8.1 Comparison of Options and rationale

Table 15. Option 1, 6 and 3a Comparative Performance MCAF using LLF Criteria

DRAFT			Option 1			Option 6			Option 3a		
Criteria	**Notes / Data**	**Details / Metrics**	**Metric**	**Score**	**Rationale**	**Metric**	**Score**	**Rationale**	**Metric**	**Score**	**Rationale**
Journey Times	Journey times have been calculated based on existing on-board real-time bus data for buses on Madingley Road, on the Cambridgeshire Guided Busway and on bus lanes. The assessment assumes an allowance for acceleration and deceleration between stops. Inbound and outbound journey times have been assessed separately. If there was an express service for all options which travelled between Cambourne a Park and Ride Site, West Cambridge and Grange Road the journey times in the AM peak inbound are likely to be as follows: Option 1 = 22mins, Opt 6 = 21, Opt 3a = 17 mins.	Inbound – AM/PM Peak (Stopping)	30	3	Options 1 and 6 have journey times within two minutes of one another. It has been concluded that there is insufficient perceivable difference in the journey time for this stage of assessment. They are therefore considered neutral.	28	3	Options 1 and 6 have journey times within two minutes of one another. It has been concluded that there is insufficient perceivable difference in the journey time for this stage of assessment. They are therefore considered neutral.	20	5	Option 3 offers a significant (highly perceivable) reduction in journey times compared to Options 1 and 6. The journey time is considered 'very good'.
		Outbound – AM/PM Peak (Stopping)	33	3		31	3		26	5	
		Average Score	31.5	3		29.5	3		23	5	
	Fast service - theoretical non-stop journey time for all options based on a route of Cambourne to Cambridge stopping at a Park and Ride Site and West Cambridge.	Inbound – AM/PM Peak (Express)	22	3		21	4		17	5	
		Outbound – AM/PM Peak (Express)	21			19			17		
Bus Frequency	It is proposed that 9 buses an hour will route between Cambourne and Cambridge. 3 will continue to Cambridge North Station. 6 services will access the City Centre of which 3 would continue to Addenbrookes. Should the Western Orbital Scheme come forward the latter services would operate along the Western Orbital	AM Peak, buses per hour, inbound Note that this does not indicate the capacity of each Option, which will be assessed separately.	9	3	Initial agreed assumption.	9	3	Initial agreed assumption.	9	3	Initial agreed assumption.
Journey time variability (based on current traffic conditions)	A comparison of the potential improvement in journey time variability compared to the current Citi4 service, based on existing traffic conditions during peak hours.	Potential % improvement in journey time variability in the peak hour, compared to Citi4		TBC			TBC			TBC	
				TBC			TBC			TBC	
Capital out-turn costs (not including cost of Park and Ride site)	Surveyor assessment. Not equivalent to Value for Money (see BCR below) These costs include all infrastructure costs between Cambourne and Cambridge and do not include land costs	£(2010 basis)	£11,531,900	5	Score based on linear interpolation.	£18,972,000	4	Score based on linear interpolation.	£77,185,000	1	Score based on linear interpolation.
High Level BCR		To be included following further analysis	TBC	TBC		TBC	TBC		TBC	TBC	
Landscape and Visual / Heritage	As per assessment in the SOBC – on a 7-point scale (Large Adverse – Large Beneficial) (pre-mitigation)	Relative change from current situation; desk-top assessment	Slight Adverse	3	Some visual intrusion and impacts on vegetation specifically at the Park and Ride site, details below	Moderate Adverse	2	Greater visual intrusion and change of landscape character as a result of the required gantries	Moderate Adverse	1	Impact on public open space and agricultural land on the offline alignment.
Air Pollution	As per assessment in the SOBC – on a 7-point scale– change in CO2 emissions and total change in air quality over 60-year appraisal period. Assumed Option 6 is Similar to Option 1 with respect to air pollution.	Relative change from current situation; desk-top assessment	Moderate Adverse	3	Potential for an adverse impact in Cambridge city centre as a result of an increase in bus traffic. Potential offset due to mode shift and reduction in veh-km have not been considered at this stage.	Moderate Adverse	3	Potential for an adverse impact in Cambridge city centre as a result of an increase in bus traffic. Potential offset due to mode shift and reduction in veh-km have not been considered at this stage.	Moderate Adverse	3	Potential for an adverse impact in Cambridge city centre as a result of an increase in bus traffic. Potential offset due to mode shift and reduction in veh-km have not been considered at this stage.
Noise Impact	As per assessment in the SOBC – on a 7-point scale - change in noise impacts on receptors, such as households	Relative change from current situation; desk-top assessment	Slight Adverse	3		Slight Adverse	3		Moderate Adverse	2	

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			Option 1			Option 6			Option 3a		
Criteria	**Notes / Data**	**Details / Metrics**	**Metric**	**Score**	**Rationale**	**Metric**	**Score**	**Rationale**	**Metric**	**Score**	**Rationale**
Constructability Risk	No full assessment of construction disruption has been undertaken, however the construction impact on Madingley Hill (option 6) is likely to be similar to that caused on the M11 due to the construction of a new bridge.	As per assessment criteria in the SOBC (complexity of delivery)	Medium	2	Significant risk relating to stats diversions and traffic management issues.	High	1	Construction of a mid-carriageway tidal flow lane would be associated with significant disruption, stats issues and traffic management issues. M11 Bridge widening is cheaper than a new bridge, but more complex to deliver (condition of existing structure, hydro demolition etc.).	Lowest	4	New Bridge more straightforward than widening). Fewer stats issues due to greenfield land. Fewer traffic management issues.
Deliverability Risk	Deliverability risk (in terms of planning requirements and permissions) is expected to be lowest where schemes are based on upgrades to existing infrastructure. New infrastructure on greenfield sites is expected to have the highest risk.	As per Oct-2016 Business Case criteria (planning / consents)	Low-Medium	4	CPO required for private land / gardens. Delivered through HA/CPO. Likely to require the least amount of land take.	Medium-High	3	Potential requirement for more land take than Option 1, and related acquisition issues. Delivered through Highways Act / CPO.	Medium-High	2	Potential to negotiate greenfield land without CPO. Delivered through TWA. Requires the most land take.
Time to full implementation	Year of scheme opening	Years	2021	4	c. 18 months for HA / CPO. No Public Enquiry. Established design and planning procedures and experience.	2022	3	c. 18 months for HA / CPO, however the additional land take could increase the time required. No public Enquiry. Design and planning process expected to take longer due to the more complex nature of the scheme, compared to Option 1.	2024	2	TWA slightly quicker than HA/CPO, but objections will lead to public enquiry.
Modal Shift	CSRM2 output	% of commuters from communities along the A428 corridor (Cambourne, Bourn, Caldecote etc.) travelling to Cambridge employment sites using bus services - AM inbound.	27%	3		28%	3		31%	4	
Connectivity	Desktop appraisal of connectivity of options with the proposed Western Orbital Scheme. Options will consider an online, off-line east and off-line west Western Orbital.	To Western Orbital – assuming on-road and off-road		3	Longer travel distance to get to hub, but possible to get directly onto M11. All score neutral due to level of certainty around the hub.		3	Longer travel distance to get to hub, but possible to get directly onto M11. All score neutral due to level of certainty around the hub.		3	Direct access to 'hub' and then onto M11. All score neutral due to level of certainty around the hub.
Policy Fit	Analysis of key policy documents including: Cambridgeshire LTP3 Highways England RIS Greater Cambridge and Peterborough SEP Greater Cambridge Partnership Local Plans for South Cambridgeshire and Cambridge	With broader GCP, Combined Authority	Medium	2	Potential to deliver a HQPT service, however buses are not fully segregated from general traffic and are more likely to suffer from reliability issues as a result.	Medium	2	Potential to deliver a HQPT service, however buses are not fully segregated from general traffic and are more likely to suffer from reliability issues as a result. The Option does not consider wider connectivity, especially towards the Centre, following termination of the Tidal lane. There are more limited opportunities to improve cycle connectivity.	Very Good	5	High strategic fit in terms of delivery of HQPT and segregation of buses from general traffic. Future proofing with respect to development sites and adopting alternative transport systems. Supports connectivity throughout the route.
Stakeholder Support	Based on 2015 consultation responses and subsequent stakeholder engagement. For Option 6 this is based on support from LLF.	Based on 2015 consultation responses and LLF support.		4	More popular than offline		2	Not tested in public consultation.		1	Less popular than online.
Simple total - Not weighted according to any specific criteria		**Total (unweighted)**		51	**Total (unweighted)**		45	**Total (unweighted)**		51	