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# East West Rail Phase 2

# Compound Construction

## Construction Traffic Management Plan

### Compound A1

### Network Rail



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# Document History

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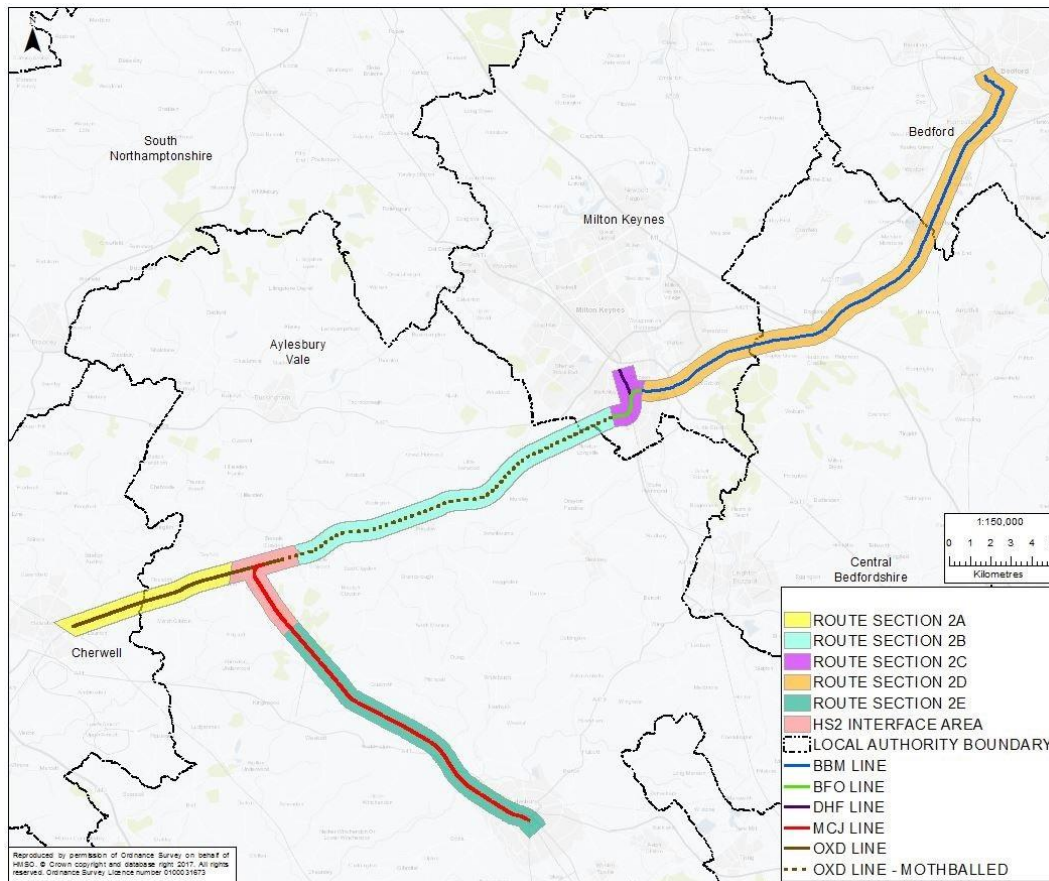
# 1. Introduction

- 1.1.1 Network Rail Infrastructure Limited (NR) has submitted The Network Rail (East West Rail Bicester to Bedford Improvements) Order application, under the Transport and Works Act 1992, for construction and operation of Phase 2 of the East West Rail (EWR) Project; this Order is herein referred to as the EWR2 TWAO or TWAO in brief.
- 1.1.2 The TWAO application has been accompanied by an Environmental Statement (ES) (The Network Rail (East West Rail Bicester to Bedford Improvements) Order Environmental Statement, July 2018), in accordance with The Transport and Works (Applications and Objections Procedure) (England and Wales) Rules 2006 (herein referred to as the Applications Rules).
- 1.1.3 The Project Area is within the boundaries of Oxfordshire County Council (OCC) and Buckinghamshire County Council (BCC) and comprises works along approximately 78 route km of existing railway or railway alignment, running between Bicester in the west to Bedford in the east, with a spur south to Aylesbury and a short spur north to Bletchley. The Project runs through the following local authority areas.
- Cherwell District Council (CDC), within OCC
  - Aylesbury Vale District Council (AVDC), within BCC
  - Milton Keynes Council (MKC), a unitary authority
  - Central Bedfordshire Council (CBC), a unitary authority
  - Bedford Borough Council (BBC), a unitary authority
- 1.1.4 This Construction Traffic Management Plan (CTMP) is a live document and will be reviewed on a regular basis to ensure that changes to the known road environment can be recognised and addressed at an early stage. This CTMP deals only with traffic impact from the construction of the compounds and does not seek to describe measures that will be used during the main project construction works, post authorisation of the TWAO. The principles outlined herein will form the basis for the detailed CTMP for main construction works.
- 1.1.5 This document addresses the systems and procedures that should be followed to warn, inform and guide traffic past, through or around all works related to project site. All workers, employees, subcontractors, employers and the management team, involved in the construction of the project shall adhere to this CTMP.

## 2. Compound Purpose and Composition

2.1.1 The Project has been split into six Route Sections based on geography, operation and construction programme and methods. This has been reflected in the structure of the Project ES. The Route Sections are 2A, 2B, 2C, 2D, 2E and the HS2 Interface Area. These Route Sections and the line references are illustrated on Figure 2.1.

**Figure 2.1: Route Sections**



2.1.2 Advance construction is proposed for eleven of the proposed Project strategic and satellite compounds:

- Four in Route Section 2A
- Six in Route Section 2B
- One in Route Section 2C.

2.1.3 Table 2.1 below sets out the compound reference number and the common name for each of the compounds considered under this CTMP.

**Table 2.1: Compound Number-Location-Type Matrix**

Compound Number	Compound Name	Compound Type
A1	Bicester	Strategic
A2	Launton	Satellite
A3	Marsh Gibbon	Satellite
A4	Green Lane	Satellite

Compound Number	Compound Name	Compound Type
B1	Steeple Claydon	Satellite
B2	Verney Junction	Satellite
B3	Furze Lane	Satellite
B4	Little Horwood	Satellite
B5	Newton Longville	Satellite
B6	Bletchley	Strategic
C1	Wellington Place	Satellite

- 2.1.4 Satellite Compounds will be designed to serve as primary assembly, storage and laydown areas for tasks and structures within the Route Section. Satellite compounds will have a smaller office and welfare footprint than strategic locations and are primarily control points for the day-to-day labour force. Small teams of staff will be based at these locations to control labour and project works.
- 2.1.5 Strategic Compounds will be used as primary control and coordination points for the project sections. As with the satellite compounds the associated labour force at these compounds will be used for the delivery of works at the adjacent sections of the Project. Strategic compounds will have more comprehensive welfare and support systems and functions in place such as Cafeteria, Nurse's station, Fuel Storage etc.
- 2.1.6 In order to enable compound set-up, initially, the access will be set up at the compound, including vegetation clearance of the highway and field boundaries, highway junction works and traffic control (where required). Following this, a range of works will be undertaken to construct the compound, install utilities and act as a base for equipment and staff.
- 2.1.7 Following construction of the compounds, preliminary activities will be undertaken from the compounds including:
- Vegetation clearance along the railway, where this has not already been undertaken as part of recent maintenance, if seasonally appropriate and in accordance with licences
  - Temporary highway works (passing bays and junction improvements)
  - Repair works to culverts and to bridges
  - Track and ballast removal
  - Environmental mitigation works where required
  - Delivery and movement of construction materials
  - Sorting and storage of materials arising from the preliminary works
- 2.1.8 If the TWAO is not made, then the Alliance will ensure removal of the advance works compounds and reinstatement (where needed) of the affected sites to equivalent to their original condition.
- 2.1.9 It is not proposed for all compounds to be under construction at the same time, although some overlap may occur between compound set ups.

## 3. Compound Methods of Working

- 3.1.1 The term 'traffic', wherever used in this CTMP, encompasses both vehicles and pedestrians movement.
- 3.1.2 Traffic management will be undertaken in a manner that will provide for the safety of all EWR staff, subcontractors and the public and ensure that road and footpath users are not exposed to foreseeable risks. During the construction period, traffic will be managed and integrated into the existing road highway network.
- 3.1.3 All work will be carried out during the working hours of 7am to 6pm on Mondays to Fridays and 8am to 4pm on Saturdays. Work undertaken outside these hours requires approval of the relevant statutory authority.
- 3.1.4 To ensure minimal disruption to the general public and work on site the control and management of traffic will involve the co-ordination and control of the following:
- All delivery vehicles and their loading and unloading.
  - Access to the project area by the staff and operatives
  - Vehicular and pedestrian traffic past the work area.
- 3.1.5 It is not practicable for this CTMP to cover all situations that could arise, it may therefore be necessary for the relevant person in control of the traffic management for a specific activity on site to modify the control measures to address the particular circumstances based on the hazard(s) identified.
- 3.1.6 Where possible, all deliveries will be planned to avoid peak hour traffic (morning and afternoon). Where and when possible delivery vans and vehicles entering/exiting site shall use the designated permitted route shown on the designated access route details in Appendix A of this document. All traffic controllers shall be suitably accredited and wear the required PPE at all times e.g. helmets, safety boots and high visibility vests etc.
- 3.1.7 Key personnel holding a duty of care for the planning and activities on site include:
- Management Team
- Section Delivery Lead
  - Construction CRE
  - H&S Adviser
  - Programme Logistics Manager
  - Section Logistics Manager
- Site Team
- Construction Manager
  - Compound Security
  - Supervisor / Foreman
  - Gateman and Vehicle Marshalls
- 3.1.8 The Works Foremen have responsibilities for two areas of traffic management, the Work Area and Employees under their control. Foreman shall ensure the following for each area of responsibility:
- Work Area*
- A documented traffic management risk assessment is completed by the Foreman and the procedures and control measures implemented on site.
  - Written permission is obtained from the relevant authority before any work in a road reserve is commenced by EWRA or a person working on behalf of EWRA.
  - Road users, pedestrians and EWRA staff can continue with their respective undertakings in relative safety and with the minimum of inconvenience.



- All site related works are correctly barricaded and sign-posted using the relevant approved signs.
- All signs and devices used are in good condition and are removed at the completion of the work.
- All site related works do not commence until all signage is in place, even in an emergency it is essential that safety is observed for both staff and road/footpath users.
- All lamps are:
  - Switched off during daylight hours.
  - Checked at night time to confirm they are working and correctly aligned.
- The CTMP is reviewed regularly to ensure it is still suitable.
- If any person is injured the incident is reported to the Project Manager and the relevant authorities.

3.1.9 In the event of an incident/accident, the following information is recorded using the Accident & Incident Reporting and Investigation Form Template:

- Names and addresses of those involved.
- Names and addresses of any witnesses.
- Actual types of signs and devices at the site.
- Photographs of signs and devices at the site at the time of the incident.
- Details of the surface and the width dimension of the travelled path.
- Details of any hazard at the site.
- Details of the prevailing weather.

## *Employees*

- Workers are competent to work on or near the roadways.
- Workers have a general awareness of traffic safety issues.
- Workers are informed of the public relations aspect of their work and instructed they should not allow themselves to be provoked by members of the public.
- Where required, all workers have access to and use the following safety equipment and PPE:
  - High visibility vest or shirt.
  - UV protection eyewear and sunscreen (SPF 30 standard or better).
  - Wide brimmed hat/ safety helmet.
  - Steel cap safety footwear.
  - Appropriate clothing to protect against UV radiation.
  - Hearing protection (where appropriate).
  - Eye protection (where appropriate).

3.1.10 A gateman / vehicle marshal will be appointed to control access to and from the site, this operative will be responsible for sighting oncoming traffic beyond any obstructions in visibility and ensuring oncoming traffic has slowed and is aware of any egressing vehicle. The gateman will also be responsible for ensuring that the condition of the access track and public highway is not affected either by increased use or deposits of mud or debris from the work site. The gateman will be responsible for contacting the supervisor should the provisions in place (see section 2.1.2 of this CTMP) to prevent this become insufficient. The gateman will be required to wear highway compliant high visibility clothing and a detailed risk assessment and task briefing will be developed for this operation.

- 3.1.11 All other operatives carrying out work activities on or immediately adjacent to the site will:
- Take reasonable care for their safety and that of those around them.
  - Follow the applicable requirements of this CTMP.
  - Prior to proceeding with any work, contact their supervisor or a EWR Site Management Team member for clarification of any requirement applicable under this CTMP, if they are uncertain of what is required or how it is implemented.
  - Wear high visibility vest or shirt where required under this CTMP.
  - Always obey the applicable road rules for pedestrians and drivers.
  - Always follow safe driving practices, including using the correct thoroughfare in accordance with any posted speed limits and safety requirements in a manner that does not put at risk their safety or that of any other persons (e.g. passengers, fellow workers or members of the public).
  - Parking will be within the site works area, no parking will be permitted on the street or in community centre car parks. All parking will be as per parking signs and rules and avoid creating any form of safety hazard when parking or parked within the site.

## 4. Compound Entry, Exit and Manoeuvring Procedures

- 4.1.1 **Access Control:** A gateman / vehicle marshal will be appointed to control access to and from the site, this operative will be responsible for sighting oncoming traffic beyond any obstructions in visibility and ensuring oncoming traffic has slowed and is aware of any egressing vehicle
- 4.1.2 The gateman will be required to wear highway compliant high visibility clothing and a detailed risk assessment and task briefing will be developed for this operation.
- 4.1.3 All deliveries of plant, materials and structures to the compound will be booked in/out via the logistics management system explained in Section 11 of this CTMP.
- 4.1.4 **Visibility Splays:** The visibility spays are sufficient for the speed of the road/roundabout. Hedge lines will be kept trimmed / flailed back where required to ensure that the visibility splays can be achieved.
- 4.1.5 A dedicated Site Security Guard will be in control of the site access security to ensure no members of the public can enter the site. A detailed Risk Assessment and Task Briefing sheet detailing these works will be developed by the contractor to ensure the safety of all site personal including the gateman.
- 4.1.6 **Vehicle Manoeuvring:** The access points will be designed to ensure that no vehicle entering the site is restricted in pulling fully off the public highway. An allowance within the works site will be made for all vehicles to park, unload and manoeuvre so that all egressing vehicles are able to pull out of the access road in a forward direction. There will be no reversing onto the local road.
- 4.1.7 **Advanced Warning Signage:** During the works the access will be used to a slightly higher intensity to what the local highway users are used to. To ensure that public highway users are aware of the site access and slowdown in advanced of the access signage will be placed warning of the access point. Signage consisting of 'SLOW DOWN' and 'SITE ACCESS AHEAD' will be set in accordance with Section 3 for this CTMP.
- 4.1.8 **Highway Debris:** The gateman will also be responsible for ensuring that the condition of the access track and public highway is not affected either by increased use or deposits of mud or debris from the work site. To prevent mud and debris accumulating out on the local road the access point / track will be stoned / repaired / reinstated in any areas that pot-holes have formed or areas that are not currently stoned, in addition a parking area will be formed with hard standing. This will ensure that the daily vehicles entering and exiting site do not access onto loose ground where mud and debris can accumulate on the vehicle and be transported off site and onto the road.
- 4.1.9 Plant and vehicles that need to work within site and are likely to accumulate mud will not exit the site until they have been washed down on site with wheel wash and inspected to ensure the wheels and wheel arches are clean and clear of debris. In addition, there will be a road sweep on call should it be required to clean and maintain the road.

## 5. Construction Access Routes

- 5.1.1 Due to the extent of the Project several Construction Access Routes will be used by road vehicles to access compounds and works areas. Construction traffic will comprise both Heavy Goods Vehicles (HGVs) (over 7.5 Tonne) and Light Goods Vehicles (LGVs) (under 7.5 Tonne), carrying materials and staff to and from the proposed compound construction areas. The Construction Access Routes that will be utilised are illustrated in Appendix A.
- 5.1.2 In accordance with DfT principles for the selection of Primary Route Networks, the Construction Access Routes have considered:
- the directness of the potential routes
  - the standard and capacity of the potential routes
  - the environmental surroundings of each highway
- 5.1.3 During the assessment and selection of the proposed construction access routes the EWR Alliance have considered: height and weight restrictions, road layout, where possible to avoid sensitive receptors (schools, churches, equestrian areas and areas of high pedestrian movements), visibility constraints, restricted access, junctions at or near capacity during peak periods, gradients and consultation feedback from the community and LHA.
- 5.1.4 In addition to the above considerations EWR Alliance has also considered the impact that other committed developments will have on the local highway network and how the construction traffic will interact with these. For example, EWR Alliance has considered the impact that HS2 will have on local highways (road closures and proposed traffic generation).
- 5.1.5 Due to the rural location of the Project it is not possible to restrict construction access routes to trunk and major A roads, therefore the construction access routes also use the rural network of B roads, C roads and Unclassified roads.
- 5.1.6 Where reasonably practicable, the Construction Access Routes avoid the rural villages and passing residential frontages. At roads and junctions where physical constraints mean that considerable works would be required to provide clearance for HGVs, these routes have been prohibited.
- 5.1.7 Construction Access Routes to each construction compound have been proposed, which are designated roads that HGVs and LGVs can use to access construction compounds. The staff and operative car trips have been assigned to the whole road network rather than along Construction Access Routes. It is recognised that specifying car trips along designated routes is not practical and cannot be enforced, although the workforce will be encouraged to use designated routes.

## 6. Parking

- 6.1.1 All parking for compound staff and operatives will be on site only. At no time will any EWRA personnel, including contractors and vendors, be authorised to park outside of the site boundaries unless prior permission has been granted by either the relevant land owner or the local authority.
- 6.1.2 This will be managed by establishing a clearly identified temporary car parking area at the very beginning of the compound construction start.
- 6.1.3 Further efforts will be made to encourage and provide alternative collective methods of transport to staff and operatives from local transport hubs such as nearest train stations wherever practicable.

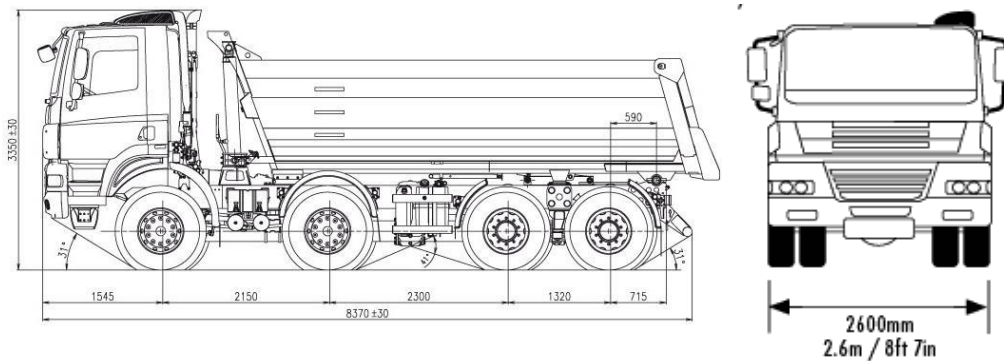
## 7. Standards

- 7.1.1 The EWR2 project aims to achieve the Whole Team Award in CEEQUAL, which is the evidence based sustainability assessment, rating and awards scheme for civil engineering, infrastructure, landscaping and public realm projects.
- 7.1.2 The minimum standard of vehicles that any vendor shall use to supply EWR2 is membership and certification within the FORS scheme.
- 7.1.3 All Site Security Staff shall be SIA licenced officers.
- 7.1.4 All construction staff shall hold an appropriate CSCS or PTS certification.
- 7.1.5 All Traffic Management personnel shall be LANTRA qualified.

## 8. Vehicle Types Used for Construction

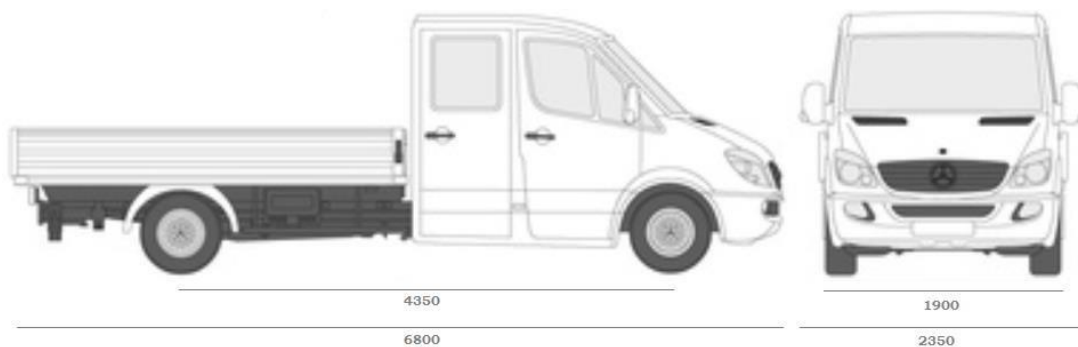
- 8.1.1 HGVs are any vehicle over 7.5t. For the movement of bulk or large materials, these are likely to be predominantly 40t 4-axle wagons delivering granular materials and concrete as shown in Insert 1, but also include some other HGVs such as 40ft articulated lorries, low loaders delivering plant and extendable trailers delivering Pre-Cast Concrete (PCC) elements.

**Figure 8.1: Typical 40t HGV for Granular Materials**



- 8.1.2 LGVs are any vehicle up to 7.5t excluding cars. They will be used to move small plant and materials around site as well as minibuses to move site operatives. These movements will predominantly be 3.5t and 5t dropside rigid pickups with crew cabs, as shown in Insert 2.

**Figure 8.2: Typical 5t LGV Site Pickup**



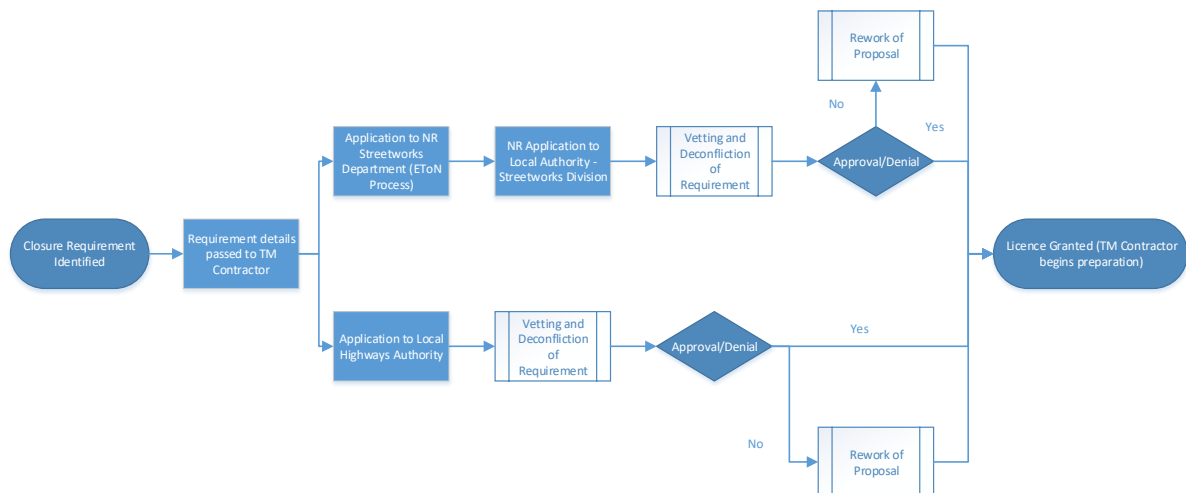
- 8.1.3 Other vehicles that will be used are 50T-70T mobile cranes which vary in size but are generally suited for most common roads.

## 9. Public Rights of Way

9.1.1 Any Public Rights of Way that are directly affected due the construction of the compound(s) will be closed or managed via the Electronic Transfer of Notice (ETON) process that Network Rail have already in place across the country with all LHA.

9.1.2 The ETON process is laid out as below:

**Figure 9.1: ETON Process flowchart**










9.1.3 Any ProW so identified and closed would remain closed only for the minimum duration required to ensure that there is no hazard due to compound construction activities or traffic to or by the public. Close coordination with the relevant Local Authorities would be maintained to ensure that local communities are adequately warned of impending closures and where practicable, mitigating measures emplaced.

# 10. Traffic management on routes used

## 10.1 Traffic Management Principles

- 10.1.1 This CTMP does not seek to address any traffic management required due to offline highways improvements and focusses solely on works in and adjoining the compound.
- 10.1.2 The establishment of the compounds will require adjustment to the entryways (bell mouths) of the proposed entry points. This will necessitate traffic management of both normal users of the highway but also increased control of construction traffic itself accessing and egressing the entry point.
- 10.1.3 EWRA will employ a professional and specialist Traffic Management contractor to ensure the highest standards are maintained. The guiding principles for traffic management activities is first the health and safety of all affected and secondly the minimisation of inconvenience to all affected.
- 10.1.4 Basic communication requirements of CTMPs will be to provide:
  - Advanced warning of a change in traffic conditions in time for the users to adjust.
  - Information and Guidance as to where to go to safely negotiate the work site. That is delineation of travel path and its separation from the work site and any necessary barricading.
- 10.1.5 Typical signage and barriers used in temporary traffic management scopes include the following methods. It may also be required to use temporary traffic lights or a temporary reduction in the normal speed limit. For all these activities, the same ETON process as used for PRoW will be used to provide close liaison, permission and ongoing communication and coordination with the local highways authorities.

**Figure 10.1: Common equipment and measures used for traffic control**

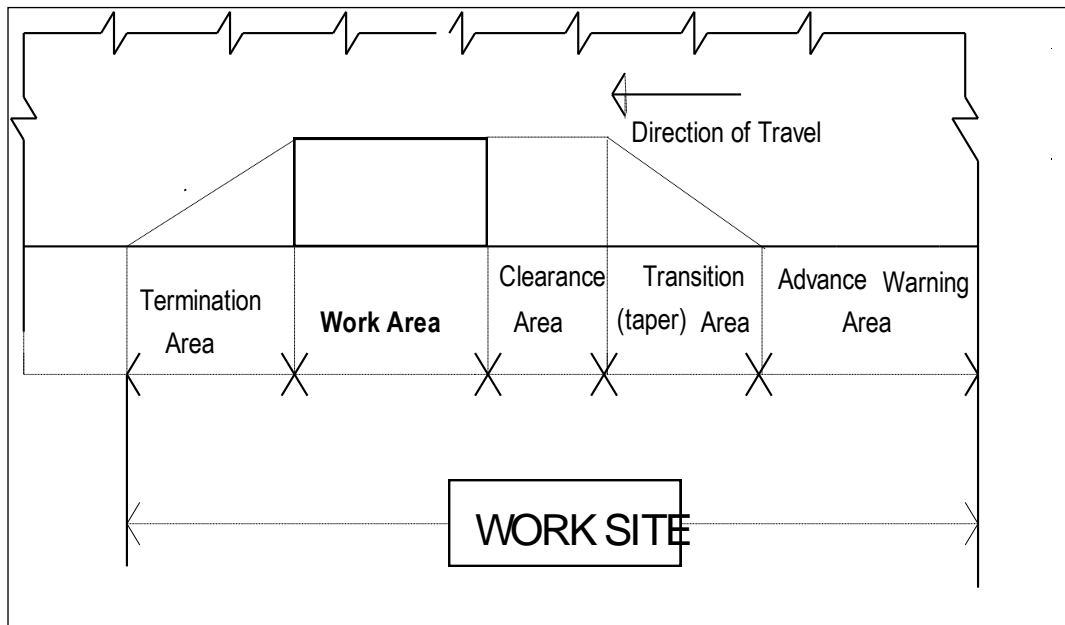
Pedestrian Barrier	Heras Fencing	Chapter 8 Barrier	VMS Advanced Warning Sign
			
Road Closed Sign	Footpath Closed Sign	Footpath Diversion Sign	Traffic Marshall/Banksman
			

## 10.2 Road Control Principles

- 10.2.1 The figure below illustrates a typical road works control layout plan for a work site. EWRA's Senior Construction Manager/Relevant Foreman shall ensure that those components that are relevant to their work site are identified and the appropriate traffic management scheme applied in each particular case.



**Figure 10.2: Typical Road Works Control Layout**



- 10.2.2 Approach Taper Partially Closed Lane: If a roadway has to be partially closed, an appropriate taper should be marked in the transition (taper) area and, wherever possible, should be located so that its full length is visible to approaching traffic.
- 10.2.3 Traffic cones or bollards are used after the appropriate advance signs on the approach side of the hazard, forming a taper from the kerb to the outer limits of the clearance area. Table 10.1 below provides a guide to the recommended taper length for two-lane, two-way roads to be closed for various approach speeds based on a lane width of 3.5m.

**Table 10.1: Road Control Taper Lengths**

Taper Lengths			
RECOMMENDED TAPER LENGTH			
Approx. Approach Speed	Traffic Control at Beginning of Taper	Diverge Taper	Merge Taper
less than 60 km/h **	15 m	15 m	30 m
60 to 80 km/h	30 m	70 m	140 m
81 to 100 km/h	30 m	90 m	180 m
More than 100 km/h	30 m	100 m	200 m

\*\* - Typically a low speed residential or commercial street.

- 10.2.4 The distances in the columns in the Table 10.1 are applied as follows:
- Traffic control at beginning of taper: Applicable at a location where there is a traffic controller just prior to a diverge e.g. into a single lane that is being controlled by a controller.
  - Diverge taper: Applicable where traffic is simply required to shift laterally without conflict with another stream of traffic.
  - Merge taper: Applicable where one lane of traffic is required to merge onto another lane of traffic.

## 10.3 Delineation at Work Site - Travel Paths

- 10.3.1 **Delineation of the Travel Path:** Suitable, adequate and appropriate delineation of the travel path is perhaps the greatest need of road users. To give satisfactory guidance for road users, traffic control measures shall provide for both short and long-range delineation for the travel path and must be continuous and unambiguous. Long-range delineation provides drivers with an advance view of the site indicating the general direction of the trafficable path and short-range delineation guides the driver through the works once they have entered. Depending on the circumstances, movement of traffic in connection with a work site shall be achieved in one of the following ways:
- Through the work area.
  - Past the work the area.
  - Around the work area by a detour which may be via a side track or an existing road.
- 10.3.2 **Through the work area:** Unless there is no practicable alternative, passage through a work area shall only be considered on lightly trafficked roads and where traffic and the work can be satisfactorily controlled so that the risk any person on site and traffic is kept as low as possible.
- 10.3.3 **Past the Work Area:** Where the traffic is conducted past the work area there needs to be a minimum distance of 1.2m clearance between the edge of the work area and the edge of the travel path as a no-go buffer zone. This clearance shall be defined on both sides of the travel path to avoid inadvertent intrusion by any persons and shall be provided by the use of containment fences such as barrier tapes, mesh fences, interconnected lightweight units or bollard fences.
- 10.3.4 **Around the work area:** When it is not practical to allow traffic through or past the work area it may be catered for by means of either a detour using existing roads or a specially constructed side-track. This practice, in general, would require the advice from the relevant road authority.

# 11. Traffic Signage and Control

## 11.1 Principles of Signing:

11.1.1 EWRA's Senior Construction Manager/Relevant Foreman shall ensure no matter how brief the work site is occupied careful consideration is given to signing of the site to:

- Provide advance warnings to drivers of changes in the surface of the roadway and/or in the changed traffic conditions and that personnel and/or plant are engaged in work.
- Adequately instruct and guide traffic safely through, past or around the work site.
- Provide separation of the travel path and the works area.

11.1.2 EWRA's Senior Construction Manager/Relevant Foreman shall ensure the following important principles are observed regarding traffic management signage:

- Signs and devices comply with those listed in Traffic Signs Manual Chapter 8 parts 1 and 2.
- Signs and devices will be erected and displayed before work commences.
- On approaches to the work area signs are erected in the following sequence and then removed in the reverse order.
- Advance warning signs.
- Other warning signs.
- Instruction signs
- Signs are placed within the driver's line of sight and at the same time not obscure other traffic devices from the driver's line of sight.
- All signs and devices are placed in the most advantageous positions having regard for the location and nature of the hazard, and the warning being conveyed, to provide the maximum visual impact for approaching traffic. Such signs and devices shall have an adequate clear view in advance of them (minimum 50m for 60 km/h, minimum 100m for 100 km/h).
- Signs and devices are placed in a manner and position, so they are not obscured from view by vegetation or parked vehicles.
- Signs and devices are placed in a manner and position so as not to become a possible hazard to workers, pedestrians or vehicles (e.g. divert traffic into an undesirable path).
- Signs and devices shall be regularly checked for effectiveness and maintained in a satisfactory condition.
- Signs and devices are selected and placed in a manner so as not to require a driver to disobey a law unless so directed by an authorised officer such as a police officer.
- Permanent signs which conflict with the signs required for the temporary work situation are covered or removed.
- Signs and devices are removed from the site when practical once the hazard ceases to exist. This not only restores the road/footpath to normal but is also an essential part of maintaining the credibility of the signs.

## 11.2 Erection and Location of Signs:

11.2.1 EWRA's Senior Construction Manager/Relevant Foreman shall ensure:

- All road signs are used with approved stands or erected on posts set into the ground, where permitted by the relevant authorities.
- All signs are placed in the most advantageous position, having regard for the nature of the hazard and the warning being conveyed, to provide the maximum visual impact for approaching drivers.

11.2.2 Where signs are erected on posts set into the ground the following applies:

- On un-kerbed roads in rural areas the sign should be at least 600 mm clear of the outer edge of the road shoulder, line of guide posts or face of the guard measured towards the property boundary. The clearance should not be less than 1m nor more than 5m from the edge of the travelled way and the height of the sign should be 1.5m above the nearest edge of the travelled path.
- On kerbed roads signs should be located back from the face of the kerb not less than 300 mm no more than 1.0m. On urban roads that are not kerbed the distances given for rural areas above should apply. The height of the sign should be about 2.2m above the kerb or footpath to reduce the interference from parked cars.
- Where the signs are erected on temporary stands for short term work they should be erected on the road shoulder in un-kerbed areas no closer than 600 mm to the running lane. In kerbed areas the provisions outlined above for post-mounted signs shall be followed.

## 11.3 Advance and Intermediate Advance Warning Signs

- 11.3.1 Advance and Intermediate Advance Warning Signs alert approaching vehicles of changed road conditions, so road users may negotiate any travel path at an acceptable level of risk.
- 11.3.2 For EWRA purposes the Advance Warning Signs are limited to:
- Workers Ahead
  - Roadwork Ahead
  - Site Access Ahead
- 11.3.3 Intermediate Advance Warning Signs are used where, in addition to a general warning of the onset of the roadworks, a warning is needed either of a specific action of a driver or of the condition of the road. The intermediate advance warning signs for EWRA purposes are:
- Diversion Ahead
  - Prepare to Stop
- 11.3.4 The minimum distance for positioning of the advance warning signs shall be as determined in Chapter 11 traffic signs manual and shown on the Traffic Management drawing produced for the work. The distance shall be measured from the sign position to the beginning of the taper area or the beginning of the diversion associated with the work site.
- 11.3.5 Advance Warning signs for vehicular traffic are not required in the following situations:
- Where work is sufficiently remote from the roadway that no action or extra vigilance is required of a driver other than would be normally required on that section of road.
  - Where approach speeds are so low that no devices are needed to give advance warning i.e. signs and devices can be seen in plenty of time for drivers to take necessary action.

## 12. Abnormal Loads

12.1.1 For the purposes of construction of the compounds no abnormal loads are currently foreseen. Should detailed design of the compounds prove otherwise, these will be subject to movement orders. Figure 13.1 sets out the requirements for a movement order. Where a movement order is required that conflicts with the Construction Access Routes, the movement order will take precedence. Abnormal loads will generally be routed overnight to minimise conflict with other road users and in addition an escort vehicle will travel ahead of the load to hold oncoming traffic at suitable passing points.

**Figure 12.1: Movement Order Requirements**

Limitation	Police Notification	Road and Bridge Authority Notification	Attendants Required (STGO)	Escorts Required (EWR)
Gross weight exceeding 44000kg but not exceeding 80000kg	No	Yes - 2 clear days notice	No	No
Gross weight exceeding 80000kg	Yes - 2 clear days notice	Yes - 5 clear days notice	No	No
Length of vehicle including any forward or rearward projection exceeds 18.75m	Yes - 2 clear days notice	No - unless other Limitation applies	Yes	Yes
Length of any projection exceeds; forward 2m or rearward 3.5m	Yes - 2 clear days notice	No - unless other Limitation applies	Yes	Yes
Vehicle with load width of 3m or less, but width of load projecting at one side exceeds 0.305m	Yes - 2 clear days notice	No - unless other Limitation applies	No	No
Vehicle with load width exceeding 3m, including any projections	Yes - 2 clear days notice	No - unless other Limitation applies	No	Yes
Width exceeds 3.5m including any projection	Yes - 2 clear days notice	No - unless other Limitation applies	Yes	Yes

## 13. Logistics Management Specifics

13.1.1 It is planned that all logistics for compound construction and subsequent operations will be scheduled, routed and controlled via a logistics management system such as Voyage Control. This will allow for the precise routing of individual delivery loads and vehicles, clear time slot and prioritisation control, clear measurement of vendor compliance and performance and identification of source and destination of individual loads.

13.1.2 The benefits of using such a system are the ability to respond rapidly to queries relating to:

- Routing
- Punctuality
- Sustainability performance
- Damage or complaints by the public due to EWR vehicle behaviour
- Deconfliction with other works in the same area
- Precise control of when and where individual loads will arrive with the associated ability to minimise and eliminate stacking of vehicles on the highway.
- Maintenance of standards

## Appendix A. Construction Access Routes

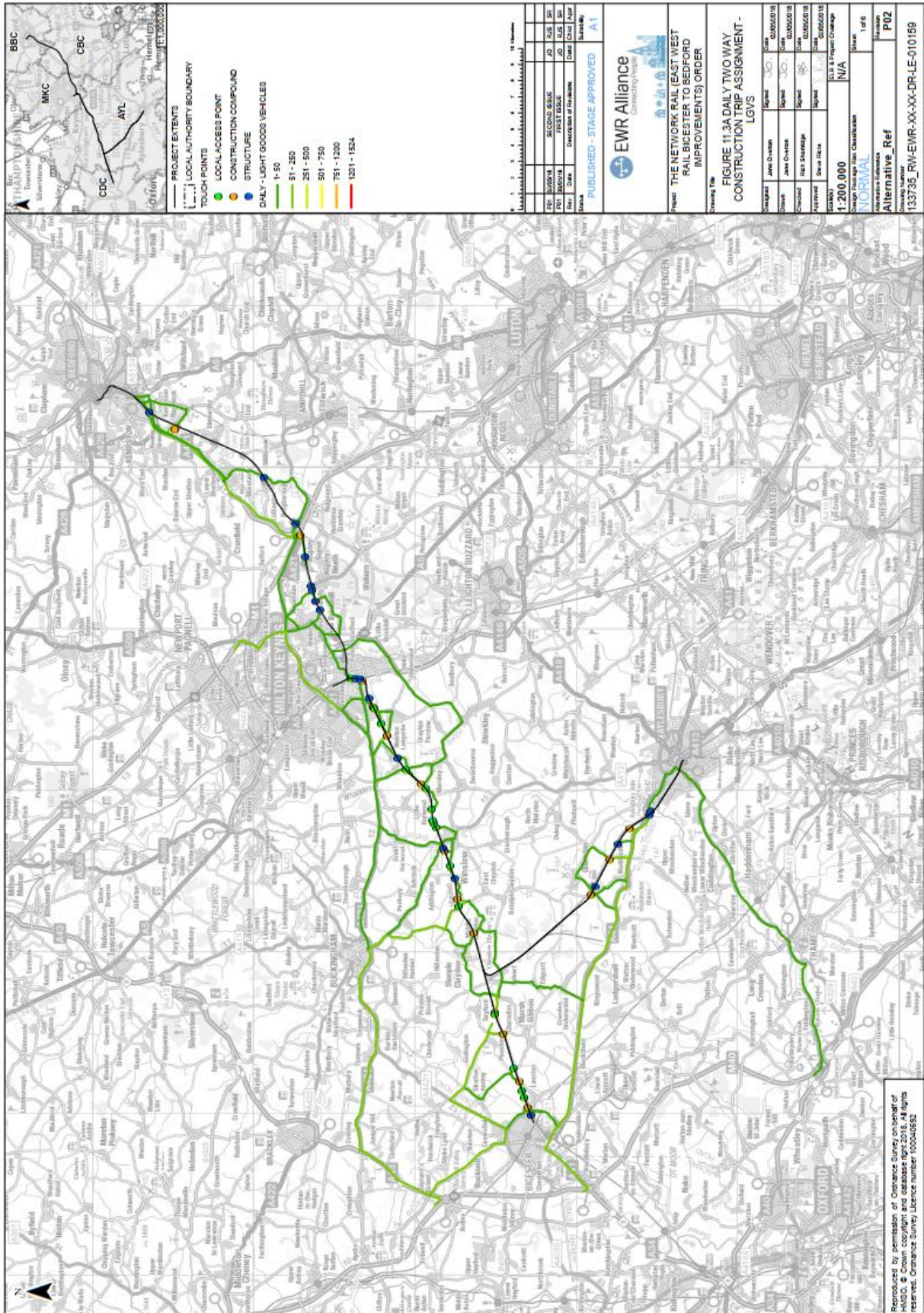
- A.1.1 The following maps describe the proposed HGV, LGV, Staff and Operatives routes to the compounds as set out in the TWAO. The evaluation of route impact is for main construction works on the railway itself and therefore predicted traffic flow for individual compound construction is a fraction of main works numbers. These individual compound evaluations are described within further appendices relating to specific compounds.





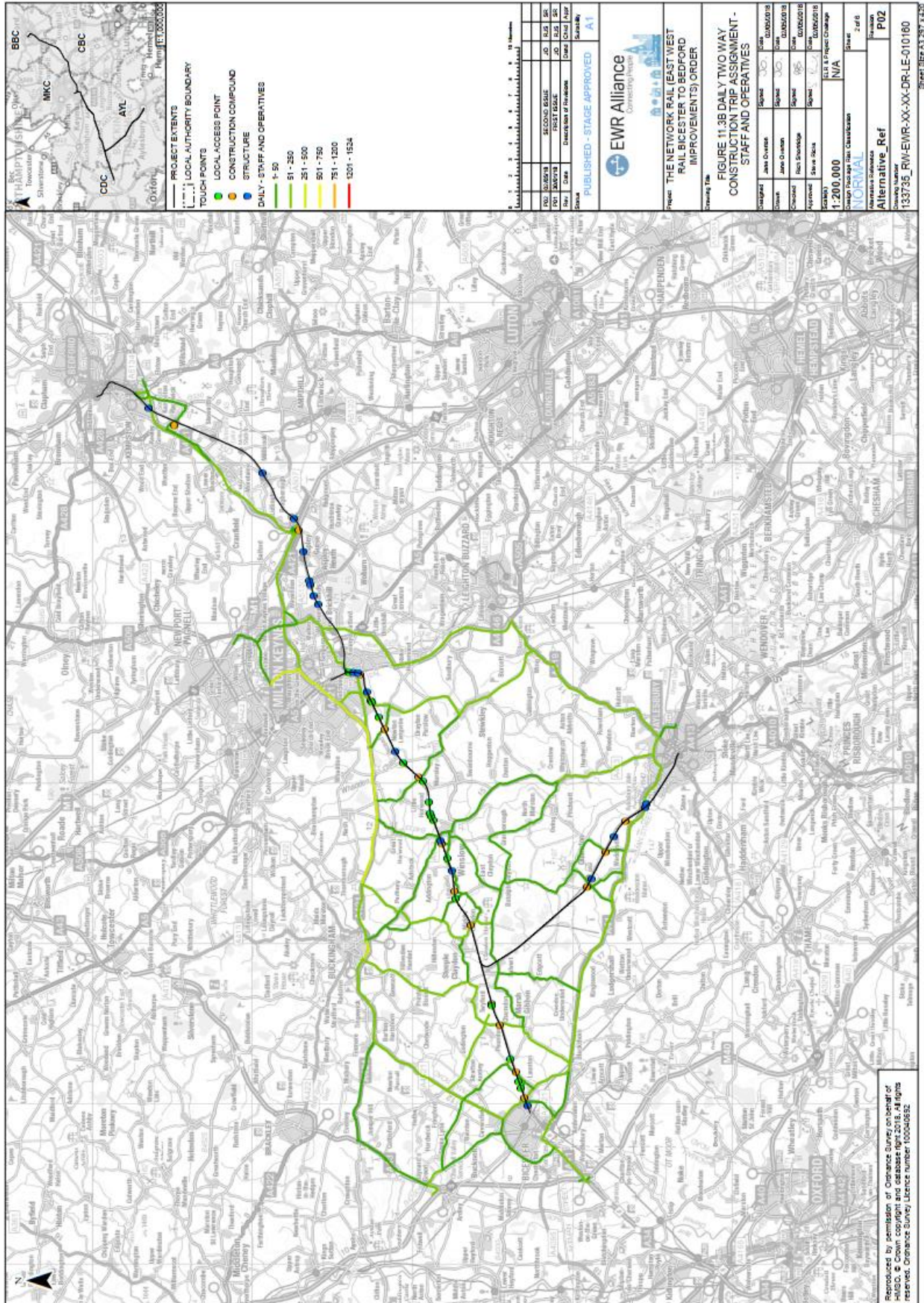


### A.3 LGV Access Routes





## A.4 Staff/Operative Access Routes





## Appendix B. Compound A1 Specifics

### B.1 Proposed Routes for Compound Construction

- B.1.1 The figures below show the local area around the planned entrance of compound A1/Bicester. Both during compound construction and during main works construction the main HGV routes used for access to the compound are along the A4421 from the North-West or via Charbridge Lane from the South-West. Both these routes lead to the M40 arterial route. The routes converge on the roundabout shown in Figure 4 and then followed along Bicester Road, Launton for a short distance before the compound entrance. This route will need to be shared by LGV vehicles.
- B.1.2 The compound will be constructed by accessing it off the entrance way on Bicester Road, Launton Village. During compound construction a further access point will be established onto the Trace which will be the primary HGV access point to be used during main works construction. As explained earlier, both in this CTMP and in Appendix 2.2, Volume 3 of the Environmental Statement to the EWR2 TWAO, abnormal loads during construction will be dealt with on a case by case basis.

**Figure F.1: HGV and LGV routes to be used for compound construction traffic**

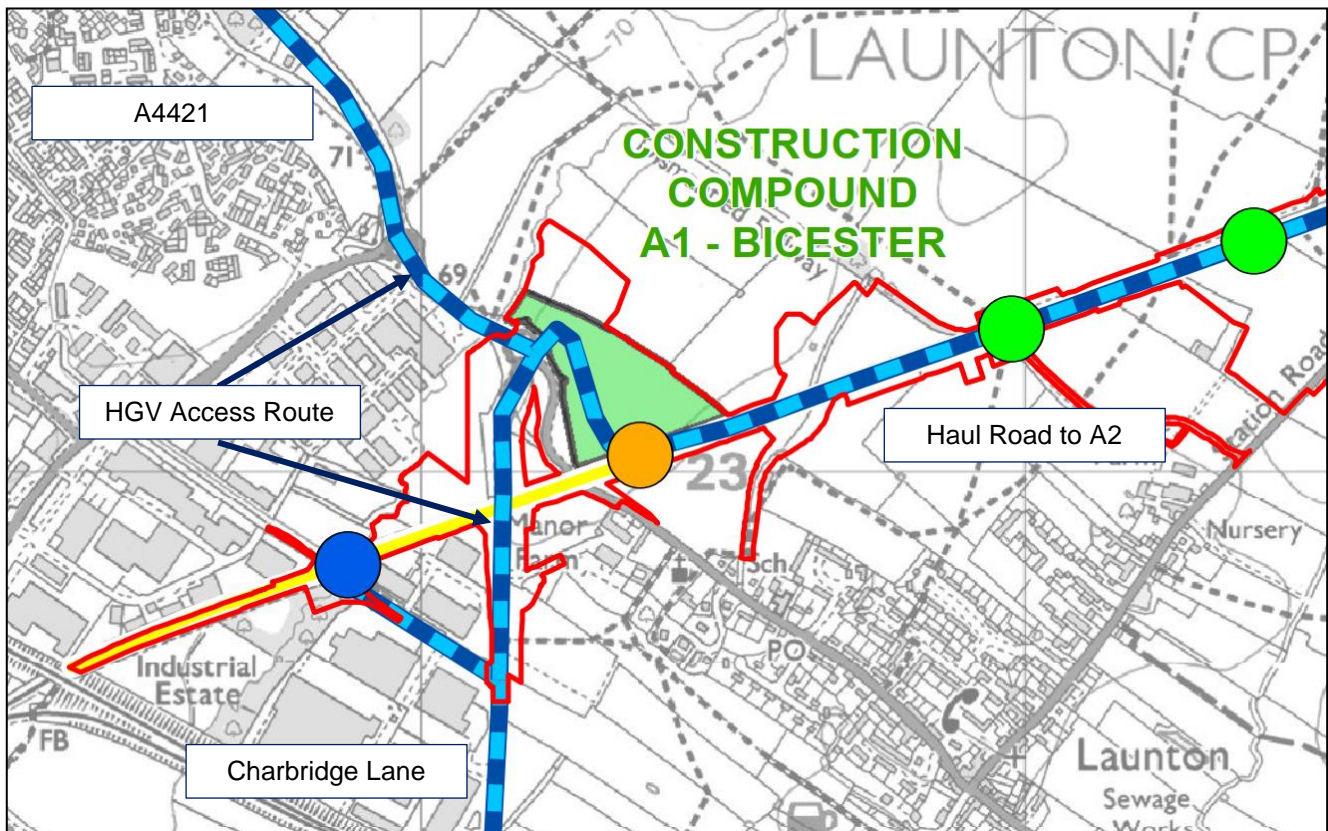
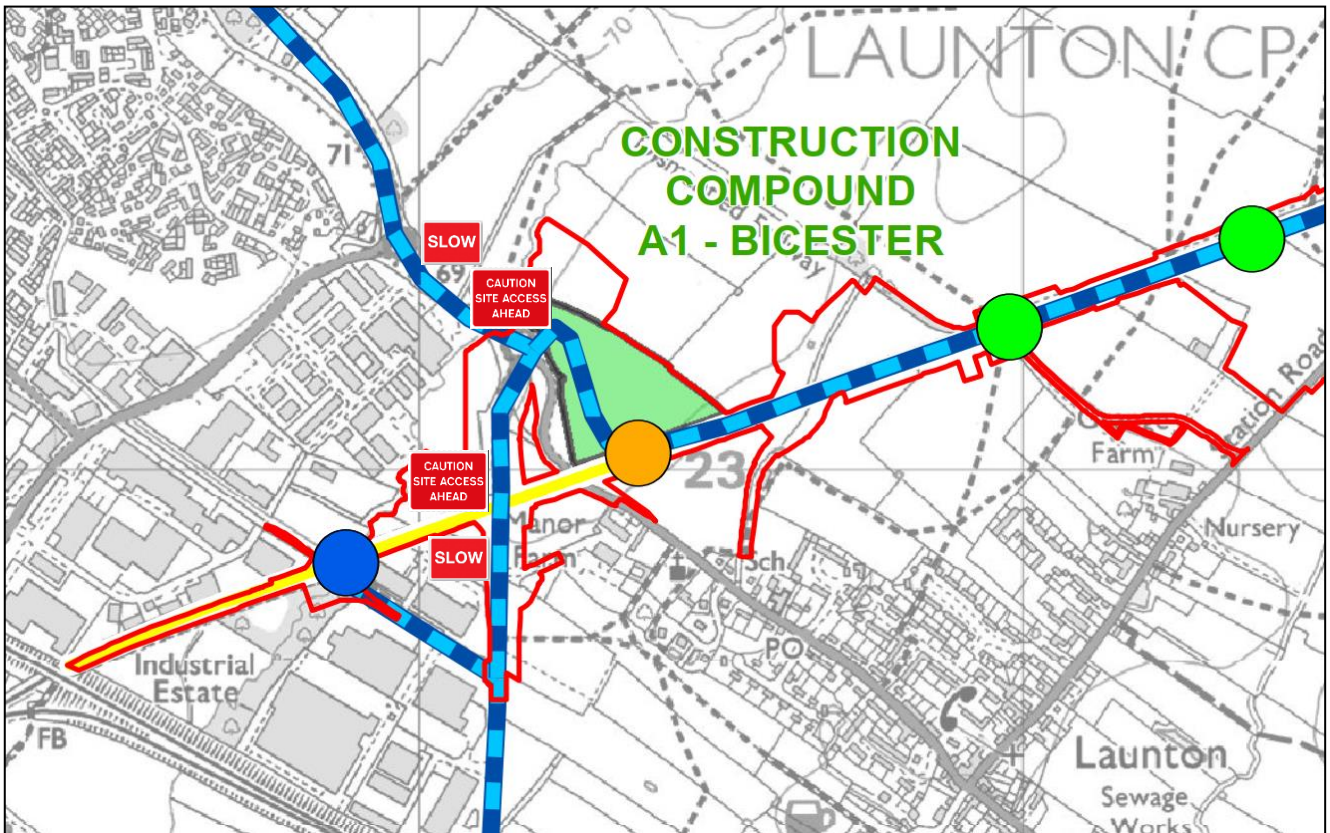
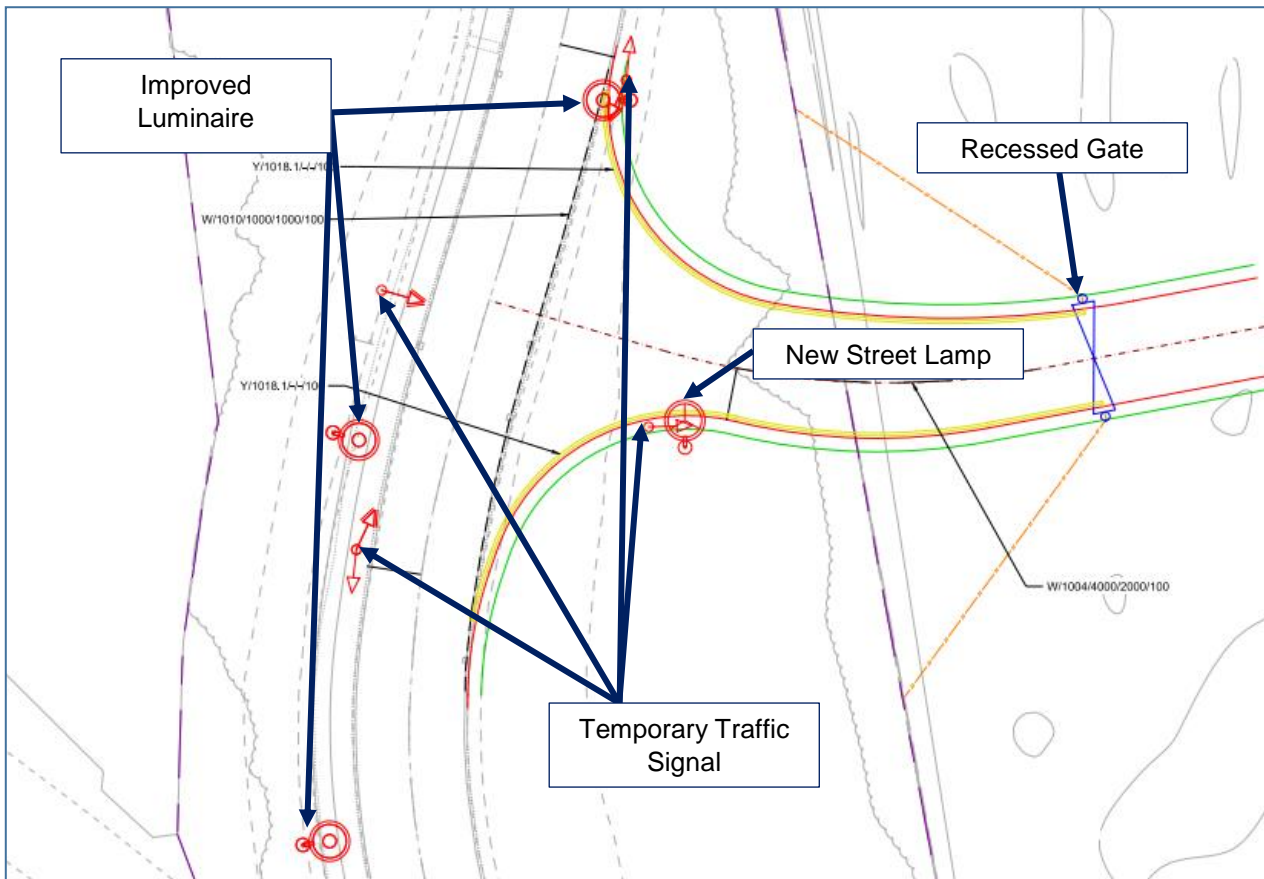


Figure F.2: Proposed warning signs locations

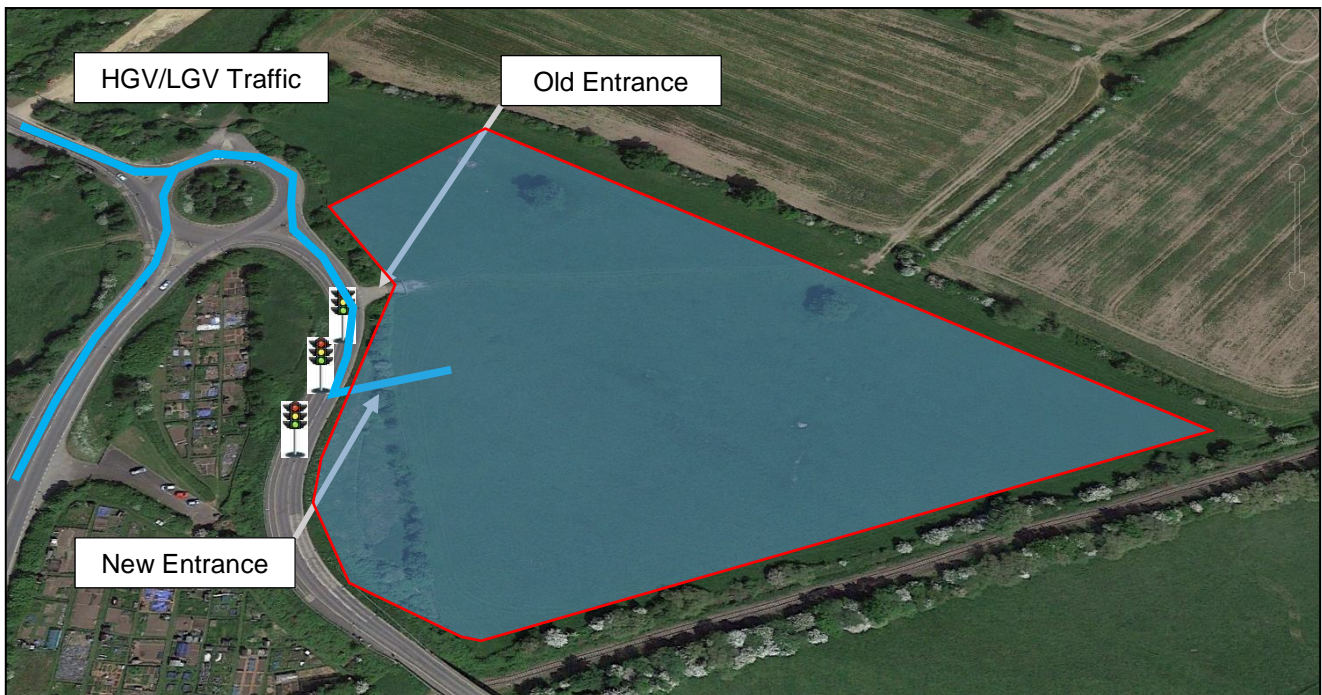




**Figure F.3: Proposed Traffic Signals and Luminaire Improvements for A1/Bicester compound**



**Figure F.4: Proposed entrance way for A1/Bicester compound (indicative)**



**Figure F.5: Proposed entrance way for A1/Bicester compound**



## B.2 Planned Traffic Volume for Compound Construction

B.2.1 The table below describes the predicted number of construction vehicles to expected during the construction of the compound only. It does not reflect future flows of traffic, which are described in detail within the TWAO ES.

**Table B.1: Daily trip generation for compound A1 (two-way vehicle trips)**

Activity	Daily Two-Way Vehicle Trips			
	Staff and Operatives	LGVs	HGVs	Total
Main compound set up	127	60	36	223
Preliminary works	87	40	12	139

## B.3 Specific Works to Compound

B.3.1 Compound A1/Bicester is a strategic compound and is planned to handle higher volumes of traffic. This is why the proposed Streetworks improvements and temporary traffic lights have been proposed at the new entrance point. Vehicle tracking has shown that the proposed design is suitable for all planned vehicle types.

B.3.2 The existing street lamps leading up to the proposed new compound entrance will have upgraded luminaires installed to enhance visibility. The entrance itself will have a new streetlamp installed as well as having a recessed gate so that vehicles are able to pull in off the highway completely without impeding traffic. Finally temporary three-way traffic signals are proposed to control the access and egress of construction traffic into the compound.

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