Glen Davies FCILT

Transport and Logistics Specialist
AtoH Solutions

Vulnerable road user and route risk assessments

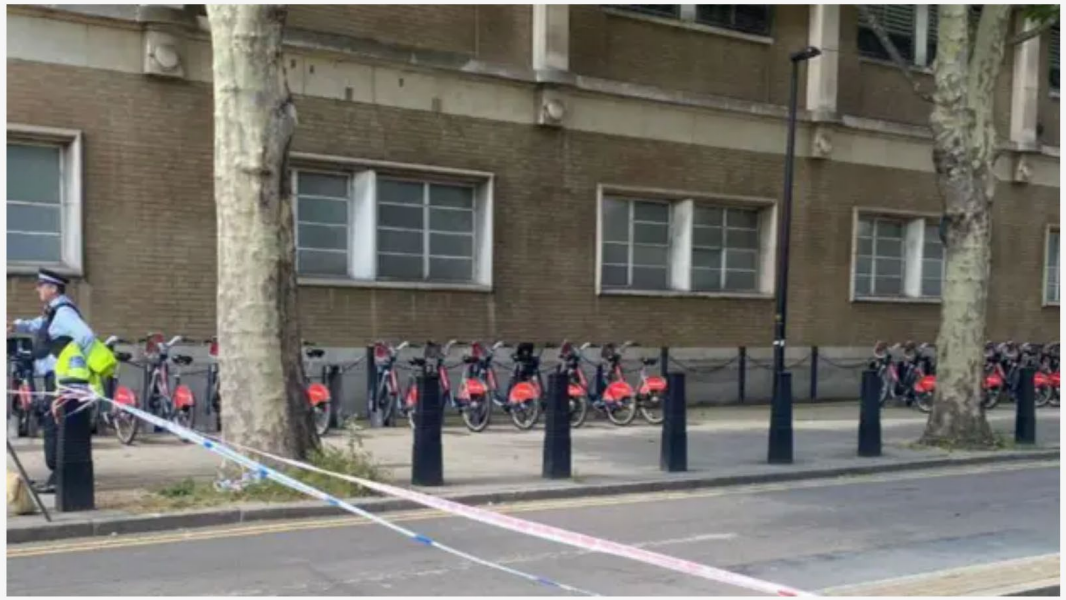
CLOCS Safety Forum

20 February 2025

glen@atoh.solutions

23 May 2023

Cyclist killed in central London lorry crash



At a glance

- A cyclist has died after a crash with a lorry on Wednesday morning
- The crash happened in Fitzrovia at about 07:40 BST
- It is the first cyclist death in London this year

A male cyclist has been killed in a crash with a lorry in central London.

The incident happened on Fitzroy Street, Fitzrovia, at about 07:40 BST.

The cyclist, aged in his 20s, was treated by paramedics but died at the scene.

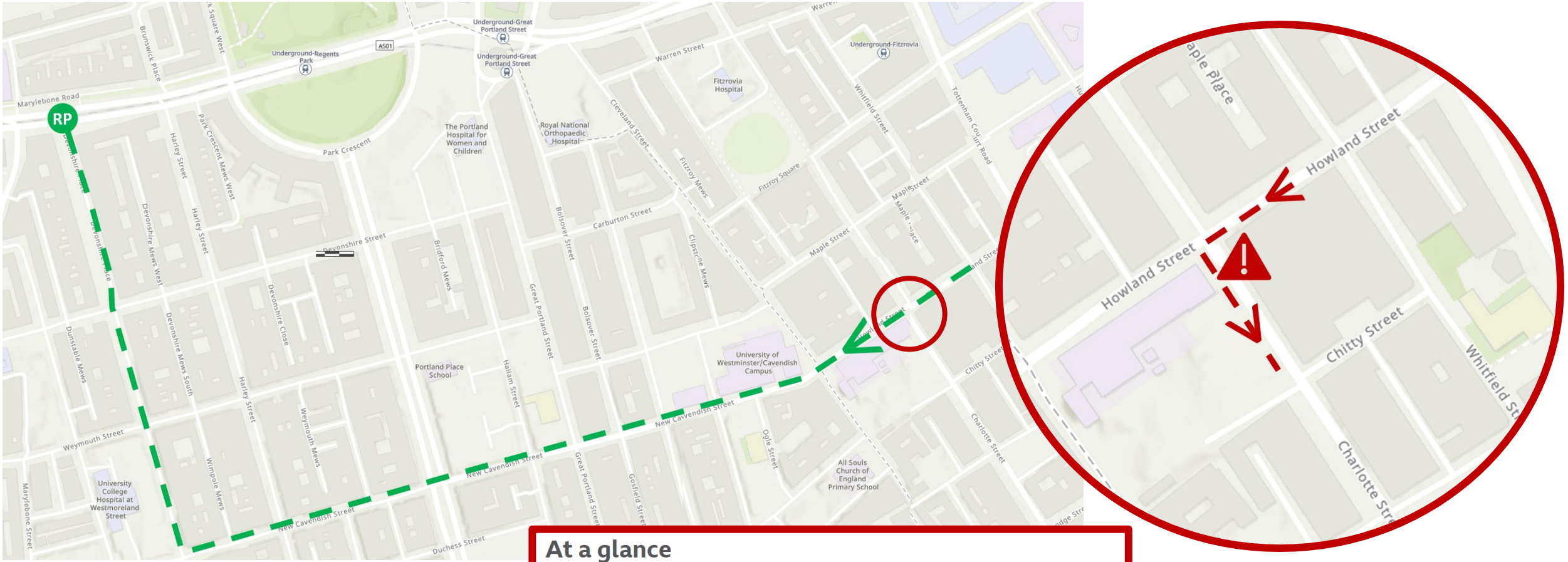
He is the first cyclist to be killed on the capital's roads this year, according to Transport for London (TfL).

A passer-by who witnessed the event told the BBC he "saw a young man on an electric bike cycling next to a large lorry".

"The lorry was turning left when it hit into the cyclist," he said.

"The bike was almost intact - clearly the man took most of the damage...".

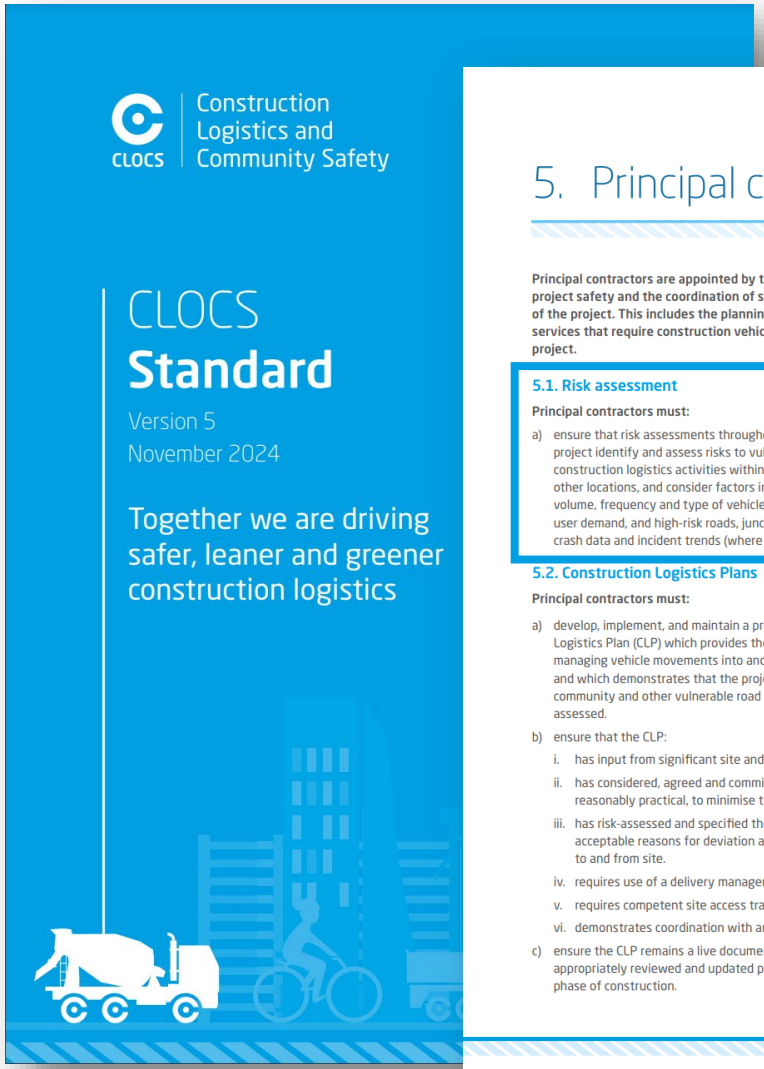
Planning infringements

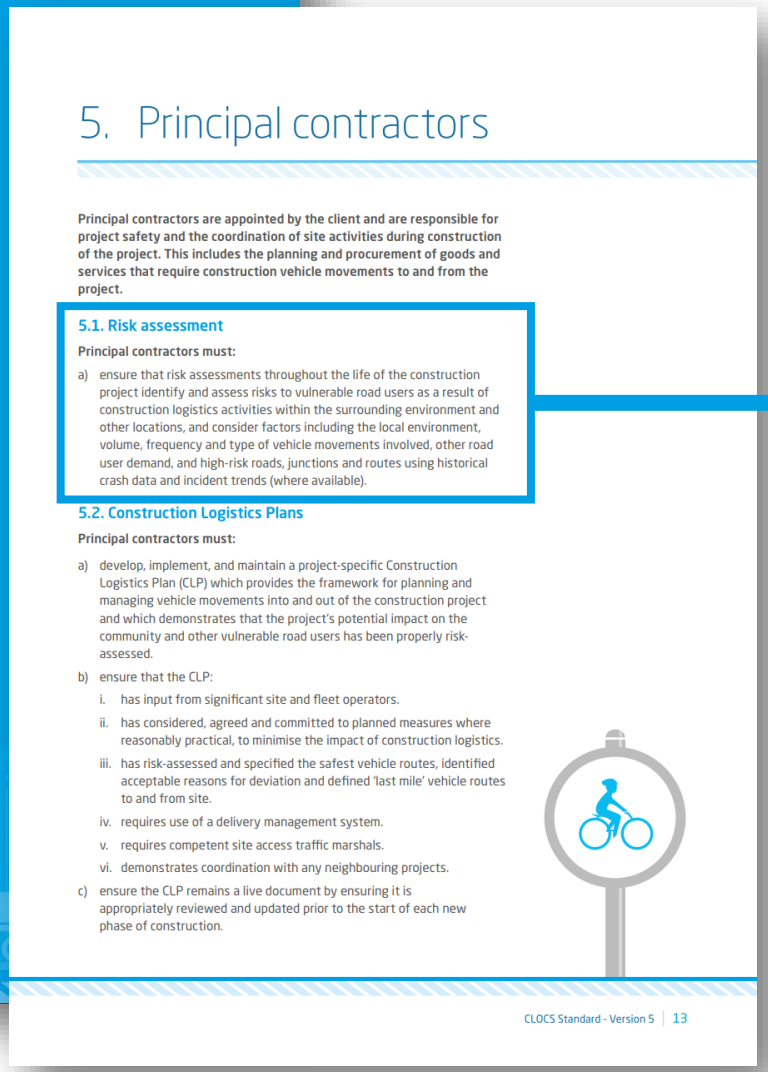


At a glance

- A cyclist has died after a crash with a lorry on Wednesday morning
- The crash happened in Fitzrovia at about 07:40 BST
- It is the first cyclist death in London this year

CLOCS Standard – Requirement 5.1





5. Principal contractors

Principal contractors are appointed by the client and are responsible for project safety and the coordination of site activities during construction of the project. This includes the planning and procurement of goods and services that require construction vehicle movements to and from the project.

5.1. Risk assessment

Principal contractors must:

a) ensure that risk assessments throughout the life of the construction project identify and assess risks to vulnerable road users as a result of construction logistics activities within the surrounding environment and other locations, and consider factors including the local environment, volume, frequency and type of vehicle movements involved, other road user demand, and high-risk roads, junctions and routes using historical crash data and incident trends (where available).

5.2. Construction Logistics Plans

Principal contractors must:

a) develop, implement, and maintain a project-specific Construction Logistics Plan (CLP) which provides the framework for planning and managing vehicle movements into and out of the construction project and which demonstrates that the project's potential impact on the community and other vulnerable road users has been properly risk-assessed.

b) ensure that the CLP:
   i. has input from significant site and fleet operators.
   ii. has considered, agreed and committed to planned measures where reasonably practical, to minimise the impact of construction logistics.
   iii. has risk-assessed and specified the safest vehicle routes, identified acceptable reasons for deviation and defined 'last mile' vehicle routes to and from site.
   iv. requires use of a delivery management system.
   v. requires competent site access traffic marshals.
   vi. demonstrates coordination with any neighbouring projects.

c) ensure the CLP remains a live document by ensuring it is appropriately reviewed and updated prior to the start of each new phase of construction.

5.1. Risk assessment

Principal contractors must:

a) ensure that risk assessments throughout the life of the construction project identify and assess risks to vulnerable road users as a result of construction logistics activities within the surrounding environment and other locations, and consider factors including the local environment, volume, frequency and type of vehicle movements involved, other road user demand, and high-risk roads, junctions and routes using historical crash data and incident trends (where available).

Assessing risks

Applying the standard risk assessment methodology, highlights the uncontrolled risks the supply chain poses:

- Those at risk
- Likelihood
- Severity of injury

There is no common industry practice for assessing road risk in construction supply chains

Safety, Health and Environmental Risk Assessment

Line Management are responsible for the approval of risk assessments and ensuring they are completed by a competent person

Business Stream / Unit: Project name	**Area/task:** Site logistics and traffic management – the safety of vulnerable road users	**Ref No:**	**Latest Version Date:** 20 December 2024
Risk Assessment Team: • Glen Davies AtoH Solutions	**Approval Signature**		

Related SHEMS Documents:
- Construction Minimum Standard - Traffic management & vulnerable road users
- TfL Construction Logistics Plan guidance
- TfL HGV Safety Permit conditions
- CLOCS Standard
- Council Code of Construction Practice Guidance

Those at Risk
A: All
B: Public
C: Contractor
D: Vulnerable
E: Employees
F: Environment

Likelihood (L):
1 Unlikely
2 Doubtful
3 Possible
4 Likely
5 Almost Certain
6 Certain

Severity (S) of Injury:
1 First aid
2 Medical treatment
3 Restricted work case
4 loss Time 1 +
5 RIDDOR
6 Death

Severity (S) of damage:
1 None
2 Slight
3 Minor
4 Moderate
5 Major
6 Severe

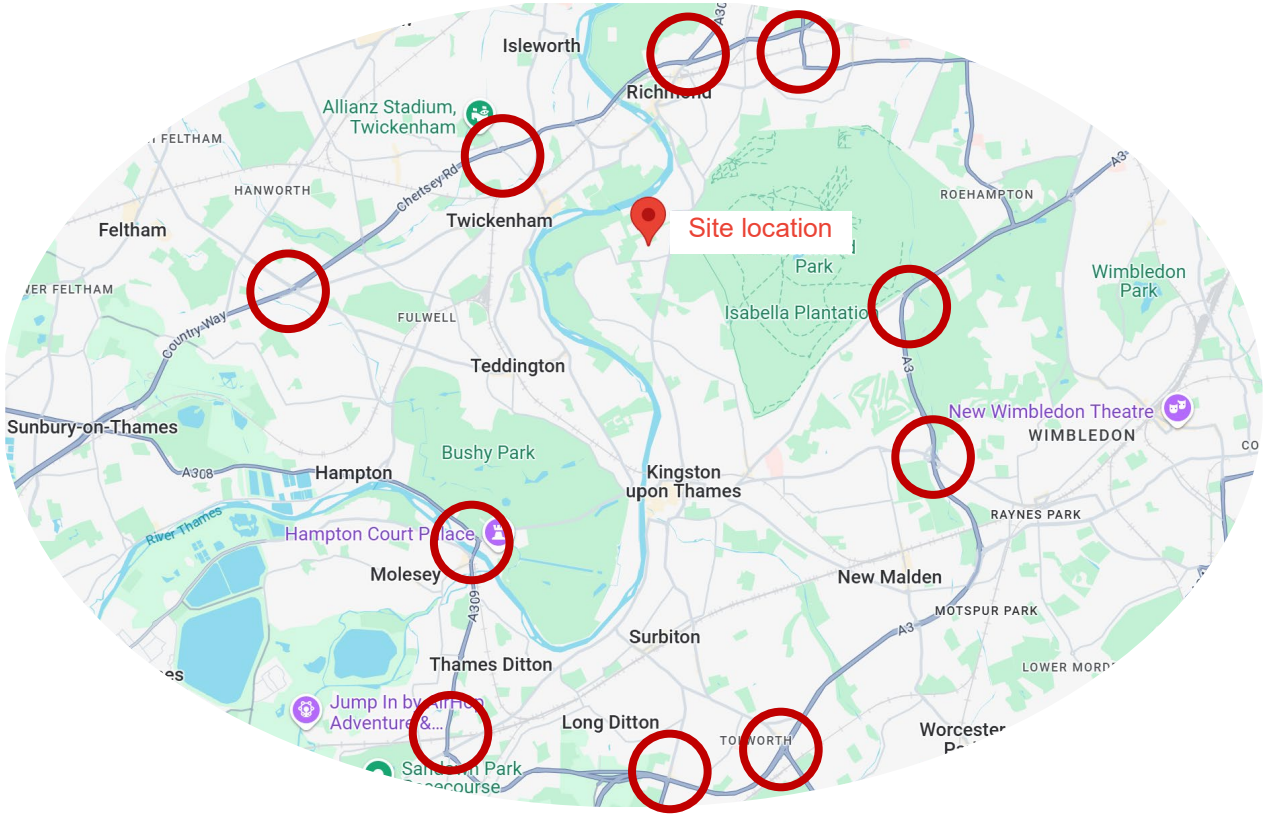
Ref	Identified Hazards and Associated Risks	Those at Risk	Initial Risk (R) L	S	R	Control Measures (ERIC PD)	Residual Risk (R) L	S	R	Review/Action/Owner
Likelihood (L) x Severity (S) = Risk (R) See matrix above.			< 6: adopt and monitor control			6-16: further controls may be necessary				>16: re-evaluate risk and develop further control
	…user …ist, …eel rider) …jured by …icle …lecting	B C D E	5	6	30	1. Adoption and compliance with the CLOCS Standard 2. Designating, communicating and adhering to traffic routes 3. Effective delivery management and scheduling 4. Monitoring compliance of standards and responsibilities delegated to contractors and suppliers See attached for detail of each control measure	3	6	18	Given the uncontrolled nature of the public highway and the varying standard of behaviour of other road users, the residual risk after all control measures have been implemented remains high. The likelihood of this risk is at 3. (Possible) and the severity is 6. (Death) even at slow speeds. The likelihood of death is possible in all urban traffic cases and due to the uncontrolled nature of the pedestrian footfall at close proximity to the site – this project is assessed as HIGH risk. Risk owners must continually monitor and review this risk and the effectiveness of its control measures outlined in this risk assessment.

Defining the route

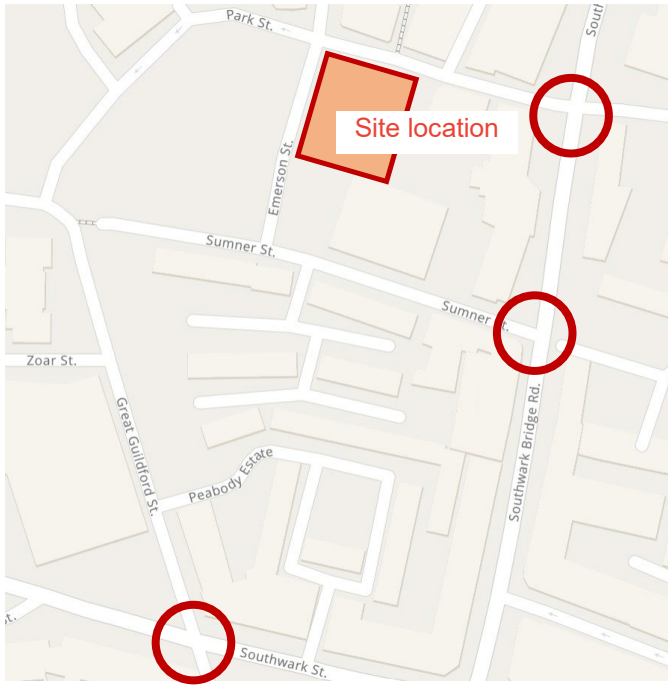
Routes can be defined in three main ways:

1	Designated by the local authority	May not be an ideal or efficient route but it's unambiguous and not up for negotiation
2	Determined by contractor	Guidance may be provided by the local authority but responsibility and accountability sits with the contractor
3	Recommended by the risk assessor	Responsibility is designated to the risk assessment team but accountability remains with the contractor

Identifying the route



Outer London



Central London

Start point – Release point

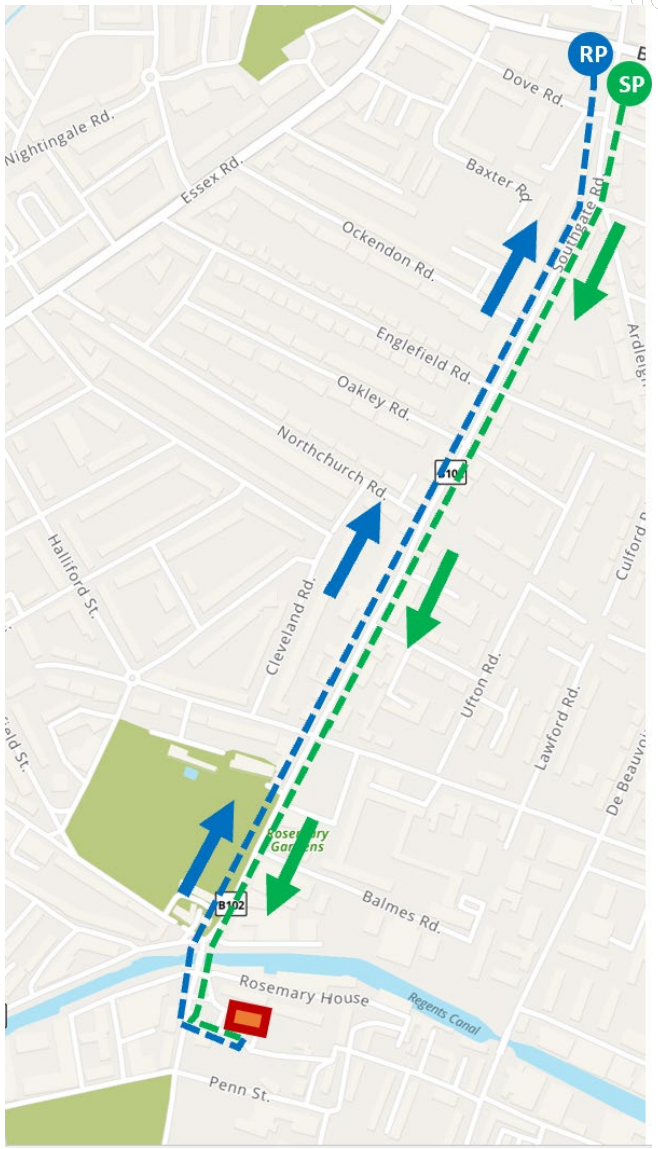
The Start point – Release point concept identifies the specific point that the designated routes to and from site start and end. This means vehicles:

To Site

- May navigate to the Start Point via the most appropriate route
- **Must follow designated route instructions from the Start point to Site**

From Site

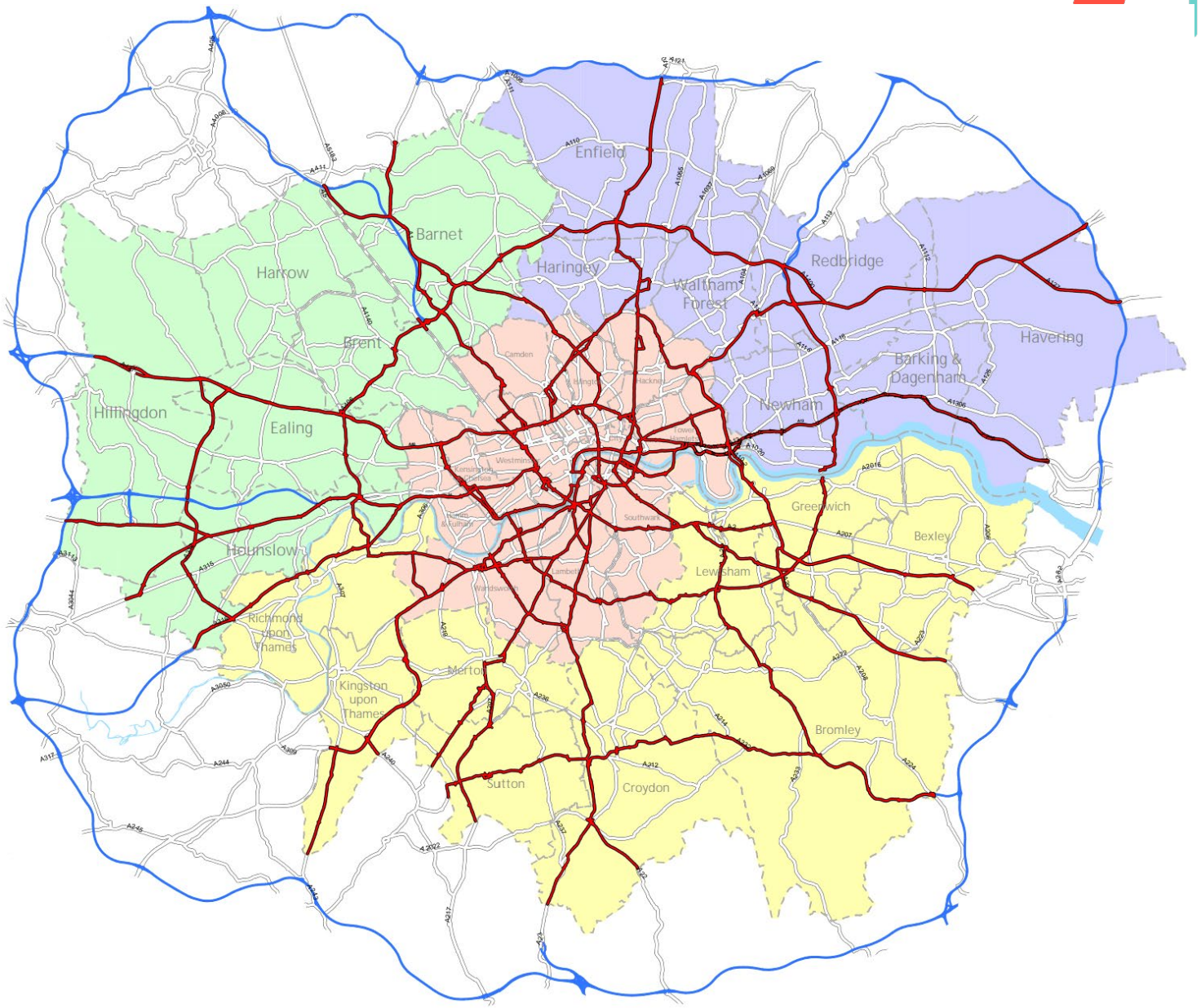
- **Must follow the designated route instructions from the Site to the Release Point**
- May navigate from the Release Point via the most appropriate route



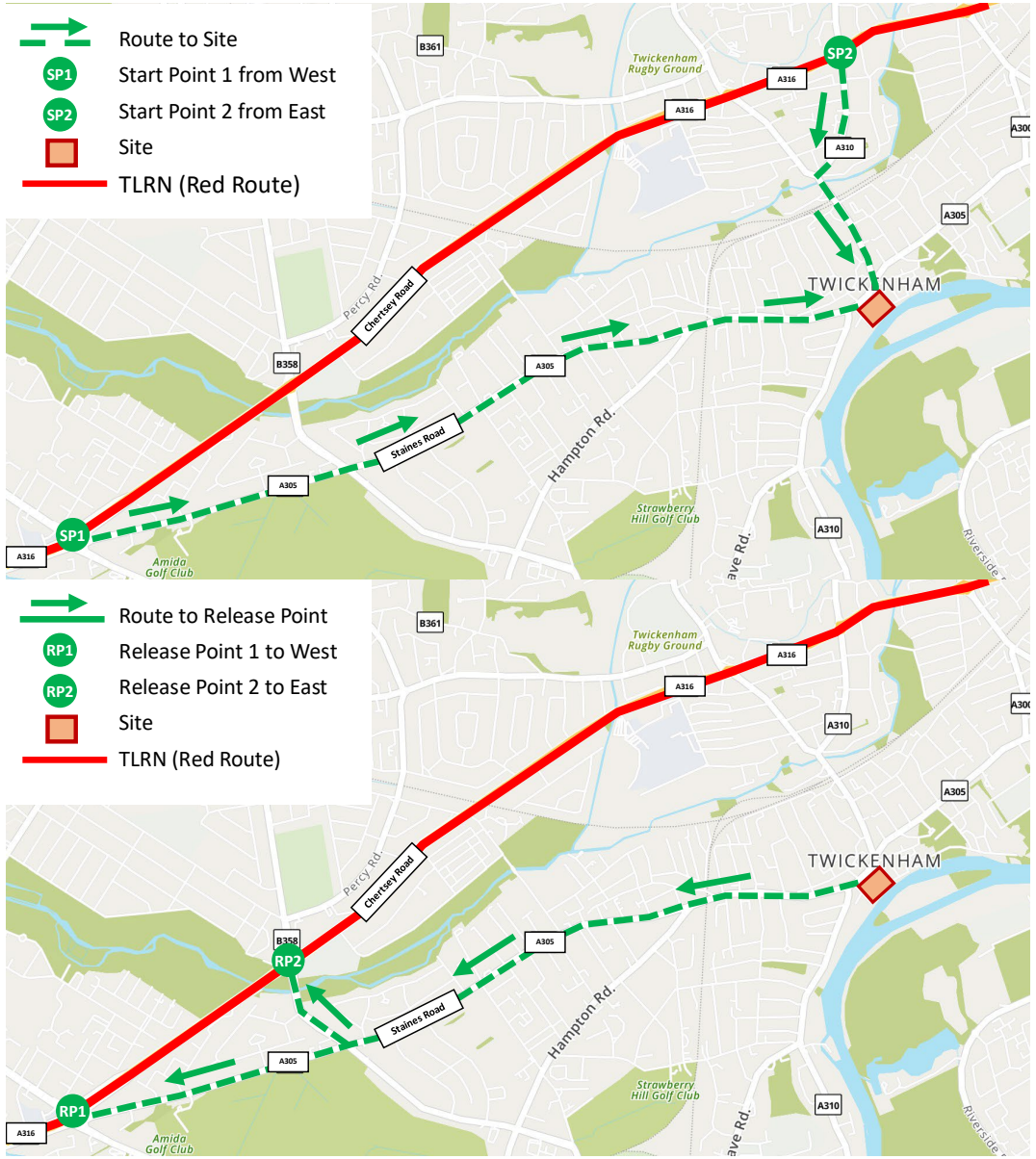
Strategic routes

KEY:

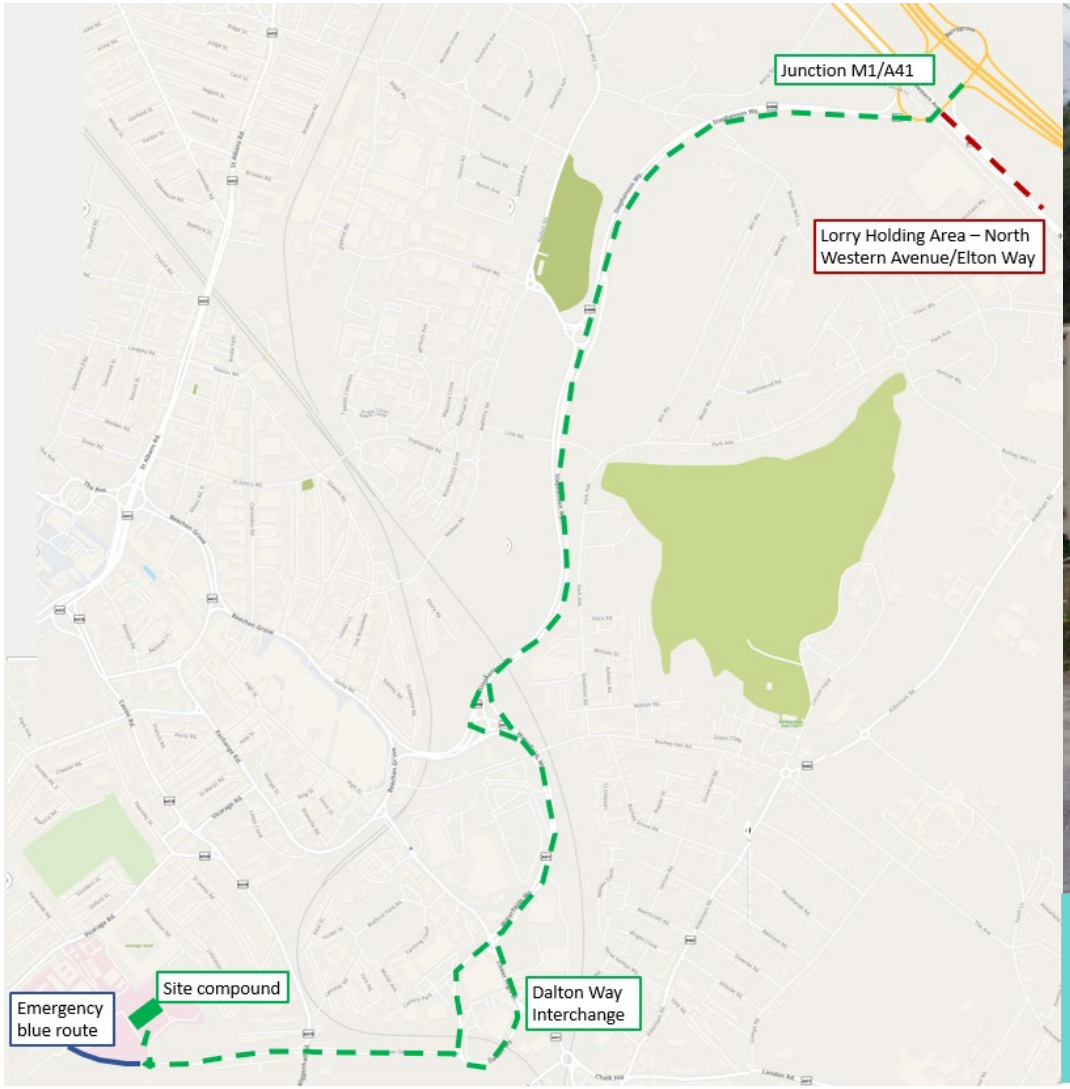
- Red Route
- A Roads
- Motorway
- Borough Boundaries
- North-East Area
- North-West Area
- Central Area
- South Area



Risks influencing the route



Lorry holding areas

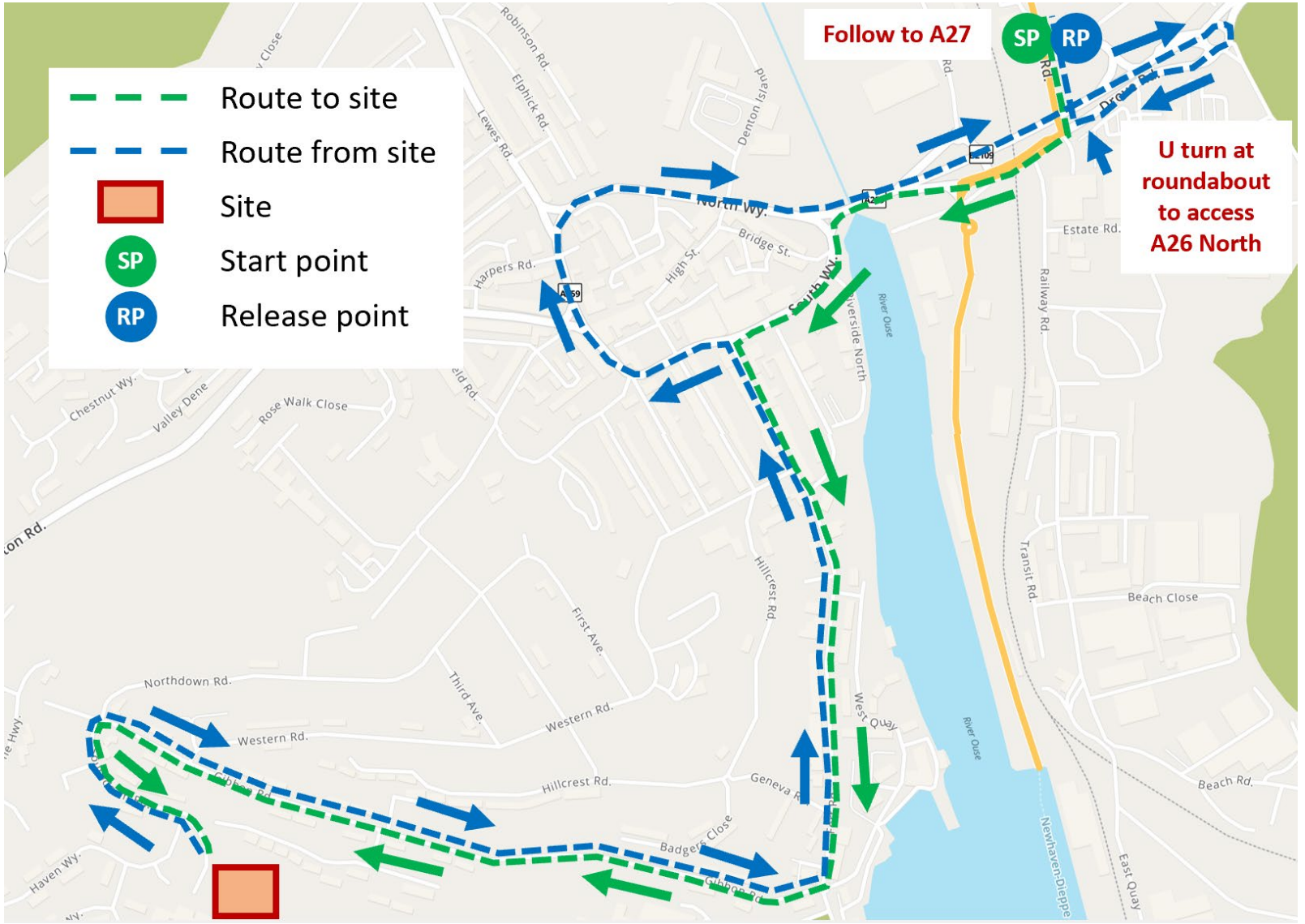


Single carriageway road – no method to turn safely
Next roundabout is 2 miles away

Low risk route – high risk project

Start and Release points in the same location with the same route. However…

- The town one way system adds complexity
- Route is not densely populated and limited cycle traffic
- The whole route is a bus route and has been assessed as suitable for large vehicles
- Site access point is a no through road and traffic is very light

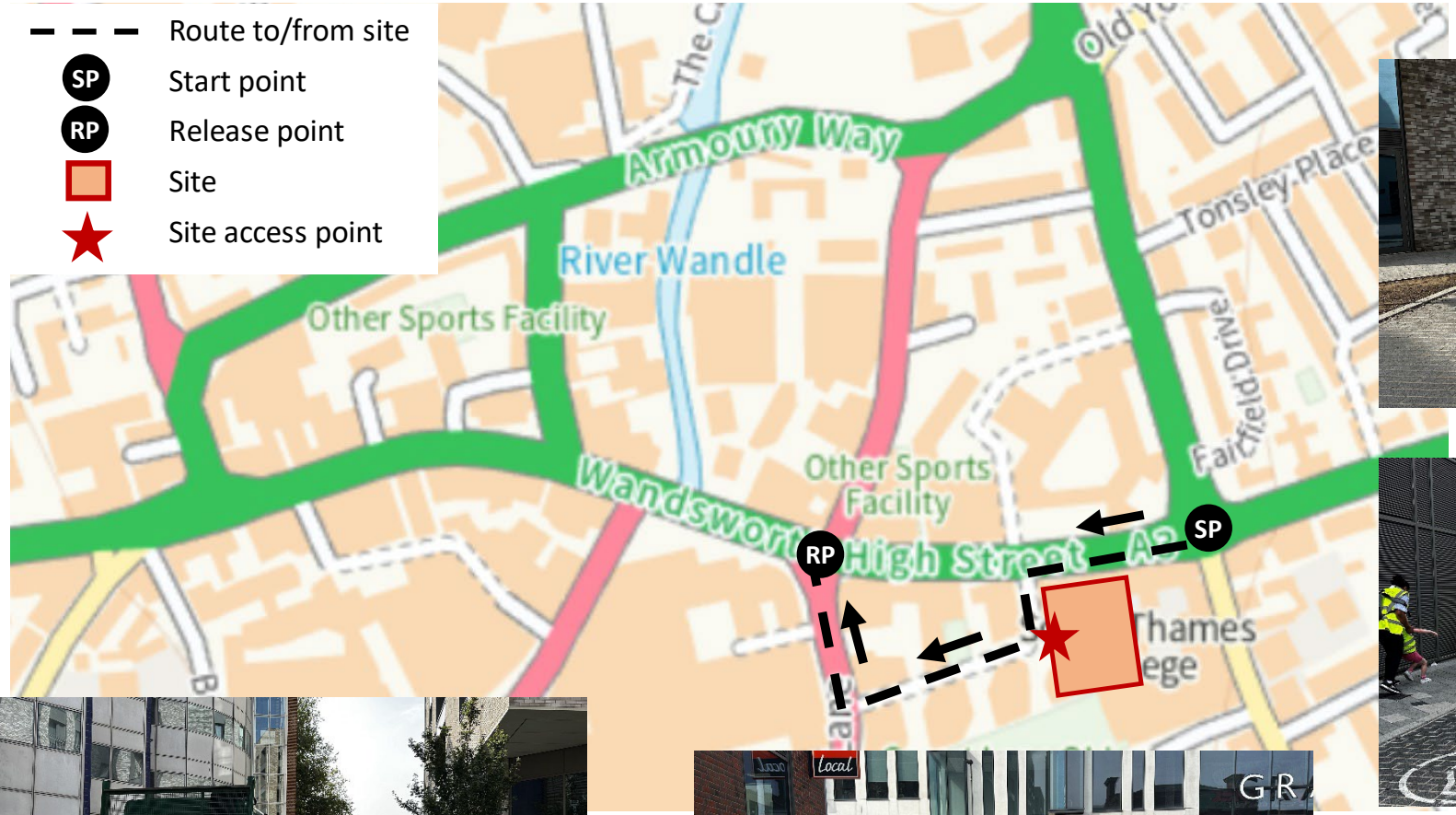


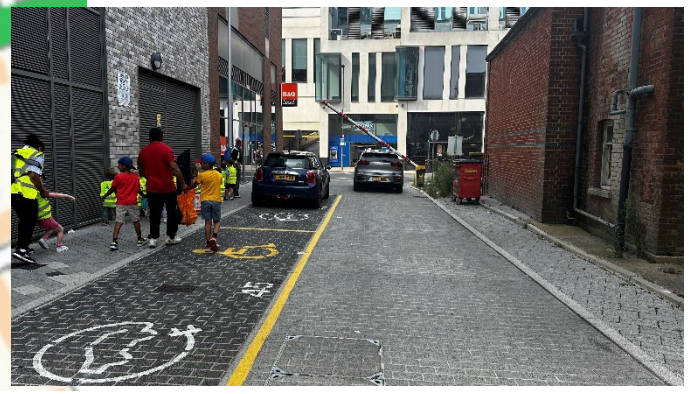
Low risk route – high risk project

However, the project…

- Is a live school with another school neighbouring
- Has a haul road through the school grounds
- Doesn't have any pedestrian or public traffic segregation

Short route but high risk





Control measure 1 – Road risk standards

Control measure 1. CLOCS Standard

Kier is a Construction Logistics and Community Safety (CLOCS) Champion committed to minimising the risks to Vulnerable Road Users (VRUs), such as cyclists and pedestrians. As such, all Kier construction sites work to the requirements of the CLOCS Standard and all suppliers operating vehicles over 3.5 tonne GVW must be accredited to the Fleet Operator Recognition Scheme (FORS) Silver standard as a minimum. In addition to this, and due to the close proximity of cyclist and pedestrian traffic, it is strongly recommended that all delivery and service vehicles up to 3.5 tonne GVW on the Cardinal School project are also accredited to FORS.

Adherence to CLOCS is referred to as contractual road risk standards and mean that:

- Fleet operators are required to be accredited to FORS Silver (or above) and participate in compliance gate checks
- Delivery vehicles over 3.5 tonne GVW are required to be fitted with enhanced safety features to protect vulnerable road users – this is in addition the London HGV Safety Permit requirement for vehicles over 12 tonne GVW
- Drivers are required to be correctly licenced and trained in reducing risk to vulnerable road users (ie FORS Professional Safe Urban Driving or Safe Driving course)
- The project's potential impact on vulnerable road user safety is risk-assessed, with routes to and from site designated and adhered to

- Road risk standards are well established in the construction sector – FORS Silver being the benchmark
- Started with Crossrail in 2009, TfL in 2012 and then CLOCS in 2013
- London sites are also supported by the HGV Safety Permit (ie DVS and PSS)
- However, most of the contractual requirements are for vehicles over 3.5t GVW
- Vehicles up to 3.5t GVW and 7t GTW not included but still pose a significant risk

Control measure 2 – Traffic routing

Control measure 2. Traffic routing

3.1 Overview

The site is located at Penn Street and Colville Street (Figure 1). The site is structured into two separate plots (blocks C and E), each of which have a dedicated access and egress gate. They also have separate designated routes due to a neighbouring Hutton site on Bridport Place where the site boundary encroaches on the public highway and restricts vehicle manoeuvring. We have considered routes that take vulnerable road users into account at each plot location and the least impacting routes have been selected – into Plot C from the north and Plot E in from East and out to West. Consideration is also given to vehicle height and weight restrictions and the cumulative impacts of construction traffic on the public highway. Whilst the routes selected include a Low Traffic Neighbourhood (LTN Zone and a 7.5 tonne restriction (except for access), with effective control measures in please they are considered suitable for the size and number of vehicles in the site's supply chain.

Figure 1 - Site location, Plots C and E

To ensure routes are clearly understood by all suppliers and co designated using the Start Point and Release Point methodolog may navigate to the:

- **To the Start Point** - via the most appropriate route but r instructions from that point to the Site
- **From the Release Point** - via the most appropriate rout route instructions to that point from the Site

3.2 Plot C Routes

The nearest route to Plot C via the strategic road netwo Road with Southgate Road. This junction is designated and Release Points (Figure 2).

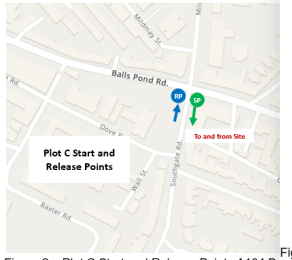


Figure 2 – Plot C Start and Release Points A104 Ba

Figure 3 shows the direction vehicles are routed from the Plot C Start Point to Site and from Site to Plot C Release Point. Turn-by-turn directions for routes from the Start Point to the Release via Plot C are included at Annexes 1 – 2.

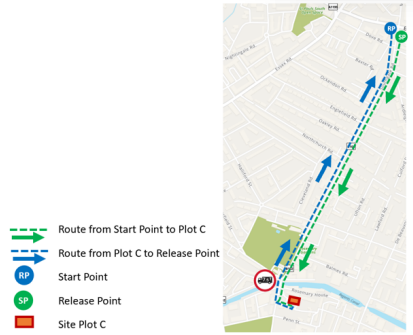


Figure 3 – Route to and from Plot C via the Start and Release Points

3.3 Plot E Routes

The nearest route to Plot E via the strategic road network (TLRN Red Route) is from the A10 Kingsland Road junction with Nuttall Street.

This junction is designated by Acme as the Plot E route Start Point (Figure 3).

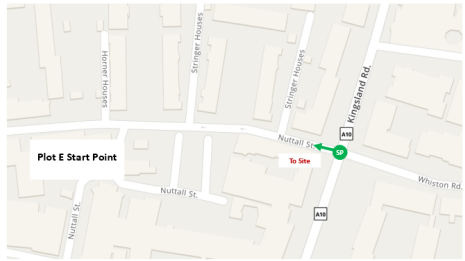


Figure 3 – Plot E Start Point A10 Kingsland Road junction, Nuttall Street

The designated route out from Plot E is via A1200 New North Road junction with A104 Essex Road. This junction is designated by Acme as the Plot E route Release Point (Figure 4).

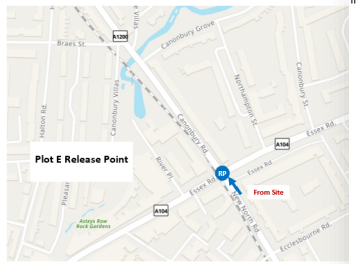


Figure 4 – Plot E Release Point A1200 New North Road junctio

Figure 5 shows the direction vehicles are routed from the Plot E St 6 shows the direction vehicles are routed to the Plot E Release Po

Turn-by-turn directions for routes from the Start included at Annexes 3 – 4.

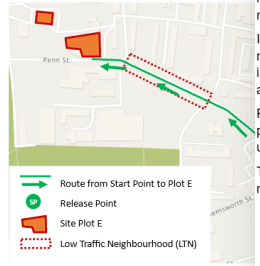


Figure 5 – Route to Plot E

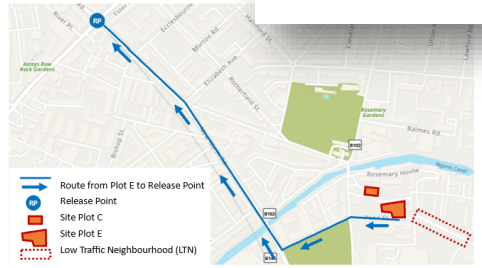


Figure 6 – Route from Plot E to the Release Point

All other routes between the Start and Release Points are considered unsuitable for site traffic and are not prescribed or designated. This is due to the collision risk being **HIGH** because of:

- Areas being residential with high pedestrian footfall and used regularly by cyclists
- Areas designated at Hackney School Streets where pedestrians and cyclists are prioritised at school start and finish times
- Narrow parts of the routes with parked vehicles and/or loading bays

Figure 7 shows the route Start and Release Points in relation to the strategic road network crossing the boundary between the London Borough of Hackney and the London Borough of Islington.

Figure 7 – Route to and from site in relation to the strategic road network

3.4 Vehicle access and egress

Due to narrow access roads and close proximity of cyclists pedestrians in the area, all deliveries must be planned, agreed and scheduled. Whilst swept p defined for vehicle access, a specific Risk Assessment and Metho must be produced for traffic management staff (traffic marshals) co manoeuvring and reversing.

It should be noted that Hyde Road is a Low Traffic Neighbourhood normal conditions all motor vehicle traffic is prohibited in both direc illustrate the LTN access point form Hoxton Street and exit point o a route regularly used by cyclists and pedestrians.

Figure 9 is an extract from the Traffic Management and Logistics F proposed control measures and segregation which will allow Plot E use this route.

The methodology devised must be conducted under the strict cont management staff and regularly reviewed to ensure risk is minimis

Figure 7 – Hyde Road LTN Zone ac

Figure 8 – Hyde Road LTN Zone exit to Penn Street

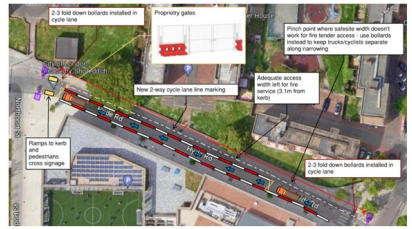


Figure 9 – LTN Zone control measures to be installed (Ref. Transport and Logistics Plan)

3.5 Traffic marshals

The LTN Zone pit lane and the plot access points will be controlled by a traffic marshals. Given the high risk to vulnerable road user safety, the CLOCS approved Site Access Traffic Marshal (SATM) training course is the recommended competence and the CPCS A73 Plant and Vehicle Marshaller should also be considered. In addition to controlling and banking vehicle movement in accordance with the relevant RAMS, the traffic marshal's responsibilities include:

- Ensuring the safe passage of all traffic and road users adjacent to the site - in particular the most vulnerable road users such as pedestrians and cyclists
- Conducting compliance checks on vehicles (see control measure 1)
- Stopping up traffic legally (Stop-Works procedure) and segregating pedestrians if defined in the RAMS
- Being the additional eyes and ears of drivers, visitors and site staff

Traffic marshals are instructed that only one traffic marshalling task can be conducted at any one time. Where a situation requires more than traffic marshalling task, additional support may be deployed to support. SATMs are also instructed that only 'Stop-Works' signage is the only legal and acceptable method to stop traffic. Under no circumstances should any staff attempt to stop traffic unless they are:

- Trained and using the correct method
- Wearing the correct PPE
- Using the 'Stop-Works sign

Traffic marshals are issued two-way radios to maintain communication with each other and site management and staff.

Figure 10 – Correct use of Stop Works signage

Control measure 3 – Delivery management

Control measure 3. Delivery management

Once the demolition phase is complete a Delivery Management System (DMS) will be used for all delivery bookings and will be used to manage and coordinate vehicular traffic to and from site.

3.1 Delivery requests

Using the DMS, deliveries should be requested 48 hours in advance. Each delivery is then approved and scheduled considering:

- Site delivery time restrictions and constraints – avoiding peak time deliveries where possible
- Site space capacity and offloading time
- Vehicle weight and dimensions
- Vehicle trip numbers generated
- Availability of handling staff and equipment

Delivery scheduling and delivery slots will be acceptable during site opening hours up to one hour before the site closes:

- Monday to Friday between 0800 to 1700hrs
- Saturday between 0800 to 1200hrs

Delivery turnaround time on site must be considered to ensure these timings are complied with. There are no deliveries permitted on Sundays and public bank holidays.

Where there is a school on route, the Hackney Code of Construction Practice Guidance states restricted delivery hours between 0800-0930 and 1430-1600 (Mon-Fri during term time). However, the extensive control measures and traffic management proposed in this risk assessment reduce the risks to vulnerable road users during these times and it is proposed that these delivery time restrictions are not applied.

Special arrangements will be required for any deliveries outside of these times, including enhanced traffic management measures. For any deliveries outside of the site operating times, the London Borough of Hackney may need to be consulted and additional control measures in place.

3.2 Delivery scheduling

When a delivery slot is requested, contractors and suppliers will declare that:

- Fleet operation used is accredited to FORS Silver
- The delivery vehicle used is fitted with enhanced safety features to protect vulnerable road users
- The driver is appropriately licensed and trained to reduce road risk to vulnerable road users (ie FORS Professional Safe Driving course)
- The designated route to and from site will be followed

Suppliers will be required to report and explain any discrepancies to these requirements.

- **Delivery requests**
- **Delivery scheduling**
- **Delivery approval**

3.3 Delivery approval (when the DMS is implemented)

When a delivery slot is approved, contractors and suppliers will be issued with:

- Delivery time and date
- Delivery time window dependent on nature of the load
- Designated route information
- Driver briefing note
- The DMS will automatically issue this information electronically – engagement with DMS provider may be required to achieve this

Control measure 4 – Compliance monitoring

Control measure 4. Compliance monitoring

There are three aspects of compliance monitoring to ensure road safety is prioritised.

4.1 Contractual road risk standards

The contractual road risk standards (as required by CLOCS) that all fleet operators are expected to meet are listed at Control Measure 1. Monitoring compliance to these standards requires the following actions:

- Once a supplier/fleet operator has been appointed, the logistics manager or subcontractor site supervisor communicates the contractual road risk standards and their importance in writing
- Desktop checks will be made to verify FORS accreditation status of any supplier/fleet operator
- When a delivery slot is requested, contractors and suppliers declare compliance with the contractual road risk standards
- When a vehicle arrives at site, the SATM will check the contractual road risk standards are met using the Acme form SHEMS-2025-CLOCS Compliance Aide Memoire
- For any non-compliance issue identified at site, the SATM will follow the non-compliance procedure. This means a warning may be issued and followed up or the vehicle may be refused access to site resulting in a failed delivery

4.2 Adherence to designated routes

The designated route that all drivers are expected to follow are listed at Control Measure 2 and Annexes 1 – 4. Ensuring adherence to designated routes requires the following actions:

- Once a supplier/fleet operator has been appointed, work package or project managers must confirm they are aware of and will adhere to the designated routes
- All drivers receive a toolbox talk of the designated route to and from site and any high risk areas
- All drivers are issued with a copy of the designated route to and from site prior to any journey
- When a delivery slot is requested, contractors and suppliers will declare compliance to the designated route to and from site
- When a vehicle arrives at site, the SATM will ask the driver if there have been any deviations from the designated route
- When a vehicle leaves site, the SATM will brief the driver on the designated route to the Release Point

- **Contractual road risk standards**
- **Adherence to designated routes**
- **Adherence to delivery timings**

4.3 Adherence to delivery timings

In accordance with Control Measure 3, any vehicle that does not arrive at its scheduled time will be logged and followed up for further investigation. This is extremely important as due to space and traffic management staff limitations.

In the following circumstances and if the vehicle cannot be safely accommodated, vehicles will be refused access and recorded as a failed delivery if they arrive outside scheduled times – either early or late and:

- There is insufficient time for it to be loaded or unloaded, or
- Have not been scheduled on the DMS, ie unexpected delivery

Trends will be monitored over time to help inform follow up actions with suppliers and contractors.

Detailed directions and risk assessment

Southgate Road – pedestrian zebra crossing with central refuge.

Southgate Road – cyclist ASL feeder lane. ASLs encourage cyclists to undertake HGVs in left hand blindspot. Cyclist behaviour may be unpredictal

Risk of collision is **HIGH**.

Trixi mirror is installed to assis driver vision of vulnerable roa users in blind spots.

Southgate Road – advance w of parallel crossing.

Southgate Road – parallel cr with segregated with flow cy lane.

A parallel crossing is a pede and cycle crossing that has p over the road it crosses. It's up of a zebra crossing with a cycleway alongside.

Drivers must give to pedestri and cyclists crossing.

Risk of collision is **HIGH**

Southgate Road – parked vehicles on both sides.

Southgate Road – traffic light controlled junction with cyclist with feeder lane. ASLs encou cyclists to undertake HGVs in left hand blindspot. Cyclist behaviour may be unpredictab

Pedestrian zebra crossing aft junction.

Risk of collision is **HIGH**.

Southgate Road – approach to Bridport Place.

Pedestrian central refuse but no crossing.

Warning sign for school which is an early years centre.

Turn left onto Bridport Place.

Bridport Place – Pedestrian zebra crossing immediately after the junction turn.

20mph zone reminder. 7.5 tonne restriction, except for loading.

Communicating route information to suppliers

All contractors, suppliers, fleet operators and drivers must be made aware of, and instructed to adhere to, the designated routes to and from site. Where applicable this should also be a contractual requirement.

Designated routes and the VRU Route Risk Assessment should be issued to all contracted parties when:

- The contracted service is commissioned
- Any delivery (or collection) is requested, approved and scheduled
- There is any material change to the contract, contractor, sub-contracts or route information

All suppliers and contractors are required to have back-to-back agreements in place with regards to all supply chain road risk requirements with specific flow-down terms in place

Communicating route information to drivers

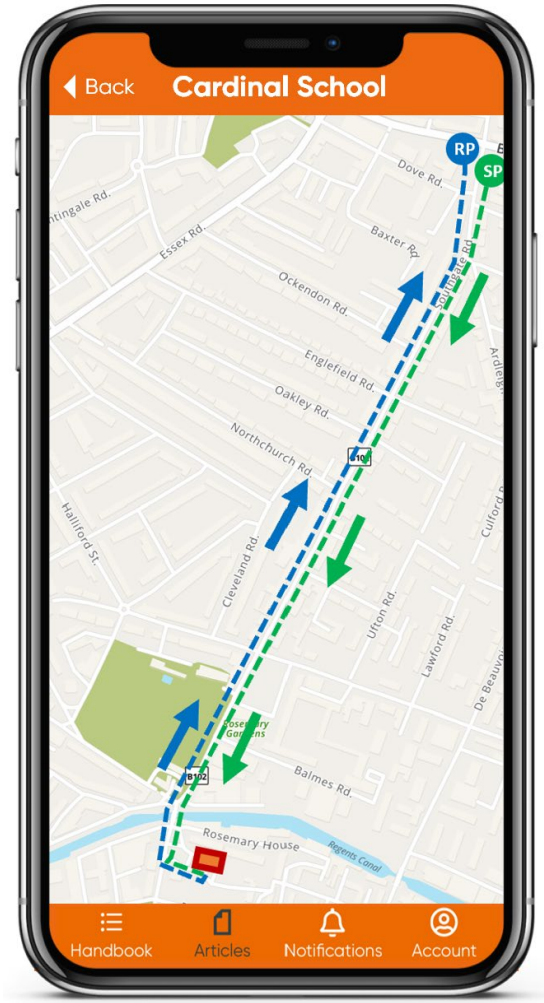
Paper route cards are fine but aren't as efficient or effective compared to digital solutions

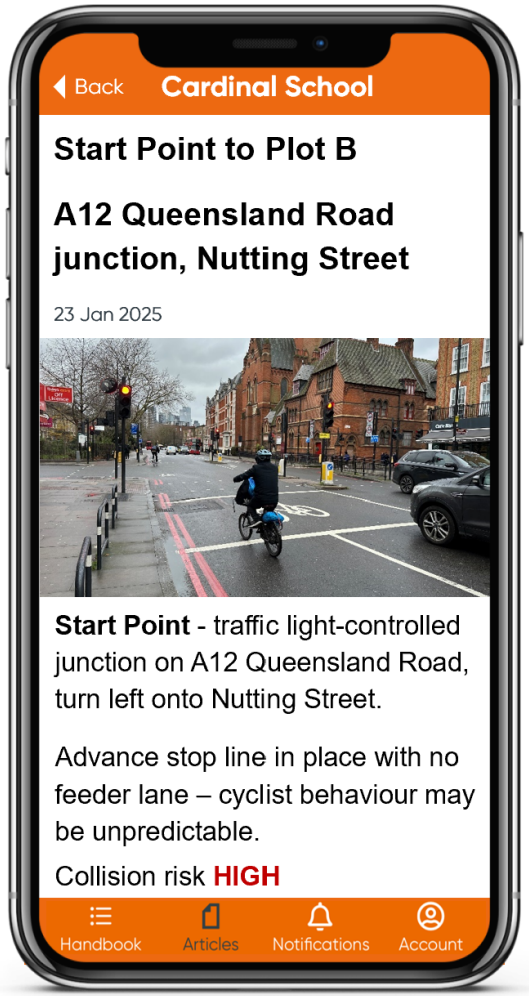
Distribution of safety critical information needs to be flexible, instant and able to reach a broad audience with minimal effort

Real time reporting is also helpful to understand who has the information and who hasn't

Do you know how your suppliers and hauliers communicate with their drivers?

The Driver Handbook





Key points

- Turning a blind eye can be both devastating and costly
- All sites are unique and posed different risks to vulnerable road users
- Route options can be straight forward to complex
- A route designated by the local authority is not necessarily a bad thing
- A common methodology can be adopted with a little industry leadership
- The CLOCS Standard includes ready made risk mitigations

Local authorities are now starting to see this standard of risk assessment – it may be an expectation in the future

Thank you

Glen Davies FCILT

Transport and Logistics Specialist
AtoH Solutions

glen@atoh.solutions