

## D.2 Access

### Assessment methodology

- D.2.1 This assessment criterion considered the operational stage constraints of each site, in terms of the ability to access each site and achieve the required vehicle movements during operation of the new WWTP.
- D.2.2 A high-level desktop review was undertaken of the access routes to each proposed site area from the strategic road network. The nearest appropriate junction to each proposed site area was used, i.e. a junction that allows access to, and egress from, the A14. It was assumed that the A14 is suitable to carry the necessary traffic (similar to that of the existing WWTP) and therefore was not included in the assessment.
- D.2.3 The assessment conducted used available aerial imagery, OS mapping and a review of Cambridgeshire County Council's 'My Cambridge' interactive map to consider the following:
- The physical nature of existing highways infrastructure to the site from the A14, including; carriageway widths and junction types.
  - A swept path analysis for the proposed access arrangements into the site.
  - Any existing restrictions for Heavy Goods Vehicles (HGVs) along the routes.
  - Any weight restrictions present at bridges or crossings.
  - The resilience of the proposed access route, taking into consideration future plans to alter or remove existing highways infrastructure.
  - The cumulative impact of traffic associated with local committed developments and proposed infrastructure have been considered in the Preliminary Transport Assessment (TA) for each site (See Appendix K).
- D.2.4 The RAG definitions adopted for the access related operational impacts of each site are shown below in Table D.46.

**Table D.78: Transport related operational impact – RAG definitions**

Green	Amber	Red
Overall impact of site access during operation is expected to be minor: The physical nature of existing highways infrastructure to the site is considered adequate to accommodate HGV movements: There are no concerns regarding the resilience of the proposed access route.	Overall impact of site access during operation is expected to be moderate: The physical nature of existing highways infrastructure to the site is in need of improvement to accommodate high numbers of HGV movements: There are minor concerns regarding the resilience of the proposed access route.	Overall impact of site access during operation is expected to be severe: The physical nature of existing highways infrastructure to the site is considered inadequate/ unsafe to accommodate HGV movements: Existing weight restrictions are severely impeding the proposed access route and are not able to be moved/removed; or There are major concerns regarding the resilience of the proposed access route.

- D.2.5 For the purposes of assessing the operational access related impacts of each site, the differences in scheme sub-options such as 1a and 1b were considered negligible. Therefore, each option is grouped together as a singular site-based option.

### Assessment of unmitigated options

D.2.6 A summary of the operational access screening assessments for the unmitigated options and the resulting RAG evaluation are provided below. Greater detail regarding site access and site routing is provided in the Preliminary TA in Appendix K.

#### Site area 1 and 2

D.2.7 Site areas 1 and 2 both provide site routing from the A14 Milton Interchange via the A10 and Butt Lane. Junctions along these access routes are suitable for the movement of HGVs and the route itself, highlighted in the Preliminary TA, contains no existing weight restrictions.

D.2.8 There are potential issues in relation to the A14 Milton Interchange as it is already considered to operating at capacity, which has been raised as a concern by Highways England.

D.2.9 Access to site areas 1 and 2 would be provided using a new priority T-junction off Butt Lane which would be designed to support queuing from HGVs using a dedicated right turn lane. A Swept Path analysis of this proposed junction has been conducted to demonstrate the junction would operate satisfactorily.

D.2.10 For site areas 1 and 2, there are minor operational concerns regarding the A10/Butt Lane junction. When exiting Butt Lane, heading southbound on the A10, vehicles must route through the existing Milton Park & Ride site, before stopping at a separate set of lights to turn right. Although this route through the Park & Ride is a piece of adopted highway, it is noted that the turning movement is already used by HGVs routing from Milton Recycling Centre and any additional HGV flow may impact upon congestion at this junction.

D.2.11 There is a possibility for the signalised A10/Butt Lane junction to reincorporate a right turn movement to prevent routing through the Park & Ride site. However, this would require further modelling and discussion with Cambridgeshire County Council.

D.2.12 The Preliminary TA has considered the potential cumulative impact of local committed developments to site areas 1 and 2, namely the addition of Waterbeach New Town, on the junctions that could be used for access to site areas 1 and 2. The assessment highlights that Waterbeach New Town has the potential to cause junctions to operate above capacity, therefore any future assessment of site areas 1 and 2 will require further consideration and assessment once more is known about the existing and proposed traffic generation for the WWTP site. As the A14 Milton Interchange is already considered to operating at capacity, it is considered that cumulative impacts of Waterbeach New Town are likely to be significant.

#### Site area 3

D.2.13 The unmitigated option for site area 3 provides operational routing from Junction 34 of the A14, via Horningsea Road. Junctions along this access route appear to be able to support the predicted level of HGV movements; however, as highlighted in the Preliminary TA, Horningsea Road has existing weight restrictions, which would need to be addressed.

D.2.14 In the unmitigated scenario, access to site area 3 would be provided using a new priority T-junction off Horningsea Road, which would be designed to support queuing from HGVs using a dedicated right turn lane. A Swept Path analysis of this junction has been conducted to demonstrate the junction would operate satisfactorily.

D.2.15 Junction 34 of the A14 is a 'west only' junction therefore only traffic to and from the west can access the site directly; whilst traffic travelling to and from the east via the A14, would currently be required to perform a U-turn manoeuvre at the Milton Interchange. Concerns have been

raised by Highways England in relation to use of this junction as it is already considered to be at capacity.

- D.2.16 In addition, there are some concerns regarding GCP's Cambridge Eastern Access Study which will consider the future role of Junction 34, including whether it will remain as a junction. However, the study is at an early stage and has not reached a conclusion on the future of Junction 34 as yet. Therefore, regular engagement with GCP will be required to monitor progress on this potential option.
- D.2.17 Table D.79 shows the operational access RAG assessment for all three sites that are being considered.

**Table D.79: Operational access RAG assessment**

Site	Unmitigated RAG score
1	Amber
2	Amber
3	Red

**Mitigation identification**

**Site area 1**

- D.2.18 For site area 1 there are no additional mitigation opportunities identified, during operation, that were not previously considered when evaluating the preferred access locations highlighted in the Preliminary TA in Appendix K.
- D.2.19 The mitigation opportunities considered in defining the preferred access option in the Preliminary TA include the following:
  - Site access from Butt Lane will take into consideration the proximity to the A10, to minimise any future impact of queueing to and from the proposed access route.
  - Site access from Butt Lane will consider field boundaries and follow existing field patterns to reduce the impact upon local farmers and reduce land take.
  - Site access will take into consideration the location of Mere Way and will be distanced accordingly to minimise interference with localised Non-Motorised User (NMU) movements.
  - Site access from Butt Lane via the A10 will be used as the access route to the A14 to minimise flows through nearby sensitive receptor locations such as Histon and Impington.
  - Site access from Butt Lane assumes construction of a new priority junction on Butt Lane with a dedicated right-turn into the site to prevent blocking back towards the A10.
- D.2.20 Mitigation for construction traffic impacts would include the preparation of a Construction Traffic Management Plan (CTMP) to achieve the following:
  - Reduce the duration and/or impact of any future road closures.
  - Reduce construction traffic flows during peak periods

**Site area 2**

- D.2.21 For site area 2 there are no additional mitigation opportunities identified, during operation, that were not previously considered when evaluating the preferred access locations highlighted in the Preliminary TA in Appendix K.

D.2.22 The mitigation opportunities considered in defining the preferred access option in the Preliminary TA include the following:

- Site access from Butt Lane will take into consideration the proximity to the A10, to minimise any future impact of queueing to and from the proposed access route.
- Site access from Butt Lane will consider field boundaries and follow existing field patterns to reduce the impact upon local farmers and reduce land take.
- Site access will take into consideration the location of Mere Way and will be distanced accordingly to minimise interference with localised Non-Motorised User (NMU) movements.
- Site access from Butt Lane via the A10 will be used as the access route to the A14, to minimise flows through nearby sensitive receptor locations such as Histon and Impington.
- Site access from Butt Lane assumes construction of a new priority junction on Butt Lane with a dedicated right-turn into the site to prevent blocking back towards the A10.

D.2.23 Mitigation for construction impacts would include the preparation of a CTMP to achieve the following:

- Reduce the duration and/or impact of any future road closures.
- Reduce construction traffic flows during peak periods

#### Site area 3

D.2.24 Numerous mitigation measures were considered for the construction and operation of site area 3, as described below.

#### Site area 3 mitigation measures during construction

D.2.25 In the mitigated scenario, access to Site 3 for construction will remain from Horningsea Road via Junction 34. The only exception to this is the construction of the operational access to Site 3, and the infrastructure changes to the south of the bridge over the A14 (as outlined below in D.2.27) which will take place from High Ditch Road via Junction 35.

D.2.26 The following mitigation measures have been considered:

- Formation of a CTMP:
  - To mitigate the duration and/or impact of any future road closures.
  - To minimise the quantity of construction vehicles accessing the site from the east. Construction vehicles and construction materials should be sourced from the north (A1 via A14 west), south (M11 via A14 west) or west (A14), where possible, to reduce the number of vehicles performing a U-turn manoeuvre at the Milton Interchange. In addition, the Histon Interchange could be used as an alternative junction to perform a U-turn manoeuvre to alleviate the compounding effects of existing operational traffic and construction traffic on the Milton interchange.
  - To minimise construction traffic flows during peak periods
- Possible speed reduction to improve the safety of the proposed construction access junction and reduce impact upon NMUs using the shared use pedestrian and cycleway along Horningsea Road.
- Maintain safe access to Low Fen Drove Way Public Right of Way for NMU's travelling from both Horningsea Road and High Ditch Road - with the exception of a few periods where it is anticipated that the bridge over the A14 will have to be closed for a short duration to carry out infrastructure works to Low Fen Drove Way to the south of the bridge and the access junction from High Ditch Road.

- Maintain safe access to Low Fen Drove Way itself via Horningsea Road, to negate the possibility of severance for dependant road users.

### Site area 3 mitigation measures during operation

D.2.27 In the mitigated scenario, it is proposed that operational access will be via High Ditch Road/Low Fen Drove Way from Junction 35 of the A14 rather than from Junction 34 via Horningsea Road. This is because access from the A14 via Junction 34 (Fen Ditton) is restrictive and only currently caters for movements to and from the west and the future of Junction 34 is dependent upon the wider Cambridge Eastern Access Study. Please see the Preliminary TA in Appendix K for further detail.

D.2.28 The following mitigation measures have been considered:

- Highways improvements to High Ditch Road to increase the width of the carriageway by approximately 1m to the north.
- Junction improvements to both the High Ditch Road/Newmarket Road junction and High Ditch Road/ Low Fen Drove Way junction to allow for safer turning movements for HGVs.
- Infrastructure improvements to integrate one-way signals over the Low Fen Drove Way bridge over the A14, reducing conflict and allowing safe access to site area 3.
- Widening the approach to Low Fen Drove Way bridge to allow for safe passage of HGVs.
- Improving the existing safety of NMU's along Low Fen Drove Way by ensuring a safe and clear route for all Non-Motorised Users.
- Improved signage to provide prior warning signs to access only weight restrictions along High Ditch Road.

### Assessment of mitigated options

D.2.29 A summary of the operational access screening assessments for the mitigated options and the resulting RAG evaluation are provided below. Greater detail regarding site access and site routing is provided in the Preliminary TA in Appendix K.

#### Site areas 1 and 2

D.2.30 As outlined in above, the preferred operational access routes into site areas 1 and 2 do not require further mitigation measures at this stage.

D.2.31 As a result, the RAG evaluations for site areas 1 and 2 are unchanged from unmitigated scenario.

#### Site area 3

D.2.32 The mitigated option for site area 3 provides routing for operational traffic from Junction 35 of the A14, the Quy Interchange, via High Ditch Road and Low Fen Drove Way. With the proposed highway improvement measures, highlighted in the Preliminary TA (Appendix K), put in place; junctions along this access route appear to be capable of accommodating the predicted number of HGV movements.

D.2.33 The existing "access only" weight restriction for HGVs along High Ditch Road would be highlighted using an advance warning sign at the improved Newmarket Road/High Ditch Road Junction; to inform HGVs drivers about the proposed site access and prevent HGVs drivers continuing along High Ditch Road towards Fen Ditton.

D.2.34 High Ditch Road itself would be widened to the northern side to allow for the passing of HGV vehicles without risk of kerb and verge degradation.

- D.2.35 Access to site area 3 would be provided using a new priority T-junction off Low Fen Drove Way, which would be designed to support queuing of HGVs.
- D.2.36 Operational vehicles travelling to and from the east via the A14, would no longer need to perform a U-turn manoeuvre at the Milton Interchange, as vehicles would instead route via Junction 35, the Quy Interchange. There are currently no concerns regarding the resilience of the mitigated access route as operational access would no longer depend on Junction 34. Operational access via High Ditch Road does not currently conflict with GCP's plans for Cambridge Eastern Access.
- D.2.37 The Preliminary TA has considered the potential cumulative impact of local committed developments to site area 3, namely the development of land both North of Cherry Hinton (S/1231/18/OL)<sup>74</sup> and North of Newmarket Road (S/2682/13/OL) (also known as the Marleigh/Wing development).
- D.2.38 The junction performance data associated with these developments highlights the potential for the A14 Junction 35 roundabout (Quy interchange) to be over capacity with the Marleigh (formerly Wing) development in place, but as this assessment dates back to 2013, should site area 3 be taken forward, there would need to be an up-to-date traffic assessment of the area which considers the cumulative impact. However, the operational increase in traffic for WWTP is considered to be minor compared to the increase in traffic associated with the Marleigh (formerly Wing) development.
- D.2.39 It is considered that the potential cumulative impacts of committed development are greater for operational access to site areas 1 and 2 than for site area 3.

**Table D.80: Operational access RAG assessment**

Site	Mitigation Measures	Unmitigated RAG score	Mitigated RAG score
1	No further mitigation needed following preferred access option assessment	Amber	Amber
2	No further mitigation needed following preferred access option assessment	Amber	Amber
3	Complete change of routing from access option HSR-01 to HDR-01. Access from Junction 35 of the A14 via Newmarket Road, High Ditch Road and Low Fen Drove Way. Highways improvements to High Ditch Road. Junction improvements to High Ditch Road/Newmarket Road and High Ditch Road/Low Fen Drove Way Junction Infrastructure improvements to bridge over the A14	Red	Green

<sup>74</sup> North of Cherry Hinton Development: S/1231/18/OL - 1200 residential dwellings (including retirement living facility (within Use Class C2/C3)) a local centre comprising uses within Use Class A1/A2/A3/A4/A5/B1a/D1/D2 primary and secondary schools community facilities open spaces allotments landscaping and associated infrastructure.

### Incorporating feedback

D.2.40 Phase one non-statutory consultation was held in order to share the proposals for relocating the WWTP with the public and stakeholders. This section provides a summary of the feedback received from the public in relation to traffic and access and how the concerns, issues and opportunities raised have been considered within the assessment criteria for Stage 4 final site selection.

**Table D.81: Traffic and access feedback**

Sub-Theme	Site (if specific)	Feedback Summary	Response
		Most respondents commenting on traffic and access were concerned with air quality, noise and increased congestion during construction and operation of the plant.	The noise and air quality assessments consider the potential impacts of traffic during construction and operation of the new WWTP; and therefore do not need to be considered when evaluating the potential impact of traffic and access. Congestion during construction and operational periods is considered within the traffic impacts assessment and will be managed with a Construction Management Plan.
		Concerns about the proposed A10 dualling	The traffic and access assessments considered the potential for cumulative impacts including infrastructure improvements. This is assessed further in the preliminary Transport Assessment which states that the A10 dualling scheme is not committed at present and therefore has not been considered further at this stage.
General		Concerns over safety from site traffic using local roads were raised, particularly in relation to local schools.	Safety of road uses has been considered in the assessment including pedestrian crossings and sensitive receptors such as schools and playgrounds (see Appendix C.4). The assessment confirms that the proposed access routes to all of the proposed sites do not pass numerous sensitive receptors and do not pass any schools.
		In terms of Traffic and access, site 3 was most favoured. A number of comments queried how access to Sites 1 or 2 would be achieved.	The access assessment (see Section D.2) presents how Site 1 & 2 would be accessed from a new priority T-junction off Butt Lane which would be designed to support queuing of HGV's using a dedicated right turn lane. A Swept Path analysis of this proposed junction has been conducted to demonstrate the junction would operate satisfactorily.
		Comment that traffic on the A10 will already be increased with the development of Waterbeach New Town and the new police and fire stations.	The access (see Section D.2) and traffic (see Appendix C.4) assessments discuss how Site 1 & 2 have been considered with the cumulative impact of Waterbeach New Town. The proposals for the police and fire stations to be relocated to land south of Milton Park & Ride are not committed at the time of writing and thus have not been included in the assessment.

Sub-Theme	Site (if specific)	Feedback Summary	Response
Impacts of increased Traffic	Site 1 & 2	Concern raised over traffic impacts to local communities, for which a significant number of comments consider to be greater for Sites 1 and 2. The proximity to schools, nurseries and a travellers' site were specifically sited.	The assessment includes sensitivity receptors along the route for example, residential communities, schools and nurseries (see Appendix C.4).
		Noise and pollution were the most common concerns amongst those commenting on sites 1 and 2, often owing to either the historic character of site 1 or the potential cumulative impacts of the existing levels of A10 traffic.	Noise and air quality assessments will use the traffic assessment to undertake their analysis. However, noise and air quality are assessed separately to traffic and therefore do not need to be reported when evaluating the potential impact of traffic and access.
	Responses relating to site 3 were less concerned with major commuter routes however were concerned about the impacts and safety of HGVs on roads considered to be unsuitable, such as High Ditch Road, including the junction with Newmarket Road.	It has been recognised that High Ditch Road is not presently suitable for HGV movements and the proposals for site area 3 would include highways improvements to increase the width of both the carriageway and junction with Newmarket Road (see mitigation section above)	
	Many respondents suggested Site 3 was more suitable as any increase in traffic would not affect as many local communities through a relatively lower impact on congestion.	Existing congestion on the localised network pertinent to Site 1, 2 & 3 is outlined within the Preliminary TA and has been used to inform Stage 4 Site selection.	
	Site 3	The increased congestion of the A14 was raised multiple times regarding Site 3, although with less frequency than to sites 1 & 2.	The access and traffic assessments assume that the A14 is suitable to carry the necessary operational traffic (similar to that of the existing WWTP) and the use of the A14 would be similar across all the proposed sites, with the exception of which junctions are used to access the sites. Therefore, the impact on the A14 carriageway was not included in the assessment, however the potential impact on the A14 junctions used to access the sites are included in the assessments.
		Comment that if Site 3 is selected, a new non-motorised user bridge over the A14 suitable for horses should be built, as well as all current PRoW and non-registered but established in use access routes for horse riders protected.	There are currently no plans to build a new bridge over the A14. Safe access to the PROW will be maintained using the following proposed mitigations included within the assessment: (see mitigation section above) <ul style="list-style-type: none"> <li>● Infrastructure improvements to integrate one-way signals over the Low Fen Drove Way bridge over the A14, reducing conflict and allowing safe access to Site 3.</li> <li>● Infrastructure improvements over the Low Fen Drove Way bridge over the A14 to maintain safe access to the Low Fen Drove Way PROW.</li> </ul>
Comment that local cycle ways, in particular a newly completed route between Horningsea and Fen Ditton, would be compromised by Site 3 traffic.	Assessment states that operational access would be from Junction 35 of the A14 via High Ditch Road, thus the route would not impact on the road between Fen Ditton and Horningsea (Horningsea Road) and would not impact on the cycleway (which is off-road on a shared-use path)		



Sub-Theme	Site (if specific)	Feedback Summary	Response
			The impact of construction access on the cycleway will be mitigated using a Construction Management Plan, to minimise flow during peak periods. A traffic order will also be sought to introduce a temporary speed reduction on approach to the proposed construction access.
Access	Site 1	Some responses suggested that Sites 1 & 2 had considerably better access than site 3, although others claimed it was unclear where the access to the site would come from, given the closure of Butt Lane and additional disruption from police station proposal.	Access to Site 1 would be provided using a new priority T-junction off Butt Lane which would be designed to support queuing from HGV's using a dedicated right turn lane. A Swept Path analysis of this proposed junction has been conducted to demonstrate the junction would operate satisfactorily. The proposal to relocate Cambridge Police station is not committed and can therefore not be included in the cumulative assessment.
	Site 2	Similarly, concern was raised regarding accessing Site 2 from Butt Lane via the A10 in having a negative impact on the traffic both during construction and operation. Comment that Butt Lane would not be a suitable access point as it is already used to access a recycling centre, a Park and Ride facility and, currently, a Covid-19 testing facility.	Access to Site 1 would be provided using a new priority T-junction off Butt Lane which would be designed to support queuing from HGV's using a dedicated right turn lane. A Swept Path analysis of this proposed junction has been conducted to demonstrate the junction would operate satisfactorily. A preliminary traffic flow assessment has been undertaken using the Waterbeach New Town planning application to assess baseline traffic and committed developments.
		Concern reported over existing traffic levels on the A10, and that this may be exacerbated by the Waterbeach New Town and proposed Police Station.	see above
	Site 3	It was commented that Site 3 was favourable as there is access to the A14 without having to go through residential areas for construction.  However, other comments were concerned about site traffic needing to use a bridge over the disused railway or a farmer's bridge to cross the A14, neither of which would be suitable.	Construction access is proposed to be provided directly from Junction 34 of the A14 via Horningsea Road. Traffic will not be permitted to route through local residential areas such as Horningsea and Fen Ditton.  Access into Site 3 is not proposed to use either a farmer's bridge or the bridge over the disused railway. As discussed in the mitigation section, proposed access to Site 3 routes via the Low Fen Drove Way bridge following improvements.