphosals and environmental groups. Litely to achieve some of the objective and have a made also useful impact.	approximation has and environmental groups. Libraly to have a maderate impact.	But printly measures on bladinginy floar and bladinginy fined requires anotherwise of earlying and space. This is thely to be more acceptable to violat-bottlers than the commission of a definated business.	 But priority measures on Madespley Non-and Madespley Stand require a mealmanter of entaining road square. This is likely to be more acceptable in state-holders from the complexation of a definated increasy. 	But, priority measures on Modinging Wine and Mininging Wand require a resolutation of existing road upone. This is Mergins be room assembled in validabilities than the correlations of a destinated loss way.	realization of existing mad space. This is likely to be more acceptable to state holders than the construction of a definited bureaup. Likely is meet the observer and hour a benefitial impact.	to opposed by locals and environmental groups. Abuseury surving through south wither West Cambridge University wite may not be asseptiable to the landowness.	American Committeey in Marky to approximately locate, and developmental groups. Underto have a maderate consult insure.	sile may make a coptable to the landowners. Likely to have a moderate usual impast.
1	Salahular groups in support of responing the line may oppose its commission is because.				Litely to meet the objective and have a beneficial impact.	Likelyis meet the objective and have a beneficial impact.	Likely in most the objective and have a beneficial impact.		Likely to achieve some of the objective and have a maderate overall impact.		
Contribution to land use and planning policy	Package addresses: -ubjective for light quality segregated bus priority measures on the ALSES between its jurislism with the ALSES and Queens Final.	Facility addresses: *algorite for high quality segregated its priority measures on the ATSC heteren is jurision with the ASSE and Queens Food,	Purchage addresses: - silgnifier for high quality segregated los priorilymeasures on the AUXO lietaeen its junction with the AUXI and Querns Nousi, Cambridge. - loss princip and guidel has measures on relationate into Cambridge.	Package addresses: "ubjector for high quality segregated has priority measures on the ATSS between its junction with the ACH and Queens Final.	Package addresses: - algorite for high quality segregated into priority measures on the XXXX between its jurisless with the ALDS	Package addresses: - adjusted for high spelly segregated itses priority measures on the 30'30'3 between its juristics with the AUE and Queens Road.	Pedage addresses - signale to high quality expression law princip measures an the 61000 between its junction with the AGB and Queens Road, Conducting - has princip and guided bus measures on satisf rades aris Controlling	Package addresses: *algorite for high quality segregated has printly measures on the A1303 between its junction with the A28 and Queens Road, Cercinidge, *Los printly and guide loss measures or radial makes into Carolinidge.	Findage addresses: - Ious provipand guided loss measures un solid routes into Cambridge.	Package addresses: *algorise for high spudity segregated into printipmeasures on the AF3CE between its jumiliar with the AE2E and Queens Knod.	Pedage addresses: - bus priority and guided itus measures on sadial nodes into Cambridge.
	-thus printly and guided hus measures on radial nuites into Cambridge.	For ATSE Instrume its jurniture with the AUSE and Queens Final, Combridge. - but priority and guided but measures on radial routes into Combridge.	Peological data guarde our measures on accurations on Lamanage. Prological data and followide our 1927 data and leave the developments belower 200 ask and Cambridge.	Al 353 between its jurision with the AUCE and Cusens Knad, Cambridge,— -Yous printly and guided loss measures on natial voules into Cambridge.	Nos printipand guided los measures on solial routes tota Cambridge.	Applicate so rups is source supreguent and promise and and all 3000 letters in a source south of a SEE and Custom Section 5. Cambridge. Four princip and guided love measures on radial routes into Cambridge.	this printly and guided has measures on radial routes into Cambridge.	Package does not fully address: +HOPT demandments for developments between 13 Nexts and Cambridge.	Footage store not fully address: - stiposter for high quality segregated loss priority measures on the ALSES between its junction with the ALSES and Queens Knool.	*Just priority and guided loss measures on sadial nodes into Cambridge.	Package does not fully address: - obtaining by high qualify-proposated loss priority-measures on the
	recoupe does not fully address: -1927' data and reads for developments between 31 Nexts and Combridge.	Personage does not full yackless. - HGPT date and heads for direct presents between 30 Nexts, and Cambridge.		runninge dans not full published. 1927 dan until medis for directly ments between 20 Seich, and Cambridge.	Package does not fully address: • HOPT den and heads for developments belanes. Its Nexts and Cambridge.	Perhaps does not fully address: *HDPT demand/meets for developments between 33 Newts and Cambridge.	Package does not fully address: • HIPT demandments for developments between III Nexts and Cambridge.		Cambridge102°C denumbranis for developments between Silvanis and Cambridge.	remage does not fully address: *ICPT demandments for destroyments between 33 Nexts and Cambridge.	ACM Information by junction with the MASS and Queens Nised, Cambridge, —NQPT demand/ments for directopments between St Nests, and Cambridge.
Bus senter commental debility	Terrior small than provided by extending solving commercial routes with improved times. Violati expect good market potential	2 Denice would be provided by extending existing assumented trains with improved times. Would expect good market potential	Earship would be probled by edending existing summercial routes with improved times. Would expent good market potential and no comparing sall.	Der der sould ber produkt by edending eduling sommercial nates with represed insert. Visual aspect good market potential and no sompeting sal.	Ennius would be provided by extending existing communical nules with improved times. Visual expent	Long distance service may not be siable if it is to provide a high bequency service.	Litalyhigh sidelity for communical operations an captures a manify demand for high into Cambridge, with no comparing red.	Unlike commencially, but will be a shower service than that which uses the new AZE.	Earnin mulities provided by extending existing commental noise with improve times. Visual experigencies after potential and no	Service would be provided by extending existing communical notes with represent times. Would expend good market potential and no	Enrice small the provided by extending existing communical to the communication of the commun
	Two separate routes required to sendor Addeniumsters and the City Center.	See sequestic routes required to service Addeninoshes and the City Center.	Likely to have a temploid impact.	Libely to hour a homefulail impasi.	good market potential and no sumpring red. Likely in hour a bornelloid impact.			Libelyte have a maderate impact.	Litely to hour a isometrical impact.	Likely to home a homefolial impact.	Likely in home a hemefolial impact.
Section of development impacts	There are very few submable groups being in producty to the AGN section and many unsex are amongst the 20% has a described in	There are very few submodule groups being in producing in the ACM contributed many areas are arounged for 20% lossed	There are serylese submodific groups living in proteinly to the AGB service and many areas, are amongst the JOL lead-deprined in England. The proposed	There are very less submable groups being in producty to the ACB sortider and many stream, are amongoide a 20% braid deprived in	There are very few universalitie groups being in proximity in the ACM contains and many areas are arroughlithe DVL	There are very few unlessable groups hing in prodetity in the ACM socials and many areas are amongs for 20% less topotoxis.	There are very few universible groups being in proximity to the AZSE contributed many areas are arturings the 20% least deprised in	There are very free advantable groups being in proximity to the ALSE contider and many areas, are assuring title 20% beast deprivation England. The	There are very few schemidtle groups thing in positivity in the AZE somition and many areas, are amongoidtle 20% based deprived in	There are very few submodule groups being in producing to the ACIS socials and many sense are amongst the 20% based deprined in	These are very less submittels groups thing in proximity to the ACRS somition and many areas are amongst the 20% basis imprised in
w 17	England. The proposed improved journey reliability and accessibility may provide new apportunities to access employment, education or indiving may at Addenismakes.	deprised in England. The proposed improved journey reliability and assessability may provide new apportunities to assess employment, education or basining.	improver(young yellahib) and assess hidly may you also new apportunities to assess a myslopeani, missalion or lashing. Likely to have a maderate distributional impass.	England. The proposation proved journey reliability and assessability may provide new apportunities to assess employment, education or basining may all Addentinuations.	least deprind in England. The proposal improved journey reliability and assess billing approvide new apportunities to assess employment, education or basing	England. The proposed improved journey vehicking and assemblify may provide new opportunities to assems, employment, education or learning.	England. The proposed improved journey reliability and assessibility mapprovide new opportunities to assess employment, education or basing.	proposed impresed journey which thy and assemblity may provide new appealurates in assembly service in advantum or basing. Likely in how a marketain distribution of immeri.	England. The proposed improved journey reliability and assessibility mapprovide new opportunities to assess employment, education or basing.	England. The proposed improved journey relability and assessibility may provide new apparamilies to assess employment, education or teatring.	England. The proposed improved journey relability and assessability may provide new opportunities to assess employment, education or hadring.
	Libelyte have a moderate distributional impact	Likely to have a maderate distributional impact.		Libely to hour a maderale distributional impact.	Litely in hore a medicate dividusional impasi.	Likelyte have a maderale distributional impact.	Litely in hour a medicale distributional impast.			Literly in home a manifestine distributional impact.	Likelyla hare a maderale distributional impast.
State of impact	Large land lake required, will regularly impact and current and soluble. Little is been obtained to be forced or off our corn.	Large land take required, will requiredly impact land somes; and solidite expensiolytical rear the solidite size near Handsols would. Properties I make in Highleids. Calibrate and Handsols would	Large land lake required, will required/impact land correct and stabilite expensioly that near-the stabilite site mass Hamback would. Provincing rapie in Hamback, Calaborate, Hamback, and Calabor would extendedly.	Large land later required, will regularly impact land sources, and satisfie. Little to have obtaining from large or or of contrast or	Land late required, will regularly impact and owners and wildful.	Landisks required, will regularly impact land somes, and wildle. Delays expected along ATSIS and ASIS while such is being carried as.	Cand take required, will regulately impact land servers and while. Delays repredentations ATSES and AESE while work is being servined and.	Land lake required, will regarded propositional sources; and wild like. Clotup required along AT 203 and will AGE (8 Newls) white work is being serviced ask.	Large land lake required, will regularly impact land convers and widelin. Properties of explicit Habitatis Carbonian Windows and C.	Large-land lake required, will regulately legacel land receives and solidie. Prodestruct reads to Mathetatic California and Structura and	Land take required, will regularly impact land servers and widdle. Onleys represent along A7303 and MT white work is being served and.
	Unity to have objections from leasts as will not serve many of the least areas although will aften from. New road finnings already developed Cambourse may aften d records half brown.	Proximity of nate in Highfolds Caldessie and Hardwish would polentially allow pick ups have in assummodate locals. New road finosph already developed Cambourne may affect month (sold houses).	Proximity of eachs in Highlinda's Caldennia, Handwish and Colon would polentially allow pick upo have to assummedate locals. New road finough already developed Cambourne may affect secondy built houses.	Chely to have objections from locals as will not serve many of the local areas although will affect from. Likely to regulate jumps in traffic all junction 30 on the 31 d due to local enterly manual error.	est.		New road through already developed Comissione may affect recently built houses.	New mad through already developed Cambourne mapaffest recently built bosom.	Prodenity of excite in High list the Coldensis - Handwish and Colon enally potentially allow pick ups have is assummedate locals. New year forwards already devoluped Combinative may after assembly south houses.	Prodesity of route to High Salot, California and Kantania would polentially allow pick ups have to assume models insule. New round through already developed Cantinums may affect recently build however.	
	Orlean repealed along \$1330 and \$11 while work is being carried as	exceedly built howers. Certaps expensed along ATSES and Starton Stand white work in being carried out.	Delays expensed along NICSO while work in being named out.	has printly measures. New road through already developed Combourne may affect exemply bulk houses.				Finale along existing sentiler therefore will be able assummed ale existing less step leadings.	Delays expected along MTI white work is being servine and	Drings represent along ALSOS and MET white work is, being sentent out.	
				Driags expected along 81303 while work is being carried out.							
Cont	Desire Chile College Oline Reader College Seattlen Belongstran (C.Desillon Park and date (C.Desillon New Will bedge (C.Desillon to (C.Desillon	Directorer CE32million Officer Render (1000million Maringly Ware CE3. Smillion Park and roter CE3. 2million	Developer ESSEntition Office Resear CLST-million Market Plant and CLST-million Market Plant including less priority link: ESS (million Park and ride: CLST-million	Developer CD Bellian Developer servicings and jorosium user ALDE CESmillion in Dismillion Officer Render CD 27 Partition Makingdop Non- ELD Josephin Park and dart CD 3million	ATSCS widering: E8-Brillian Park and ride Circlian Medingley Whith signalising: E8-Brillian	Engle love widening 124 Smillon Approach to Caster Gibber El Tmillon Park and side El Jmillon Backeyley Malch separationy ££6millon	Sweisper OL-Merillan Creeisper van beige and juminouwe ACM: Citimilian in 22-silian RECO miniong - CE-Imilian Makingky Makin signalung - EE-Imilian	Developer CO Testillan ECOS anteriory CO Semilian Maningley Mildels signaturing: E.S. Berlitten Bus persoly along and ECOS Extention	Chronisper EE 33million Officer Review CSA Shmillion Fast and Esber CS2-million Nata M11 Besign 1 CS2-million CSS-million	Drudoper (EXSmiller Office Reader (27) desilien Festund Faller Chellian New 1811 Bridge: (22) million (Albertian	Office Stude (11) Smillion Park and Falle (Finition Cylorod Madridge) bir (2) Smillion New Will Indige (2) million in Citientian State and Cost (SS 30 million in Citientian
	New Will bridge (22-million to CASmillion Solimated and COL Clariflon	Delimated cost CSLE?million	Extració cos GE Similios	Natingley Nam - 64 Jerollion Park and rate (3) Jerollion Ballesinglesse (56 Christian	Ballmated seed CD1 2million	Balmaind cost CB2million	Medingley Makin superioring: EL Smillion Delimeted cost ECT / Smillion	Brimsted until Citémilies	Extinated unit GH. Modillan	Balmated cost CH-73million	Entire at and court ESS 20 million
ORG (green house gas)	The introduction rule loss priority-measure should enduce the need to leave liquid, thus reducing congresion and greenhouse gas.	The introduction of a loss priority measure should reduce the resed in lease by use, thus, reducing congression and greenhouse	The introduction of a loss priority measure should reduce for need to insufficient, thus reducing congestion and greenhouse gas embosions.	The introduction of a loss priority measure should notice the need in travellity can, thus reducing congestion and greenhouse gas.	•	1	The introduction of a loss priority measure should reduce the need to leave by use, thus reducing compositor, and greenhouse gas	The introduction of a loss priority measure should reduce the need to leave by our, thus reducing congresion and greenhouse gas ambiguites.	The introduction of a loss priority measure should reduce the need to know by one, thus reducing compressors and greenhouse gas	The introduction of a loss printipmensum whould reduce the need to best in part to the medium compension and generature gas.	The introduction of a loss priority manager should reduce the need to intend by say, thus reducing sangestion and greenbouse gas
e 2	Langhed note compared to other options, increasing bus embrations.			has emission.							
Keywariahilas	Debroom how the male will link in the developers when anothers they will be connected (private for new road). Unknown conditions for UT 1 intrine minims to leave now in	Debrum how the route will link to the disordingers siles, and how they will be commuted (prized for new road). Debrum proximity of route in wildlife sile and siles of whithis a hore.	Chinese has the route will int to the developers takes and have they will be somewhat (princetiles new road). Uninese proximity of route in solidite take and takes of solidite takes near introduction.	Unknown how the make will link as the description wites and how they will be commuted (priced for new mad). Unknown if a new jurishm at Elearn, Artista' in included in P	Dissertain of ability to use existing bridge from silp road to access begress was parts and ride at litatingley Milch. Pulmilid to use Church Lane.	No perceival engineering uncertainties Lank of feed route alignment presents certainly on environmental impact.	Dishman how the major will link to the street gens, sites and how they will be associated (priced for new mast). Underson if a new jurnion at Bourn Arfald is, included in the	Unknown how the mode will link in the directopers siles; and how they will be surrected justed for new mod). Look of land mode alignment presents contains an environmental imment.	Unknown how the route will link to the developers takes and how they will be connected (priced for new road). Unknown proximity of route in while take and nice of while?* - **	Unknown how the novie will link to the deadupers sites and how they will be serometed prised by new road). Unknown production fracts to widdle site and size of widdle - to	Undersoon conditions for M1 bridge relates to large range in sent. Uncertain of ability to use existing bridge from ally rand to assembly man may park and did of Madinative Matin. Proceeds in
	United to be able to use leaving blassage route, unknown allermate route.	tean Highlands Caldenate and Henderich. Lack of Reed male alignment presents seriality un endinormental tripial.	Caldessis and Hardwish. Lask of field note alignment prevents seriality on emissionnestial impact	directions plans. Uniness literitorial of being able to obtain Reviery Farm land.	Lack of fleet route alignment presents certainly on environmental impact Lack of scale of halfs change presents seriainly on	Lank of scale of halfor change presents certainly on emissionnessial impact.	destinant plans. Lask of fixed mode alignment presents seriality or environmental limited.	Lesh of scale of halfs change presents certainly on endocreanial impact	Community probability for tracer to blood up the cost to an extreme to the even in Prigitation Conference and Mandatata. Undersome conditions, for SET1 bridge relating to large range in cost. Undersome conditions for SET1 bridge relating to large range in cost. Undersome condition land directly West Combridge Undersoly wise.	Highlieb California and Ventoria. University sould be MT bridge relates to large range in seal.	use Charin Lane. Unknown available land through West Cambridge University size.
	Last of fael maje glammer smarrh cetainty on emissionerial	Leads of scale of halfor shange presents serialisty on environmental dropes	Lack of scale of irellic sharge presents seriality on environmental impact	Lack of feel note alignment presents certainly on embournmental impact Lack of scale of traffic sharps presents certainly un environmental	endonmental impant		Lask of scale of bulls change presents seriality on eminormental impact		Unknown available land drough West Cambridge University sile. Look of land note alignment prevents vertainty on environmental impact.	Uncertain of ability to use exhibing hidge from alle mad to assert higgers near part, and ride at Madingley Malch. Potential to use Drumb Lane.	Lasts of faced novice alignment presents, serticity on environmental impact. Lasts of scale of tellis change servents certainly on environmental.
a 21	legant leads of traffic change account account account			myari					Lask of scale of hells sharge presents solutely or endocronantal impact	Lank of food male alignment presents, serialisty on embramental legant.	Impaci
a 21	Impará Lack of scale of indite shange greants certainly un antisumental Impará									mpail	
a 20	impadi Lach of ecolor of traffic sharper presents, sentainly on environmental impadi					(a) The make is identified to not along an existing scaling scaling land and a ship has bridge availability to increase the settings had assist be	 (a) The node is identified to our along an existing soal catenth which has limited realishing to increase the spitting but exist be entitled without impacting on the summaring highway. The 	[4] The mode is identified force along an existing and existent which has being an experiment which is a being a constant of the principles of the principles of the principles of the existing a few axising existent. The most simplified give is principled provision of the service and of the service and other principles.	[2] As the node runs through open land there is feeledly to sharpe toole in accommodate additional landons and nodes. The proatening the manady long range will lain the deaders of the node and the requirement is once the MIT will also limit the usual node.	(a) As the route runs deough open land there is feelibility to sharpe make in assummentation additional locations, and nodes. The unition	(a) The stude runs, mainly through open land and there is feelinity to after the naise in this area. (bit the University development in an interference of the last of the contract of the
to 20 Penduling of spring	Impact Lank of solar of halfer change presents settletly or annihumental repeat Only As the motion was through upon best from its feeding in change and As the motion was through upon best from its feeding in change rated to accommodate additional limitions and makes with the probability of the commonwhale additional limitions and makes with the probability of the commonwhale additional limitions and makes with the probability of the commonwhale additional limitions and makes with the probability of the commonwhale additional limitions and makes with the control of the commonwhale additional limitions and makes with the control of the commonwhale additional limitions and makes with the control of the commonwhale additional limitions and makes and the control of the commonwhale additional limitions and makes and the control of the commonwhale additional limitions and makes and the control of the commonwhale additional limitions and makes and the control of the commonwhale additional limitions and makes and the control of the commonwhale additional limitions and makes and the control of the commonwhale additional limitions and makes and the control of the commonwhale additional limitions and makes and the control of the commonwhale additional limitions and makes and the control of the commonwhale additional limitions and makes and the control of the commonwhale additional limition and makes and the control of the cont	(9) In the route non-through upon land them in fieldships shorper name in assumable additional landaries however from the windows and such as highlighten as the contract of the landaries and as highlighten.	[6] As the mode news through upon lead benefit, finishing is sharing exode in easier mode a different leastern increase two are vertication, assumed for leastern as part leaf least the leastern increase these are vertication.	(a) As the mode name through upon land there is feedably to shange mode to assessmentation additional limetimes. Assess amount Day Daylor, may be feedable housease the user-head power breas may exhibit the route settings. The again whose Machinelands are	highway and has limited opportunity in scale up or down on the options. The existing reunstational from the ACE has limited score to give the allowance. The score of	reduced eithout impusing on the surrounding highway. The node above Madraday is extended by the total to the extent of the section of the sec				does have potential to develop the areas around the ACE Makingley broken for additional settings. Although the soute show Mad	allement and dismiss. Augret ments MIT to have
p 21	impared. Land of scales of hardy presents cartering to an electrometric sequence of the scale of hardy presents cartering to an electrometric sequence. All the first numbers of the scales of the scales of hardy in the scales of the scales	10 th the resolution was freeight upon limit the ear is the shalling to any operation to accommodate an elicities of transfers from the electronic contractions are not of the electronic contractions are not of the electronic contractions and the seating from the electronic supers, worth of Electronic contractions and the seating from the electronic contraction and electronic contractions are contracted and electronic contractions and electronic contractions are desired as a contraction and electronic contractions.	[4] A the text can be expected upon best form in Stability to the age made in the commendate additional installant. Numer from any experience amount for hundress, such as Triplated Academics, Numbered, Colons and the entries to surper, mode Telling which will be the Academic Academic Academic and the service from younger, mode Telling, which will be the Academic Academic and the service to the academic academic academic academic academic academic academic for any academic academic academic academic academic academic academic for academic acade	[9] As the work trees through upon least freen in Earthilly in change study is amountened and defined leadings. Insert least, among amount flay, Cody, many in Earthile housest we have concluded possession of the mode regimes. The mode after globally is to producing which the mode regimes. The mode after globally is 'producing which the flay to easter of the contribution and substitute from remainments. [84] Empring the substance distinguished contribution would be seen both.	[4] In the first is the designation of the content arrange of the content of highway made in an invitation of agreement from the ACLE has bringled expense in the seption. The making manufational from the ACLE has limited expense in the first alignment. The made along Moderative production of the content of the content and action of the content action.	[4] The resist is identified in our along an establing searchesteric shitch the Interior and officially increase for a principle to be reliable to the Interior and Interior in contrast and the Interior and Interior I	covering over the ALE would be required as part of the solutions to enable development of the roots. The node along Makingley to polerically realisted by the extent of the corollar auxiliate for construction.	extent of the contribut available for combination. (4) Depoing the column during combination would have a leasure impact.	and the explanement is more the MTI will also limit the current node. (b) Depping the scheme distinguished on your lines links inche that mayord some anyyoupons to the local area or communities.	20) As the results room forcegle signs level flowers in familiality in columner, must be manufacture distillation flowerings and means. The options down home particular for solvings the amount of the ACM Manufacture and the action of the	alignment and downline. Screen, over the MET is limited to localized arrans to assume module the proposed mode.
Problem of species	inside that mayoral server any purpose in the local area or communities.	So the document to the contract of the sea is bandwise to describe the contract of the sea is bandwise to describe the contract of the contrac	(b) Dispying the subseme during construction would be on brits inclu that may not save any purpose to the local area or communities.	(b) Elegating the subsense staring containsation would leave links, restly that magnet serve any sports to the lineal sense or communities and provide situations were the ALTER lang may resilies utilized for any additional releast requirements. For advantance of the guidelit lank senses many content of the guidelit lank senses many contents.	(b) Dayging the solvene during continuous would have a locate impact than the other names and anywords sould be accommodated in the existing road nature.	(N) Shapping the subseme during construction would have a lesser impact than the other routes and anyworks usual be assumediated in the existing road retrieved.	[5] (b) The mode is identified the reactioning are stating made outered, which has individual or admissibly increased to explore he in similar in middle in extensive the regimen has in similar in execution grower than \$1.22 and the magnetic as part of the such as execution enterthing the internation of the reaction. Since the length the internation of the reaction are admissible to execution are admissible to the contract of the reaction are admissible to the reaction and the reaction are admissible to the reaction and reaction. The reaction are admissible to the reaction and reaction. The reaction are admissible to the reaction and reaction. The reaction are admissible to the reaction and reaction. The reaction are admissible to the reaction are admissible to the reaction and reaction. The reaction are admissible to the reaction and reaction. The reaction are admissible to the reaction are admissible to the reaction and reaction. The reaction are admissible to the reaction are admissible to the reaction and reaction. The reaction are admissible to the reaction a	(4) Dayping the scheme during construction would have a lesson impact than some of the males and enquests sould be assummabled in the existing and releval. File mode was stopped than the improved coad selevals will be utilized in the existing network.	and the requirement is cross, the BOT and about limit the control rece. (b) Ellipsying the subment during constructions would listen tricks involved in the control received the subment of the control received in the contr		digeneral and duration. Scena user the MT is limited to localized areas is assumentable the proposed mule. (A) Suppling the scheme during conclusions small-linear scena risks included the scheme any purposes to the local area or sommunities. Failure to complete the annual governor the MT (will scenar the proposate links into Combidge.
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