

Project:	Lower Thames Crossing	Job No:	60549458
Subject:	Transport Appraisal – Southern Sites (Marling Cross Satellite Compound)		
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1. Introduction

- 1.1. Perfect Circle JV Limited (PCJV) has been appointed by Highways England Company Limited (Highways England) to perform Ground Investigation (GI) works for the Lower Thames Crossing (LTC) project. AECOM is a core member of PCJV and has been designated responsible for delivery of the investigation as Principal Contractor under a management contractor form of agreement.
- 1.2. The LTC will provide a tunnel crossing of the River Thames downstream of the Queen Elizabeth II Bridge at Dartford. This will entail the construction of a north/ south link road that will join the M25 between J29 and J30 near North Ockenden, cross the A13 at Orsett, then continue south under the River Thames via two 15.8m diameter bored tunnels and join the A2 east of Gravesend.
- 1.3. The complete project will involve construction of new highways, including cuttings, embankments, underpasses, overpasses, interchange enhancements and new technology; major tunnel construction, including ground treatment, logistic yards and power supplies; structures including bridge construction and demolition, site clearance, diversions and associated works.
- 1.4. A Main Compound will be set up to be used by PCJV as a logging and storage facility during the GI, with ancillary welfare facilities for the staff logging the cores. It is proposed to use an existing industrial unit at 10 Euro Court, Thurrock as the Main Compound and no construction works will therefore be required.
- 1.5. The project will also require several satellite compounds, located both north and south of the River Thames, to provide laydown areas for equipment used during the GI, as well as to provide welfare and office facilities for drilling and supervising staff. Site establishment activities will consist of installing new (or upgrading existing) hard-standing and placing portable cabins.
- 1.6. The operation of the GI package south of the river is intended to be run out of the Marling Cross satellite site.
- 1.7. This note addresses the transport requirements and potential impacts of the Marling Cross satellite compound (south of the river).

2. Report Purpose

- 2.1. The purpose of this note is to provide an appraisal in transport terms for submission to Gravesham Borough Council (GBC, the planning authority) and, if required, Kent County Council (KCC, as highway authority) with regard to the Marling Cross satellite compound which is proposed to be situated within Gravesham in Kent (to the south of the river Thames).
- 2.2. This note has been produced following scoping discussions held with Gravesham Borough Council on 22nd February 2019 and a pre-application meeting held in Wednesday 20th March 2019 and considers any potential site establishment or operational transport impacts arising from this compound during the GI of the LTC.
- 2.3. It should be noted that separate scoping discussions are anticipated to be held with Thurrock Borough Council (TBC) with regards to the main compound and remaining satellite compounds which are proposed to be situated to the north of the river Thames within Thurrock in Essex.

3. Site Location

- 3.1. The Marling Cross site is located on the edge of Gravesend, approximately 4km to the south east of the town centre. Site access is currently taken via the minor arm of a priority junction with Valley Drive to the northeast of the site. The site is bound by the site access road and a footpath to the north, Valley Drive to the east and open land to the south and west. The site is situated within very close proximity to the A2 Watling Street to the south and therefore has excellent access to the strategic highway network.
- 3.2. The location of the site is illustrated below in **Figure 3-1**.



4. Existing Site Use, Site Accessibility and Collision Record

Existing Site Use

- 4.1. The Marling Cross site currently consists of an area of hardstanding which has historically been used as a lorry park and therefore the existing site access road and priority T-junction with Valley Road is already suitably designed to accommodate the manoeuvres of HGVs (historic use as a lorry park) and the high traffic volumes expected with such a facility. The site is currently vacant and the site access road and junction with Valley Drive remains.

Site Accessibility

- 4.2. The nearest bus stops to the site are located on MacKenzie Drive and Valley Drive, approximately 250m and 350m to the north of the site access junction respectively. These bus stops are served by bus routes 455, Sapphire 490, G1, 735, 736, and 111 providing access to Milton, Gravesend, Bluewater and Dartford. Footways are provided between the site and the bus stops on Valley Drive.
- 4.3. A shared footway/ cycleway runs to the north of the site between Valley Road and Hever Court Road which forms part of the National Cycle Network (NCN) route 177. NCN177, in the vicinity of the site, runs off-road alongside the A2 Watling Street between Northfleet and Rochester.
- 4.4. It is therefore considered that the site is reasonably accessible by modes other than the private car and that there are therefore opportunities for staff to access the site by bike or bus.

Collision Record

- 4.5. Freely available data for the most recent three year period has been obtained from www.crashmap.co.uk for the routes between the A2 and the proposal site. The study area included the A2 eastbound off-slip, the A2 eastbound off-slip/ Hever Court Road roundabout, the A2 eastbound on-slip/ Valley Drive roundabout, the A2 eastbound on-slip and Valley Drive (including the Hever Court Road junction). The review found that two collisions have been recorded within the study area during the most recent three year period; one on the A2 eastbound off-slip/ Hever Court Road roundabout (resulting in serious injury) and one on the A2 eastbound on-slip/ Valley Drive roundabout (resulting in slight injury).
- 4.6. Upon review of the historic accident data it is considered that there is no evidence of any collision clusters along the routes between the site and the strategic highway network that could be exacerbated by the additional traffic associated with the proposals.

5. Site Establishment Phase

- 5.1. The following section provides details (in transport terms) of the anticipated site activities during the site establishment phase. The establishment phase is anticipated to last for six weeks prior to opening.
- 5.2. It should be noted, that the vehicular activity during the decommissioning phase is expected to be the reverse of the site establishment phase and is anticipated to last for six weeks after site closure.

Site Access

- 5.3. During site establishment, vehicular access to the proposed site compound will be via the existing priority junction site access on Valley Drive.

Site Establishment Working Hours

- 5.4. The proposed working hours of the site compound during the period of site establishment are as follows:
 - Mon-Fri 08:00-18:00
 - Sat 08:00-12:00, as a contingency.
- 5.5. Vehicles associated with site establishment will avoid travelling during the weekday peak hours as far as possible.

Site Establishment Vehicle Activity

- 5.6. A maximum of 20 Light Goods Vehicles (LGVs) are expected to travel to/ from the site compound per day, equating to a total of 40 two-way daily movements.
- 5.7. A maximum of 15 cars are expected to travel to/ from the site compound per day, equating to a total of 30 two-way daily movements. It will be ensured that all staff vehicles can be accommodated within the site, and therefore staff will not park on the surrounding roads.
- 5.8. A maximum of six Heavy Goods Vehicles (HGVs) are expected to travel to/ from the site compound per day during the site establishment stage, equating to a total of 12 two-way movements. These vehicles will typically comprise articulated vehicles/ low loaders transporting plant and equipment e.g. portable cabins. The level of HGV movements associated with the compound establishment is anticipated to be significantly lower than the previous/ permitted site use.
- 5.9. It is considered that the HGVs will be well accommodated by the geometry of the existing site access road and site access junction with Valley Drive, given the sites previous use as a lorry park; however it may be appropriate to aid infrequent larger vehicles safely out of the site access junction via a form of manual control (i.e. banksmen/ site staff).
- 5.10. Discussions were held between the AECOM transport planning team and the GBC Highways Officer in April 2019, during which it was agreed that it would not be appropriate to provide a signal controlled junction at this location given the low flows predicted and the potential for the signals to result in queues back to the A2 junction (and subsequent capacity/ road safety concerns).

- 5.11. The vehicle activity is expected to be spread throughout the day and therefore any impact on the local highway network with regards to junction capacity, particularly during the typical AM and PM network peak hours is expected to be negligible.
- 5.12. It is not envisaged that there will be any regular activities requiring abnormal loads. Any such movements, if required, will require special management.

Site Establishment Vehicle Routing

- 5.13. The site is situated within close proximity to the strategic highway network and it is envisaged that all vehicles associated with site establishment will travel directly to/ from the A2 by turning left in/ right out of the site access junction on Valley Drive (route shown on the plans held in **Appendix A**). It is anticipated that vehicles accessing / egressing the site will predominantly do so from the West via the A2. Given that the site has previously been used as a lorry park, it is considered that all vehicles associated with site establishment will be able to negotiate the existing junction layout safely.

6. Site Operational Phase

6.1. The application is to operate the site for a temporary period of up to two years.

Site Access

6.2. During site operation, vehicular access to the proposed site compound will be via the existing priority junction site access on Valley Drive.

Proposed Site Compound

6.3. The following will be provided at the site compound during the operational period:

- Car parking provision comprising 32 spaces for staff vehicles and visitors
- Double storey portable cabin units providing office/ welfare facilities (including a canteen, toilets, showers, and changing facilities).

6.4. An indicative plan showing the proposed site compound layout during the operational period is illustrated below in **Figure 3-2**.

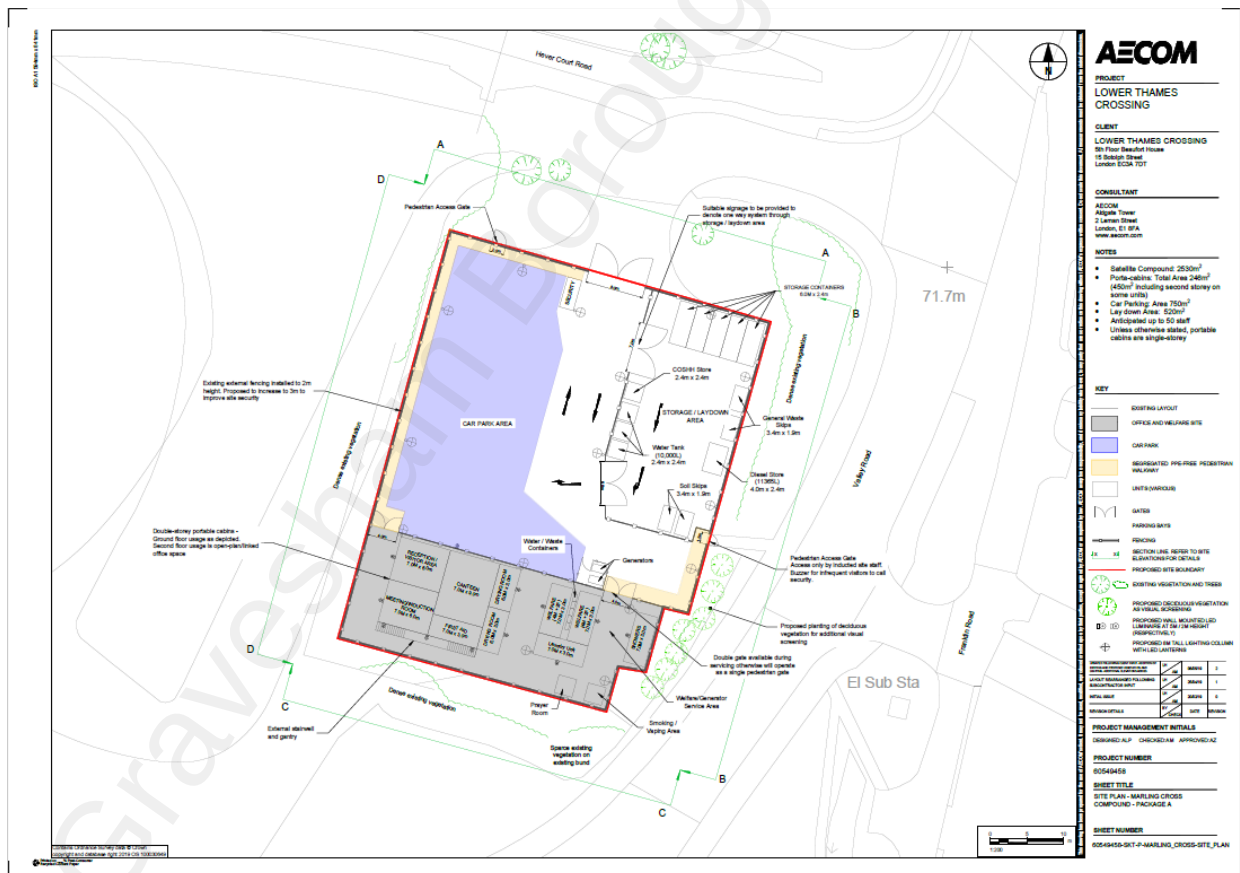


Figure 3-2: Proposed Compound Layout (Operational Phase) – Marling Cross

Operational Phase Working Hours

6.5. The proposed working hours of the site compound during the period of site establishment are as follows:

- Mon-Fri 08:00-18:00
- Sat 08:00-12:00, as a contingency.

Operational Phase Vehicle Activity

6.6. A maximum of 50 staff members are expected to travel directly to/ from the satellite compound on a daily basis. All staff members will be expected to travel by vehicle and due to the infrastructure of the subcontractor, most cars will have two people; therefore this level of car sharing will reduce the level of vehicular activity associated with the operation of the site.

6.7. The daily breakdown of the maximum level of anticipated staff vehicle trips has been provided below:

- 25 car arrivals between 07:30-08:00 (prior to typical AM network peak, based on two staff members per car)
- 25 car departures between 18:00-18:30 (after typical PM network peak, based on two staff members per car)
- As a worse-case scenario, it has been assumed that all staff will leave/ arrive back at the site at some point in the day (visiting another site, out for lunch etc.) resulting in an additional 25 departures and 25 arrivals (50 two-way trips) during this time (also outside of the peak hours).

6.8. It is therefore anticipated that all 50 staff (25 cars) will generate an absolute maximum of 100 two-way vehicular trips, the vast majority of which will be outside of the typical network peak hours. Therefore the impact of the additional trips on the highway network in the vicinity of the site during peak hours is expected to be minimal. This figure is considered to be robust given the provision of a canteen on site, and it is more likely that staff will car share for lunchtime trips.

6.9. A total of 32 car parking spaces will be provided to accommodate all staff vehicles and any visitor vehicles within the site. It is envisaged that 25 spaces will be made available for staff (to accommodate the maximum demand as outlined above) and that the remaining seven spaces will be provided for visitors. This will prevent staff and visitors from parking on the surrounding roads.

6.10. The potential for using alternative travel modes such as public transport has also been investigated in Sections 3.4-3.6 and it has been determined that staff would have the opportunity to access the site via sustainable modes and therefore the figures above are considered worst-case/ robust. It is therefore considered that the impact of staff related trips on the local highway network, particularly during the AM and PM network peaks, is likely to be minimal.

6.11. The site compound is expected to generate a maximum of 20 LGVs per day (40 two-way movements) and a maximum of one HGV per day (two two-way movements) during the operational phase. This level of vehicular activity is considered to be negligible and easily accommodated on the network with the majority of movements expected to take place outside of the typical network peak hours.

6.12. The site compound will operate under a one-way system which will be supported by suitable signage and road markings where appropriate. All vehicles will enter and exit the site in forward gear and vehicle manoeuvres will be managed by banksmen within the site. LGVs will navigate

the one-way system by turning left in/ right out of the storage/ laydown area. There may be a requirement for HGVs to reverse for a short distance when turning around within the site. This manoeuvre would be carefully managed by banksmen and no more than one HGV is expected to enter/ exit the site on any given day. It should also be noted that the level of HGV movements associated with the compound operation is anticipated to be significantly lower than the previous/ permitted site use.

Operational Vehicle Routing

- 6.13. The site is situated within close proximity to the strategic highway network and it is envisaged that all vehicles will travel directly to/ from the A2 by turning left in/ right out of the site access junction on Valley Drive (route shown on the plan held in **Appendix A**). It is anticipated that vehicles accessing / egressing the site will predominantly do so from the West via the A2. Given that the site has previously been used as a lorry park, it is considered that all vehicles associated with site operation will be able to negotiate the existing junction layout.

7. Summary

- 7.1. The Marling Cross site is situated within very close proximity to the A2 Watling Street to the south and therefore has excellent access to the strategic highway network. The location of the site within close proximity to bus stops/ frequent bus routes and NCN route 177 means that there are also opportunities for staff working at the compound to access the site via sustainable modes. There do not appear to be any collision clusters on the vehicle route between the site and the strategic road network which may be exacerbated by an increase in traffic associated with the scheme works.
- 7.2. During the site establishment phase it is considered that HGV vehicle activity will be minimal (6 HGVs per day/ 12 two-way HGV movements) and will be well accommodated by the existing site access road and site access junction with Valley Drive, given the site's previous/ current permitted use as a lorry park. A maximum of 20 LGVs/ 40 two-way LGV movements) will require site access during the establishment phase. The vehicle activity is expected to be spread throughout the day and therefore any impact on the local highway network, particularly during the typical AM and PM network peak hours, is expected to be negligible.
- 7.3. During the operational phase a maximum of 50 staff members are expected to travel directly to/ from the satellite compound on a daily basis. Reflecting the location of the compound, all staff members are anticipated to travel by private vehicle with the promotion of car sharing amongst staff expected to reduce the level of vehicular activity associated with the operation of the site. A maximum of 25 staff arrivals are expected in the morning (prior to the typical AM network peak), 25 staff departures in the evening (after the typical PM peak) and an additional 25 departures/ 25 arrivals throughout the day. This is likely to result in a total (worst-case estimation) of 100 two-way car trips associated with staff movements; the vast majority of which will be outside of the typical network peak hours. The impact of the additional trips on the highway network in the vicinity of the site during peak hours is therefore expected to be minimal.
- 7.4. A total of 32 car parking spaces will be provided to accommodate all staff vehicles and any visitor vehicles within the site. It is envisaged that 25 spaces will be made available for staff (to accommodate the maximum demand) and that the remaining seven spaces will be provided for visitors. This will prevent staff and visitors from parking on the surrounding roads.
- 7.5. The site compound is expected to generate a maximum of 20 LGVs/ 40 two-way LGV trips per day and a maximum of one HGV per day (two two-way movements) during the operational phase. This level of vehicular activity is considered to be negligible and the impact minimal given the majority of these trips will be undertaken outside of the typical network peak hours.
- 7.6. Where appropriate the movement of infrequent larger vehicles will be facilitated via a form of manual control (i.e. banksmen) to ensure that these movements are carried out safely at all times. All vehicles will enter/ exit the site in forward gear and no more than one HGV will be expected to enter/ exit the site on any given day.
- 7.7. It is therefore considered that the establishment and operation of the compound is not likely to have an adverse impact on the safety or operation of the highway network in the vicinity of the site.

8. Conclusion

- 8.1. This note provides an appraisal in transport terms for submission to Gravesham Borough Council (GBC, the planning authority) and, if required, Kent County Council (KCC, as highway authority) with regard to the Marling Cross satellite compound which is proposed to be situated to the south of the river within Gravesham in Kent.
- 8.2. The satellite compound will provide temporary laydown areas for equipment used during the GI, as well as to provide welfare and office facilities for drilling and supervising staff. Site establishment activities will consist of installing new (or upgrading existing) hard-standing and placing portable cabins.
- 8.3. This note considers any potential site establishment or operational transport impacts arising from this southern compound during the GI of the LTC. It is concluded that the establishment and operation of the Marling Cross compound, as proposed, is not likely to have an adverse impact on the safety or operation of the highway networks in the vicinities of the site.

Appendix A – Marling Cross HGV Routing Plans

Gravesham Borough Council

