CLOCS

Standard for construction logistics

Managing work related road risk

CLOCS

Looking out for vulnerable road users

CLOCS - Looking out for vulnerable road users

In 2012, Transport for London (TfL) commissioned a review of the construction sector's transport activities to understand the causes of collisions with cyclists. The resulting 'Construction Logistics and Cyclist Safety' report laid the foundation for the CLOCS programme which has since broadened to cover the safety of all vulnerable road users.

CLOCS aims to achieve a visionary change in the way the construction industry manages work related road risk whilst providing an opportunity for clients and developers to look out for the wider community. This is moving forward in three key ways:

- Improving the safety of vehicles
- Addressing the imbalance between on-site health and safety and work related road safety
- Encouraging wider adoption of best practice across the logistics industry

The *CLOCS Standard for construction logistics: Managing work related road risk* has been developed as a common national standard for use by the construction logistics industry. Implemented by construction clients through contracts, it provides a framework that enables ownership in managing road risk which can be adhered to in a consistent way by fleet operators.

Supplementary guidance has been developed to accompany the CLOCS Standard and provide further information on the key requirements:

- CLOCS Guide – Managing driver training and licensing
- CLOCS Guide – Vehicle safety equipment
- CLOCS Guide – Managing supplier compliance
- CLOCS Guide – Managing work related road risk in contracts
- CLOCS Toolkit – Managing collision reporting and analysis
- CLOCS Compliance toolkit

Representatives from different organisations – vehicle manufacturers, construction logistic clients, operators, regulatory and enforcement bodies are actively engaged with CLOCS representing a united response to road safety and greater social responsibility.

Acknowledgements

The *CLOCS Standard for construction logistics: Managing work related road risk* has been developed in collaboration with key industry stakeholders.

The Health and Safety Executive welcomes this industry led initiative facilitated by Transport for London as a positive step towards improving the management of work related road risk.

The expert contributions made from organisations and individuals consulted in the development and review of this Standard are gratefully acknowledged.

The *CLOCS Standard* is reviewed at intervals not exceeding two years, and any amendments arising from the review will be published in an amended version. The *CLOCS Standard* does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Version 2 December 2015 The CLOCS Standard has been reviewed and updated in consultation with the CLOCS working group. No minimum requirements ("Shall") have been changed but wording and layout may have altered

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Prince Michael INTERNATIONAL ROAD SAFETY AWARDS

CLOCS is proud to be the 2015 Prince Michael International Road Safety awards Premier Award winner

Introduction

1.1 Background and context

Population growth

The population of the UK is expected to rise to 70 million by 2027 making it one of the most densely populated countries in Europe*. Our towns and cities are busier than at any other time in history creating unique challenges to address.

A growing population means growing demand for places to live, work and spend time and an inevitable rise in development and construction activity - often against a backdrop of considerable constraints on space. We need to ensure we develop the skills and capability to embrace this growth. Developing our towns and cities in a sustainable manner is vital to our economy, our social wellbeing and the environment we live in.

A rising population places considerable strain on already busy transport networks necessitating changes in travel behaviour and the modes of travel used. A number of UK city and regional authorities already have high levels of walking and cycling and are increasingly recognising the benefits of promoting these modes as healthy and sustainable ways to travel.

Vulnerable road users and goods vehicles are sharing the roads more than ever. Our historic towns and cities and many of the large vehicles required to service them were not designed with this type or level of activity in mind, creating challenges to be managed and overcome.

Road safety

Where the numbers of people walking and cycling are growing in parallel to higher levels of development and construction activity there is increasing pressure on already constrained road space leading to the potential for conflict.

Cycling is on the increase nationally, but has been particularly notable in London where it has almost doubled since 2000. There are now nearly 600,000 cycle trips made each day with numbers rising each year.

However, this growth has been coupled with concerns about cycle safety. Although there have been reductions in the overall number of people killed and seriously injured on roads across the UK, the number of cyclist fatalities increased between 2013 and 2014.

There are particular concerns about the over representation of large goods vehicles in collisions with cyclists and pedestrians that have fatal and serious outcomes. Nationally, large goods vehicles over 3.5 tonnes are involved in approximately 19 per cent of cyclist and 15 per cent of pedestrian fatalities.

There is a particular issue in London and between 2008 and 2013, 60 per cent of cycling fatalities involved a goods vehicle, despite these vehicles representing just 16 per cent of the road miles travelled in the capital. However, this issue is not restricted to collisions with cyclists – in London there were twice as many pedestrians and motorcyclists killed in collisions involving vehicles over 3.5 tonnes over the same period. Analysis of the cycling figures found that a disproportionate number of the vehicles involved were construction related.

*ONS National Population Projections 2012-based Statistical Bulletin

Vulnerable road user safety is not only an urban issue. Rural roads account for 32 per cent of pedal cycle traffic but 58 per cent of pedal cyclist fatalities (all vehicles).

Addressing the challenge

In 2012 Transport for London (TfL) commissioned a review of the construction logistics sector's transport activities with an aim of understanding the causes of collisions with vulnerable road users and how they may be prevented. The Construction Logistics and Cyclist Safety report was published in February 2013. The document highlighted issues with the way Work Related Road Risk (WRRR) was managed across the industry and raised concern over the limitations of current construction vehicle cab design with regard to minimising blind-spots.

Following the publication of this document a high profile event was held at City Hall in London on 2 May 2013 attended by construction logistics representatives who publicly demonstrated their commitment to change. Communication of findings of the report and buy in from the industry led to the formation of industry working groups which have identified what can be done to reduce the risks posed by goods vehicles to vulnerable road users. One of the steps identified was to develop and promote adherence to a nationally recognised standard for managing WRRR.

National Commercial Vehicle units and the Industrial HGV Task Force, made up of the Metropolitan Police, City of London Police and the DVSA, enforce the regulations relating to HGVs demonstrating the high level of national committment to addressing this issue. Since the 1 September 2015 all roads in Greater London are subject to the Safer Lorry Scheme, prohibiting vehicles over 3.5 tonnes gross vehicle weight without side-guards or Class V and VI mirrors fitted from using London's roads. All vehicles compliant with CLOCS will also be compliant with the Safer Lorry Scheme.

The WRRR requirements within this document represent a key step in demonstrating the commitment of construction logistics industry organisations to improving road safety. Embedding work related road safety in our culture is critical if we are to develop the skills and capability to manage and embrace inevitable population growth and travel demand throughout the UK.

1.2 Development of a national standard

The *CLOCS Standard for construction logistics: Managing work related road risk* is the direct result of collaboration between developers, construction logistic operators and industry associations. This document draws together evolving and applied best practice from a number of individual standards, policies and codes of practice into one WRRR standard that can be implemented by planning authorities, developers and contractors and adhered to in a consistent way by fleet operators. Each requirement has been developed with the aim of reducing the risk of a collision between goods vehicles and vulnerable road users such as cyclists and pedestrians.

The CLOCS Standard is being implemented beyond the construction sector, for example in general distribution and local authority and TfL supply chains. FORS silver (applicable to all logistics operations) demonstrates compliance with the operations, driver and vehicle aspects of CLOCS and is equally relevant to both construction and non-construction sectors.

Structure of the standard

The *CLOCS Standard for construction logistics: Managing work related road risk* provides the standard for both construction logistic operators and construction clients.

Sections 2.1 and 2.2 are applicable to both operators and clients. Sections 3.1 to 3.3 are aimed at construction logistic operators and cover the three core areas of managing operations, vehicles and drivers.

Section 3.4 covers essential elements of site and project safety, giving specific responsibility to the construction client.

Terminology

Each section states the **requirement** (this is the exact requirement to be adhered to), explains the **purpose** of the requirement and offers a **demonstration** (indicates how the requirement should be met and demonstrated).

Certain language is used within this document with the following meanings:

- **Fleet operator** – any organisation or part thereof which operates one or more vehicle(s)
- **Client** – an organisation employing fleet operator contractors. This may be a developer employing a primary contractor or a primary contractor employing a sub-contractor
- **Shall** – to indicate something which is mandatory as part of the requirement or in order to achieve the requirement
- **Should** – to indicate something which is recommended as emerging practice
- **May** – to indicate permission or an emerging practice option
- **Vulnerable road user** – a pedestrian, cyclist, motorcyclist, equestrian or person of reduced mobility
- **Approved** – officially deemed acceptable by the client to meet a specific requirement or quality

Alignment to other schemes

A number of schemes aim to revolutionise the management of work-related road safety and promote a positive road safety culture. It is important that these schemes work together to minimise variation in requirements and maintain a level of consistency across the industry.

The Fleet Operator Recognition Scheme (FORS) is a national accreditation scheme designed to help road fleet operators in all sectors improve, measure and monitor operational performance and safety and demonstrate compliance and best practice. Whilst the scope of FORS is wider than CLOCS the schemes have been fully aligned at FORS silver level meaning that any FORS silver operator will automatically be compliant with CLOCS. Construction clients may implement CLOCS through planning conditions and procurement contracts and operators can demonstrate their compliance to CLOCS through FORS.

The Safer Lorry Scheme aims to ensure vehicles on London's roads are lawful and following best practice. Any CLOCS compliant operator entering London will be above and beyond the requirements of the Safer Lorry Scheme. Additionally, operators working on contracts for Transport for London will find that the Work Related Road Risk (WRRR) requirements are fully aligned with both CLOCS and FORS, again at FORS silver level.

CLOCS will continue to encourage and promote consistency across the industry through update of a common national standard.

Applicability and exemptions

2.1 Applicability

Scope

Applicable to all commercial vehicles delivering to, collecting from or servicing a project, premises or property where this standard applies unless otherwise indicated by the client.

All fleet operators serving contracts resulting in the use of vehicles for delivery and servicing activities are included in the scope of this standard unless otherwise indicated by the client.

All fleet operators shall comply with the standard in the timeframe instructed by the client in agreeing the contract. This shall not be more than 90 days from the start of a contract unless special circumstances apply.

This document applies to commercial vehicles ranging from all vehicles over 3.5 tonnes gross vehicle weight to articulated vehicles over 44 tonnes gross vehicle weight, including abnormal indivisible loads and engineering plant.

Demonstration

Clients shall specify whether the standard applies within contracts based on their assessment of risk. The client will determine, within their own contracts, whether this standard also applies to vehicles under 3.5 tonnes gross vehicle weight.

2.2 Exemptions

Scope

Where possible exemptions should not be permitted but the following may be considered at client discretion:

- Unplanned or unforeseen critical delivery or emergency visit
- Escorted abnormal indivisible load deliveries
- Non contracted utility companies - services that are not contracted by the client but have a statutory undertaking to access their own assets on site

Demonstration

If special exemptions are granted, the client should assess the level of risk by requesting a detailed risk assessment outlining how the contractor intends to minimse the risks.

Fleet operators shall present any case for exemptions to the client. They shall demonstrate why the exemption is necessary, rather than relying on current legal exemptions.

Clients may set their own criteria for which vehicle types fall into scope and any exemptions applied to specific operations.

Contractor queries regarding applicability and exemptions at specific sites should be directed to and dealt with by the client.

CLOCS Standard for construction logistic operators and clients: Managing work related road risk

3.1 Logistic operations requirements

3.1.1 Quality operation

Requirement
Fleet operators shall ensure the transport operation meets the standard of an approved independent fleet management audit.

Purpose
To ensure a baseline level of compliance against all regulatory requirements relevant to the road transport operation.

Demonstration
This shall be demonstrated through current certification from an approved independent audit body (such as the Fleet Operator Recognition Scheme (FORS) or other FORS-equivalent standard).

Certification shall be within the period specified by the client / contracting entity. This period shall not be more than 90 days from contract award.

Certification shall be renewed on an annual basis.

For further information:

- www.fors-online.org.uk

For further information:

- CLOCS Toolkit - Managing collision reporting and analysis

3.1.2 Collision reporting

Requirement
Fleet operators shall capture, investigate and analyse road traffic collision information that results in injury or damage to vehicles and property. All collisions shall be reported to their client or contracting entity.

Purpose
To create transparency in the supply chain and enable fleet operators and clients to work together to mitigate the risk of road traffic collisions and prevent re-occurrence.

Demonstration
A log of all collisions shall be maintained which shall include details of all evidence required to investigate an incident.

Reporting shall include lessons learned and remedial measures identified to help prevent re-occurrence of similar incidents.

Fleet operators should use an approved reporting mechanism such as CLOCS Manager (www.clocs-manager.org.uk) to report all traffic collisions that result in injuries or damage to vehicles and property.

Near-misses should also be recorded where possible.

3.1.3 Traffic routing

Requirement

Fleet operators shall ensure that any vehicle routes to sites or premises specified by clients are adhered to unless directed otherwise.

Purpose

To reduce the probability of collisions on routes to and from sites and premises.

Demonstration

Fleet operators shall properly communicate any routing and access requirements provided by clients to all drivers accessing a site.

Mobile or very temporary sites (e.g. emergency street works) are not subject to a routing requirement.

The circumstances (if any) under which drivers may deviate from a specified route such as temporary road closure, or road traffic accidents shall be clearly specified by the client.

Please also see Section 3.4.5 - Traffic routing.

Fleet operators should provide driver training, briefings or pre-programmed navigation systems to ensure the driver is aware of the specified route, the circumstances (if any) of deviating from the route and the resulting consequences of not adhering to the route.

There should be clear evidence that any deviations from the route as notified by the client or the public authority are addressed with the driver. The driver may be required to sign to acknowledge the infraction.

Fleet operators may ask drivers to demonstrate that they have understood any traffic routing or site access requirements by signing for them.

3.2 Vehicle requirements

3.2.1 Warning signage

Requirement

Fleet operators shall ensure that prominent signage is fitted to all vehicles over 3.5 tonnes gross vehicle weight that visually warns other road users not to get too close to the vehicle.

Purpose

To reduce the risk of close proximity incidents and increase road safety.

Demonstration

All vehicles over 3.5 tonnes gross vehicle weight shall display external pictorial stickers and markings to warn vulnerable roads users of hazards around the vehicle.

Vehicles 3.5 tonnes gross vehicle weight or less may display external pictorial stickers to warn vulnerable roads users of hazards around the vehicle.

Signage should not be offensive and should not give instructional advice to the vulnerable road user. The text point size should be legible by a cyclist at a reasonable distance from the vehicle.

3.2.2 Side under-run protection

Requirement

Fleet operators shall ensure fitment of side-guards to all rigid mixer, tipper and waste type vehicles over 3.5 tonnes gross vehicle weight that are currently exempt from fitment.

Purpose

To minimise the probability and severity of under-run collisions with vulnerable road users.

Demonstration

Fleet operators shall provide evidence that all rigid mixer, tipper and waste type vehicles over 3.5 tonnes gross vehicle weight are fitted with side-guards.

Fitment shall be on both sides of the vehicle unless this is proved impractical or impossible.

For further information:

- CLOCS Guide - vehicle safety equipment, sections 2.2, 2.3 and 2.4

3.2.3 Blind-spot minimisation

Requirement

Fleet operators shall ensure all vehicles over 3.5 tonnes gross vehicle weight have front, side and rear blind-spots completely eliminated or minimised as far as is practical and possible through a combination of fully operational direct and indirect vision aids and driver audible alerts.

Purpose

To improve visibility for drivers and reduce the risk of close proximity blind-spot collisions.

Demonstration

A combination of appropriate vision aids and driver audible alerts shall be fitted to the front nearside of all vehicles over 3.5 tonnes gross vehicle weight.

In addition, appropriate indirect vision aids shall also be fitted to the rear of all rigid vehicles over 7.5 tonnes gross vehicle weight.

Class V and VI mirrors shall be fitted to all vehicles where they can be mounted, with no part of the mirror being less than two metres from the ground.

All indirect vision systems shall be fully operational.

Fleet operators shall make regular checks and take all reasonable measures to ensure all indirect vision systems remain fully operational.

Fleet operators shall take steps to ensure that drivers recognise that use of indirect vision systems is an integral part of their job.

Fleet operators may consider specifying vehicles with high vision cabs and on road (N3) vehicles with increased direct vision rather than off-road (N3G) vehicles.

For left-hand drive vehicles, the blind-spot is on the off-side and affects the vehicle when turning right. Mirrors, cameras and sensors should therefore be fitted appropriately to cover this blind-spot

For further information:

- CLOCS Guide - vehicle safety equipment, section 2.4

3.2.4 Vehicle manoeuvring warnings

Requirement

Fleet operators shall ensure all vehicles over 3.5 tonnes gross vehicle weight are equipped with enhanced audible means to warn other road users of a vehicle's left manoeuvre.

Purpose

To reduce the risk of close proximity collisions by audibly alerting vulnerable road users to vehicle hazards.

Demonstration

Vehicles over 3.5 tonnes gross vehicle weight shall be fitted with equipment to audibly warn vulnerable road users when a vehicle is turning left.

All vehicle manoeuvring warning systems shall be fully operational.

Fleet operators shall make regular checks and take all reasonable measures to ensure audible warning devices remain fully operational.

Fleet operators shall take steps to ensure that drivers recognise that activation of the device is an integral part of their job.

Vehicles over 3.5 tonnes gross vehicle weight should be fitted with operational equipment to audibly warn vulnerable road users when a vehicle is turning right or reversing.

Vehicles under 3.5 tonnes gross vehicle weight may be fitted with operational equipment to audibly warn vulnerable road users when a vehicle is reversing.

Enhanced audible warnings may be supplemented by visual warnings to vulnerable road users

Audible warning devices should be fitted with a manual on/off switch or reset button for circumstances, such as working at night, where it may be appropriate for the device to be de-activated.

For left-hand drive vehicles, the blind-spot is on the off-side and affects the vehicle when turning right. Audible warnings should therefore warn of a vehicle's right manoeuvre.

For further information:

- CLOCS Guide - vehicle safety equipment, section 2.5

3.3 Driver requirements

3.3.1 Training and development

Requirement

Fleet operators shall ensure that all drivers (including those exempt or not in scope of Driver Certificate of Professional Competence) undergo approved progressive training and continued professional development specifically covering the safety of vulnerable road users.

Purpose

To ensure that all drivers have the knowledge, skills and attitude required to recognise, assess, manage and reduce the risks that their vehicle poses to vulnerable road users.

Demonstration

Each driver shall undertake approved theoretical training which includes safety of vulnerable road users.

Awareness training on the safety of vulnerable road users shall be progressive throughout the life of the contract.

Drivers shall undertake training in the use and limitations of supplementary vehicle safety equipment.

Progressive training should include on-cycle hazard awareness and use an appropriate mix of theoretical, e-learning, practical and on the job training.

Training content should include but not be limited to:

- Induction to the company
- Induction to new contracts covering familiarisation with new routes, vehicle types and sites
- Refresher training to ensure knowledge and skills are fully embedded
- Remedial training to rectify any deficiencies identified through reported collisions or previous training

Where applicable this training may be aligned to Driver Certificate of Professional Competence.

For further information:

- TfL Work Related Road Risk (WRRR) driver training - approval guidance for training providers

3.3.2 Driver licensing

Requirement

Fleet operators shall ensure that a system is in place to ensure all drivers hold a valid licence for the category of vehicle they are tasked to drive and any risks associated with endorsements or restriction codes are effectively managed.

Purpose

To ensure that all drivers employed by the company hold a valid licence and any risks presented through an accumulation of endorsements are effectively monitored and managed.

Demonstration

To demonstrate that this requirement is fully met, fleet operators shall ensure that all driver licences and endorsements are verified through a service that directly accesses current Driver and Vehicle Licensing Agency (DVLA) data.

Frequency of licence checks should be against an approved risk scale and licences shall be checked as a minimum every six months.

Fleet operators shall have a policy in place to ensure drivers report all professional or personal driving infringements to the responsible person who runs daily transport operations.

For further information:

- CLOCS Guide - managing driver training and licensing

3.4 Construction client requirements

3.4.1 Construction Logistics Plan

Requirement

Clients shall ensure that a Construction Logistics Plan is in place and is fully complied with.

Clients should approach this in a spirit of partnership with fleet operators, who may have valuable views on how to achieve safety goals.

Purpose

To reduce the negative transport effects of construction work on local communities and the environment by providing a tool to minimise construction trips and reduce the potential for collisions.

Demonstration

Clients shall produce an approved Construction Logistics Plan which includes measures to minimise vehicle trips and reduce the opportunities for collisions with vulnerable road users, for example by considering specific sites such as schools near to the site.

Clients shall ensure contractors are aware of and understand their obligations under the Construction Logistics Plan.

A Construction Logistics Plan may be produced in its own right, or as part of fulfilling the requirement within this standard.

For further information:

- TfL Construction Logistics Plan Guidance for developers
- TfL Construction Logistics Plan Guidance for planners

3.4.2 Suitability of site for vehicles fitted with safety features

Requirement

Clients shall ensure that the condition of sites is suitable for vehicles fitted with safety features and side under-run protection.

Purpose

To ensure the site is suitable for all vehicle types fitted with safety features and side under-run protection.

Demonstration

Clients should carry out regular reviews of the topography of the site and where necessary implement diversions as the site landscape changes.

Clients should ensure that the ground is graded where the construction phase allows.

3.4.3 Site access and egress

Requirement

Clients shall ensure that access to and egress from the site is appropriately managed, clearly marked, understood and clear of obstacles.

Purpose

To reduce the risks associated with vehicles turning or reversing in order to access or egress from site.

Demonstration

Clients shall ensure that effective traffic management principles are adhered to.

Traffic management should first attempt to eliminate hazards by design e.g. one-way systems, traffic lights and calming measures.

Where visibility is restricted or where it is deemed necessary, clients should ensure that a trained marshall is available to assist with vehicle manoeuvring.

Where appropriate clients may consider the use of additional equipment such as blind-spot safety (e.g. Trixi) mirrors to aid the driver's view of the road.

3.4.4 Vehicle loading and unloading

Requirement

Clients shall ensure that vehicles are loaded and unloaded on-site as far as is practicable.

Purpose

To reduce risk of injury by segregating loading and unloading activity from the public.

Demonstration

Clients should provide a stable, graded surface on-site for vehicle loading and unloading.

Clients should ensure an appropriate person is nominated to manage all deliveries and collections to site and supervise the loading and unloading process.

Clients should identify a suitable 'off-loading area' and ensure that approved loading and unloading plans are in place where it is not possible to unload on site.

3.4.5 Traffic routing

Requirement

Clients shall ensure that a suitable, risk assessed vehicle route to the site is specified and that the route is communicated to all contractors and drivers. Clients shall make contractors and any other service suppliers aware that they are to use these routes at all times unless unavoidable diversions occur.

Purpose

To ensure that construction traffic uses the safest and most appropriate routes to site.

Demonstration

Clients shall ensure that options to reduce peak hour deliveries to a site, including coordinating with neighbouring sites, have been considered and where identified, arrangements to minimise peak hour deliveries implemented.

The circumstances (if any) under which drivers may deviate from a specified route such as a temporary road closure, or road traffic accidents shall be clearly specified by the client. Please also see section 3.1.3 Traffic routing.

Mobile or very temporary sites (e.g. emergency street works) may not be subject to a routing requirement.

Clients should demonstrate this by distributing maps and any other vehicle routing information to all companies and drivers accessing the site.

Where appropriate, clients may consider the use of additional equipment such as blind-spot safety (e.g. Trixi) mirrors or LED indicator trailer lights at high risk junctions in the vicinity of the site.

3.4.6 Control of site traffic, particularly at peak hours

Requirement

Clients shall consider other options to plan and control vehicles and reduce peak hour deliveries.

Purpose

To reduce the risk of congestion and collisions in the vicinity of the site. To minimise site deliveries, collections and servicing access during peak hours.

Demonstration

Clients should demonstrate as part of their Construction Logistics Plan the options they have considered and acted upon to reduce the amount of trips to site during peak hours. This may include use of web / paper based delivery booking systems, consolidation centres, vehicle holding areas, deliveries during off-peak times or the use of alternative modes.

Care must be taken to ensure that undue pressure is not placed on drivers to meet time slots through contractual, economic or management pressure when using a delivery booking system.

For further information:

- CLOCS Compliance Toolkit
- CLOCS Guide - Managing supplier compliance
- CLOCS Guide - Manging work related road risk in contracts

3.4.7 Supply chain compliance

Requirement

Clients shall ensure contractor and sub-contractor compliance with requirements 3.1.1 to 3.3.2.

Purpose

To ensure that requirements are being adhered to across the supply chain.

Demonstration

The client should ensure that it is a contractual requirement for the contractor to check vehicles entering site and to take the appropriate action under the contract. Presentation of a CLOCS certificate does not necessarily mean an operator is compliant, only that they have committed to adhere to the CLOCS Standard.

The client should request from the contractor a plan and / or process for complying with the contract.

The client should also undertake regular audits of the contractor's process and compliance checks. This audit should include random vehicle compliance checks undertaken by the client. The client may request that every reporting period the contractor should submit to the client a summary of those checks and details the corrective action taken in the case of non-compliance.

Clients should factor in a review of collision reports provided by the contractor under requirement 3.1.2 Collision Reporting

The client should provide a point of contact for contractors in order that they may direct queries to the relevant person or department.

Case studies and considerations for implementation

4.1 Considerations for implementation

The aim is for the *CLOCS Standard for construction logistics: Managing work related road risk* to be included within construction logistics contracts, and adhered to as part of safe construction logistic operations. In implementing the standard, clients and operators should consider:

- Ensuring those responsible for procurement or tendering within the organisation are fully aware of the requirements, their purpose and the ways in which meeting the requirements can be demonstrated
- Update relevant health and safety and procurement policies and strategies to include the *CLOCS Standard* and requirements
- Ensure that potential suppliers, contractors and sub-contractors are informed of the *CLOCS Standard* and requirements as soon as possible in the procurement process for new contracts, and make clear reference to the *CLOCS Standard* and requirements within tender documentation
- Be realistic in the timeframes given to operators to comply in the case of variations to existing contracts (though within the 90 days stated in section 2.1)
- Set up a method of ensuring and monitoring compliance with the *CLOCS Standard* and requirements, and the actions to be taken in the case of non-compliance (as per requirement 3.4.7)
- Be aware of local authority planning requirements and how they may impact journeys to and from sites

Crossrail compliance assurance

Crossrail

On average 1000 vehicles from over 850 companies deliver to 47 Crossrail construction sites every day. All deliveries are planned, co-ordinated and recorded via Crossrail's bespoke information management based Vehicle Movement Planning System (VMPS). This is an important aspect of the project's commitment to compliance assurance, whilst avoiding the potential for grid lock and bringing London to a stand still.

To manage such a significant logistical undertaking, Crossrail had to encourage a culture of teamwork to support a unified approach to planning vehicle movements and compliance assurance and enable the free flow of information between the client and all contractors. Crossrail's approach has been to design, build and implement a VMPS, supporting processes and compliance assurance training and procedures.

The VMPS allows over 400 project stakeholders to submit vehicle delivery plans via a web application and record real-time vehicle safety compliance checks and arrival rates via personal data assistants (PDAs). This allows a complicated logistics task to be co-ordinated centrally, lessens traffic congestion by sharing information amongst stakeholders and reduces public safety impacts by checking and monitoring vehicle safety compliance rates.

Key facts:

- 30 main works contracts use the VMPS to plan, record and compliance check their vehicle movements
- The VMPS has over 400 users within Crossrail's supply chain.
- The VMPS uses 80 PDAs including an iPhone App to record vehicle arrivals and safety compliance checks
- VMPS users have undertaken over 558,000 safety compliance checks to date
- 852 hauliers with a total of 54,000 HGVs and vans from Crossrail's supply chains have been compliance checked every time they visit site
- Over 650 personnel have attended formal compliance assurance training
- The largest number of movements processed by the VMPS across all Crossrail sites in one day was 1466 vehicles

This joining up of the planning and compliance assurance process is an exemplar of information management, teamwork and best practice.

Today the VMPS is supported by a mobile platform with 80 handheld computers and iPhones used by construction staff to record the compliance of planned and unplanned vehicles arriving and leaving worksites. The use of mobile devices has been key to generating data in real-time on both vehicle movements and compliance.

Other projects continue to visit Crossrail to find out about the VMPS and understand how it is being used. This not only enables Crossrail to share best practice but it stimulates a quality approach to compliance assurance that, before the CLOCS Standard, may not have been considered applicable by other construction projects.

Reducing road risk with a common standard

Lafarge Tarmac

Leading sustainable building materials group Lafarge Tarmac fully supports the FORS standard. It aligns with the company's commitment to be at the forefront of continually improving driver and vehicle safety standards, both within its own business and the wider industry. The company believes it is crucial for the industry to adopt a common safety standard which can deliver safety enhancements quickly and lead to behavioural change from drivers now and in the future.

Lafarge Tarmac has taken a proactive approach and has a number of initiatives underway, all of which support its commitment to improving safety for all road users. The company's entire London fleet has been fitted with new safety equipment, including side under-run bars and side sensors with external audible warnings. This standard is now being extended nationally across the business, with a plan to retro-fit 1,500 vehicles going forward.

The company has also recently begun a programme of FORS accreditation for all individual contract hauliers who work on its behalf. This equates to approximately 2,000 drivers and vehicles. In addition, all Lafarge Tarmac Transport Supervisors are receiving FORS audit training. This will ensure that the standard can be implemented at a national level and that work can be done with the contract haulier supply chain to provide advice on the required vehicle modifications.

Much of the company's work is being co-ordinated between its Transport and Safety and Health teams, led by the new role of Transport, Safety and Health Manager. Adding this position to the business structure underlines its commitment to reducing road risk across the Lafarge Tarmac fleet. The manager's remit includes leading on the company's 'Driving Safety' initiative. This sees its transport teams from across the UK working to deliver challenging plans that continually develop logistics safety standards by focusing on each aspect of the logistics and delivery process.

Implementation of policies and initiatives to improve vulnerable road user safety

Mineral Products Association (MPA)

The Mineral Products Association (MPA) is the trade association representing the aggregates, asphalt, cement, concrete and related industries. MPA members produce 90 per cent of these materials supplied in the UK and the sector is by far the biggest element of the construction supply chain, supplying over 200 million tonnes of materials annually.

For many years improving the health and safety of employees and contractors has been a major priority of the industry. In early 2011, as a result of increasing concerns about road safety and in particular the risk of collisions between delivery vehicles and cyclists, MPA launched a Cycle Safe Campaign with a six-point action plan comprising:

1. Promote driver and industry awareness
2. Promote cyclist and public awareness
3. Improve driver training
4. Encourage the use of appropriate vehicle technology
5. Liaison with schools
6. Work in partnership

There has been progress in all areas, for example the industry has implemented Driver Certificate of Professional Competence (CPC) approved Safeguarding Vulnerable Road Users training for industry drivers, focussed on the risks associated with construction delivery vehicles.

Member companies have strongly supported the Metropolitan Police Exchanging Places initiative in London and run similar public events outside London.

In 2012 MPA agreed a Vulnerable Road User Safety policy requiring extra driver training and the fitting of additional safety equipment to new vehicles and also a retro-fitting programme.

Given that the industry will continue to deliver materials to a changing mix of thousands of construction sites throughout the UK, MPA is clear that delivery vehicles will have to co-exist with cyclists and other vulnerable road users, as we all have a responsibility to help make our roads safer.

Additional direction indicator lamps

Hanson Cement

Hanson Cement, part of the HeidelbergCement Group, is a leading supplier of heavy building materials to the UK construction industry. With depotsnationwide and a fleet of 190 HGVs, Hanson are always looking to enhance operations and make continued safety and efficiency improvements.

Operating 44 tonne articulated vehicles in heavy urban traffic has its challenges especially when making turns and manoeuvring. In addition to the flashing cycle sign fitted to the rear of the tankers, we have developed a system along with our supplier to enable the side marker lights of the trailer to operate with the vehicle indicators.

The manufacturers standard for lighting on articulated trailers is only to have side marker lights operated with the sidelights of the trailer. It became apparent that a cyclist could pass the rear of our vehicle and not see any direction indicators until they had reached the vehicle cab, which could lead to a cyclist being trapped or struck by the vehicle if it needed to take a wide swing to access a side road.

The standard side marker lights on the trailer were replaced with LED lighting that operates both as marker lights and direction indicators. These lights are not only brighter than the standard bulbs but are also not prone to failure so the driver can be assured that these will operate when needed.

Another advantage is that these lights also operate with the vehicle hazard lights, which gives greater warning to personnel when vehicles are manoeuvring on customer sites.

Working with industry to improve the management of road safety

Costain

Costain is recognised as one the UK's leading engineering solution providers which has a portfolio spanning more than 150 years of technical excellence. Our strategy is identifying, developing and implementing innovative, sustainable solutions to meet increasingly complex large scale national needs.

In 2013 we launched our construction logistics standards which placed requirements on our supply chain's HGV vehicles operating within the M25 to comply with the FORS bronze standard to prevent harm occurring between vulnerable road users and any HGV vehicles under our control.

Building on the campaign we have now moved our emphasis on to embedding the CLOCS standard on a national basis both internally and with our supply chain. As a responsible business we recognise the significance of implementing the CLOCS standard which is a key influence in ensuring that we meet our client and industry expectations for protecting vulnerable road users and our own people.

To ensure we remain at the forefront of all developments of this initiative we continue to be an active member of the CLOCS partnership and are recognised as a CLOCS Champion.

Costain' s active involvement in CLOCS represents our commitment as a responsible company to improving the image of construction engineering by delivering key priorities to operate safely, efficiently and responsibly to ensure we operate in an environment free from harm.

Costain recently hosted a cycle safety event in London. The 'Exchanging Places' event brought together local police, cycling safety specialists, haulage companies, our staff and the local community to learn about the dangers of moving too close to trucks and the limited visibility HGV drivers have around their vehicles.

Extending cycle safety standards beyond HGVs to mobile plant

Laing O'Rourke

Laing O'Rourke, together with its services and logistics provider Select, has fitted its entire nationwide fleet of HGVs with cameras and vulnerable road user safety equipment.

Select's camera systems have advanced recording capability that allows the company to use the recorded data to better understand how vehicle movements impact other road users. This has allowed Select to plan and adjust its operations to reduce risk. The camera systems are also a powerful tool in encouraging professional driving standards.

Select operates some of the largest items of construction plant in the industry. It takes a 'catch all' approach to vulnerable road user protection and has extended the HGV scheme to include mobile cranes and concrete pumps, which are not currently covered by HGV safety rules.

The programme has met with widespread driver approval and is being supported with the adoption of the new work related road risk standard nationwide.

London Construction Consolidation Centre

Wilson James

Wilson James's LCCC is the only dedicated consolidation centre in London, which supports materials management for construction in the capital. It is estimated to reduce supplier vehicles travelling to projects it supports by 68 per cent.

By investing in safety equipment for vehicles, and training for staff, the centre contributes to making the roads a little safer for all users.

LCCC vehicles are all fitted with Class V and VI mirrors, cyclist proximity sensors and side-guards to reduce the likelihood of incidents with cyclists and pedestrians. Warning signs for cyclists are displayed to the rear of vehicles and drivers are undertaking Driver Certificate of Professional Competency (DCPC) training and receiving regular toolbox talks on cycle awareness.

Drivers know their routes and do not block cycle lanes waiting near to site. Ninety-eight per cent of consolidated deliveries arrive on time.

Investing in safe vehicles

O'Donovan Waste Disposal Ltd

O'Donovan, one of London's leading waste management companies, is the only independent waste operator to have achieved FORS Gold for four consecutive years.

Prior to becoming CLOCS Champions, O'Donovan, as a forward thinking organisation, retrofitted its fleet with the optimum in safety equipment to protect vulnerable road users and reduce the stress on its drivers.

By putting itself at the forefront of piloting, testing and embracing vehicle safety standards, O'Donovan used its experience to help develop CLOCS safety standards, demonstrating that what was a niche practice a few years ago, is now a common industry standard.

Through CLOCS, O'Donovan has progressed from the standard retrofit practice and is taking vehicle safety to the next level. In 2015 the company revealed the latest editions to its fleet, a series of factory-fitted, safety-optimised vehicles, having worked closely with vehicle manufacturers to determine the new vehicles' design.

The features of the new vehicles include:

- Lowered driving position
- Fully glazed nearside lower doors
- Nearside monitor to project the view of blind-spots
- Revised suspension to lower the cab
- Unique low-profile side-guards

These innovative features all combine to help improve O'Donovan drivers' direct vision of other road users and provide increased protection for cyclists and pedestrians.

O'Donovan has also lead the way in trialling a distinctive skip lorry with unique safety features, offering the driver an unparalleled view of vulnerable road users.

As CLOCS Champions O'Donovan is supremely confident that its fleet operates well above what is expected of the law, embraces industry best practice and exceeds the expectations of its customers' safety requirements. Over one third of the company's fleet comprises tippers and grabs and since becoming a CLOCS Champion, O'Donovan has seen a 44 per cent reduction in accidents in these vehicles since 2012.

"We would love to see more SMEs coming on-board with CLOCS in the future, to better represent the voice of the smaller operator and prove it's a standard which should be embraced by all of us".

Sharing award-winning road safety best practice

FM Conway

FM Conway is the leading infrastructure services provider in London and the South East. Working with Transport for London and half of the London Boroughs, it carries out vital construction works on London's road network as well as maintaining many of the capital's parks, stadiums, venues and communities.

The company operates one of the largest HGV fleets in the region, with 258 vehicles transporting over one million tonnes of aggregates, asphalt and recycled materials a year. They undertake approximately 360,000 journeys annually, coming into contact with vulnerable road users on a daily basis.

As a responsible fleet operator, FM Conway has made the safety of vulnerable road users one of the business' top priorities, and has invested heavily to achieve this ambition. The company has completed a £300,000 retrofit programme to install the latest safety measures to its fleet, including sensors, side-guard rails and blind-spot cameras.

In 2014, FM Conway became one of the first companies in the world to be awarded the internationally recognised ISO 39001 Road Traffic Safety management certification from the BSI. In the first three months after the system went operational, the business saw a 60 per cent year-on-year reduction in accidents for the same quarter the previous year. In the same year, FM Conway was also awarded the FORS Gold standard for the second year running; a third consecutive Gold Award from the Royal Society for the Prevention of Accidents (RoSPA); and the Vulnerable Road User Safety Award at the Chartered Institute of Logistics and Transport Annual Awards.

FM Conway's drivers are closely involved in the process of upgrading the company's fleet and safety protocols; helping to gather data collected about the technologies installed to inform future improvements. They are also provided with extensive ongoing safety training, through TfL's Safer Urban Driving training programme, the London Highways Academy of Excellence (www.lhae.co.uk), and FM Conway's partnerships with cycle training provider Cycle Confident and the Metropolitan Police's 'exchanging places' programme.

Being involved in CLOCS has enabled FM Conway to promote its best practice in vulnerable road user safety. Through CLOCS, the company has engaged directly with its supply chain and the rest of the industry, as well as representatives from vulnerable road user organisations, whose feedback can be incorporated into the business' approach going forward. FM Conway has been actively assisting the CLOCS team in promoting the Standard across the country, and the company's drivers have been provided with valuable opportunities to take part in CLOCS schemes and engage with vulnerable road users and other key stakeholder groups.

As part of FM Conway's investment in road safety, the company has implemented a comprehensive central reporting framework for accidents and incidents. This, coupled with the new technologies and driver training, has seen a significant decline in incident numbers and a reduction in insurance premiums. These benefits would not have been possible without FM Conway's investment in vulnerable road user safety and its partnership with CLOCS.

Revolutionising vehicle inspections to ensure vehicle and road safety

McGee

McGee is a leading demolition and civil engineering contractor and is trusted to undertake some of London's most complex projects.

As an operator of a large fleet, McGee has revolutionised the traditional pen-and-paper-based daily vehicle inspection process by 'going digital'.

Drivers previously completed a defect book as part of their daily vehicle inspection. Any vehicle issues found were reported to the Transport Office via a phone call, which typically led to a series of additional calls and emails, before the appropriate maintenance could be arranged.

Following a series of successful trials in 2014 and completion of driver training in early 2015, McGee's drivers now carry out a 360° daily vehicle inspection using a tablet. Each vehicle is fitted with 4 Near Field Communication (NFC) tags, which are located on the front, nearside, offside and inside the cab. After the GPS location is detected, drivers are prompted of everything they need to check and are required to scan their tablet on the NFC tags.

If a defect is reported, it will reach the Transport Manager in seconds and the issue can be actioned immediately – the app's photo-taking feature particularly helps speed up the appropriate resolution. If there are no defects to report, the driver provides a digital signature and will 'save and submit' the report. Reports are stored electronically; therefore the process is fully auditable.

The vehicle inspection app is built on a Mobilengine platform and NFC technology and was designed to revolutionise the time consuming, inefficient paper-based process. It enhances vehicle safety, improves workflow and allows for the whole process to be more visible and controllable.

The system gives McGee the knowledge that every vehicle is leaving in the right condition, it provides a seamless user experience, ensures fast execution and full compliance. The mobility of the solution enables the Transport Manager to be aware of all matters concerning the McGee fleet whenever and wherever. This is especially important because of McGee's ongoing work with CLOCS to help protect vulnerable road users.

CLOCS monitoring and enforcement trial

London Borough of Camden

The London Borough of Camden provides local government services for 212,000 people. Our fleet is currently FORS silver accredited and working towards gold. In January 2014, we implemented a WRRR policy for contractors using large vehicles.

As demonstrated by the Camden Transport Strategy, we are committed to prioritising and promoting walking and cycling. We are also committed to improving road safety for all road users. Extensive private construction activity across the borough, in addition to our own Community Investment Programme (CIP) construction activities, presents an added challenge in this respect.

Adopting the CLOCS Standard helps mitigate the negative impacts of construction traffic, and is a natural progression from our existing WRRR policy. We are now undertaking a compliance monitoring trial across private developments within the borough.

CLOCS terms are included in CIP contracts, and form part of the S106 legal obligation for private developments that require the completion of a Construction Management Plan (CMP). Developers are encouraged to work with us to agree vehicle routes and timings.

As part of our monitoring trial, developers will be obliged to demonstrate that they are implementing the CLOCS Standard on their site. The CMP provides the basis by which they are monitored, and also acts as the legal framework should enforcement be necessary.

Benefits to adopting CLOCS include revisions to some internal processes which have resulted in improved communication between key teams. This CLOCS ethos also supports the greater emphasis that we are placing on community wellbeing being the responsibility of the developer.

Incorporating CLOCS into our existing processes is a clear demonstration of commitment to our Transport Strategy; to deliver significant road safety improvements while increasing walking and cycling rates, and our desire to lead by example. We aim to continue to develop a monitoring and enforcement trial that is assistive in its approach, whilst working with other boroughs to promote the adoption of CLOCS, and to highlight the wider benefits for the community.

Building a culture of cycle safety excellence

Mace Group

Mace is an international consultancy and construction company offering integrated services across the full property and infrastructure life cycle.

The safety of people is at the heart of what Mace does and the company is working to transform its approach to off-site construction logistics for the projects it delivers. Mace is proud to be part of the industry forum committed to improving road safety.

In line with the vision to develop a common industry standard that reduces risks posed by construction vehicles to vulnerable road users, Mace have implemented the following cycle safety measures:

- A robust review of project delivery arrangements such as routes to site, access arrangements, signage and barriers
- New FORS accreditation and registration requirements for suppliers delivering to Mace projects and new vehicle standards for fleet and transport operators in line with the proposed industry standard
- Earlier planning actions for construction logistics for projects
- New auditing processes for projects and across the supply chain
- Engagement with clients and their people through cycle safety events
- New training and development events for Mace staff, particularly those who cycle to and from work

Mace has a long-standing commitment to improve project start up processes; the company believes that effective planning and strong leadership will help to influence positive behaviours that help to create a safety culture.

Mace will continue its work to reduce risks to cyclists by setting high safety standards across all our business activities, and promoting a culture of safety excellence.

Bringing CLOCS to civil engineers

Institute of Civil Engineers

The Institution of Civil Engineers (ICE) is a professional Institution with over 80,000 members in more than 150 countries. We promote the practice of civil engineering and support civil engineers and technicians by awarding professional qualifications, ensuring they work to high standards, and helping them to develop their careers.

As the profile of the danger posed by off-site construction vehicles has risen, we need to educate our members in the risk that HGVs can pose to VRUs, as well as the risk posed to their own business and reputation, and disseminate best practice in mitigating and managing such risk.

ICE established a Cycle Working Group specifically to examine and promote the development of infrastructure, legislation and practice which facilitates the safe movement of cyclists. This led ICE to become a pioneering CLOCS Champion.

ICE produces an annual State of the Nation report which is circulated to members, MPs and Government departments. Within our 2013 Transport report, we voiced widespread concerns over safety and conflict with motorised road-users, particularly heavy-vehicles, recommending that this should be addressed by:

- drivers of heavy-vehicles undergoing specialist training and certification
- heavier penalties for careless or incompetent drivers
- the construction industry, whose vehicles pose a particular hazard to cyclists, should adopt the same level of health and safety standards in its off-site operations as on-site[1]

ICE supported the recommendation to amend Directive 96/53 last year by writing to the DfT and the European Commission.

Being a CLOCS champion has helped ICE stay at the forefront of new technology and practice, enabling us to help our members adopt higher and ethical standards. ICE will continue to attend CLOCS working groups and progress events and contribute to development of the scheme.

We will be writing to all Local Authorities of the Cycling Ambition Cities encouraging adoption of the CLOCS Standard and supporting wider roll-out with a strong message to our members who have influence over HGV safety across the UK.

1 ICE State of the Nation Transport (2013)

CLOCS inspires resolve to ramp up campaign

See Me Save Me

See Me Save Me (SMSM) is a campaign founded in 2009 following the death of 30-year-old Eilidh Cairns who was run over from behind by a tipper lorry whilst cycling to work. It calls for elimination of collisions between HGVs and VRUs.

Eilidh's sister, Kate, a civil engineer, quickly realised that the death of her sister was not a unique catastrophe but that similar such deaths were happening on a regular occurrence with systemic failure at many levels.

The campaign calls for best practice in vehicles, drivers and operations; for specification of such standards in contract documents; for off-site safety to be treated with the same sincerity as on-site safety meaning proper reporting and accountability equivalent to RIDDOR, and sound investigation equivalent to the HSE criteria. It also aims to challenge the legal and coronial system, which does little to prevent further deaths. This failure was only too stark when the same HGV driver ran down and killed a pedestrian 15 months later.

The campaign has made massive progress in changing public and political attitudes, amending legislation and influencing policy at European, national and local level. Success and credibility has earned a high profile with hundreds of messages of support, coverage by national and trade press, and national TV and radio.

SMSM is a pioneering champion of CLOCS, which has been a direct answer to many of the campaign calls. This is truly welcome and encouraging. CLOCS members showing willingness to be challenged has been hugely rewarding and reassuring.

The paradigm shift in industry thinking has inspired the campaign to seek charitable status moving from the existing stretched volunteer-lead approach to ensure a stronger, focussed, resourced, influential campaign bringing faster change.

SMSM will continue to partake in evolution and development of the standard; to raise the profile of pedestrian deaths which receive very little media coverage; and to work with the enlightened leaders to showcase best practice and present a compelling case for the roll out of the scheme far beyond London, right across industry, and down the supply chain.

Progress, next steps and further information

5.1 Progress to date

Since the launch of the CLOCS Standard in December 2013, the construction industry has opted to take ownership of work related road risk beyond legal requirements. A wide range of construction clients, contractors and fleet operators have openly committed to implement and adhere to the requirements of the CLOCS Standard by signing a memorandum of understanding. A full list of CLOCS champions, those committing to take responsibility of safety beyond the site gate, can be found at **www.clocs.org.uk/links-to-partners**.

CLOCS is making progress in other areas as well. In particular, CLOCS has worked with the top UK vehicle manufacturers to stimulate more creative vehicle design solutions with increased direct driver vision. CLOCS hopes to see these vehicles become a regular sight on the roads in the not too distant future.

The CLOCS Manager incident and collision reporting system was launched in September 2014 to encourage and assist operators to log any work related road incidents or near misses. It also provides a reassurance to clients to know that their suppliers are actively logging incidents, benchmarking against others in the industry and learning from similar experiences.

New and innovative research projects have been commissioned to support the requirements of the CLOCS Standard and allow for evidence-based decision making. It is important to CLOCS that everything we do has the potential to improve conditions on the roads and it is crucial that this work is robustly supported by research.

5.1 Next steps

The *CLOCS Standard for construction logistics: Managing work related road risk (WRRR)* is a key step in improving the management of work related road risk by providing a common standard for use by UK authorities and construction logistics clients and operators.

The standard is supported by supplementary guidance that will assist organisations in implementing and ensuring compliance with the requirements. Supplementary guidance has been produced in the same way as the requirements within this document – in close collaboration with construction industry organisations and associations.

The requirements within this document are to be kept under review in order to take into account collective feedback, new research findings and emerging practice in relation to managing work related road risk.

5.2 Further information

For further information visit www.clocs.org.uk

An electronic version of this document can be downloaded from the following link:

CLOCS Standard for construction logistics: Managing work related road risk (WRRR) 'A construction industry initiative to improve vulnerable road user safety'
http://www.clocs.org.uk/standard-for-clocs/

CLOCS Guides, Toolkits and associated forms can be downloaded from:
http://www.clocs.org.uk/clocs-guides/

· CLOCS Guide - Managing driver training and licensing

· CLOCS Guide - Managing work related road risk in contracts

· CLOCS Guide - Managing supplier compliance

· CLOCS Guide - Vehicle safety equipment

· CLOCS Toolkit - Managing collision reporting and analysis

· CLOCS Compliance Toolkit

Further useful information can be found in the following publications:

Construction logistics and cyclist safety - summary report
Transport Research Laboratory
http://www.trl.co.uk/online_store/reports_publications/trl_reports/cat_road_user_safety/report_construction_logistics_and_cyclist_safety_summary_report.htm

Construction logistics and cyclist safety - full technical report
Transport Research Laboratory
http://www.trl.co.uk/online_store/reports_publications/trl_reports/cat_road_user_safety/report_construction_logistics_and_cyclist_safety_technical_report.htm

Driving at work: Managing work-related road safety
Department for Transport / Health and Safety Executive
http://www.hse.gov.uk/pubns/indg382.pdf

Improving road safety through procurement
Transport for London
http://www.clocs.org.uk/wp-content/uploads/2014/05/improving-road-safety-through-procurement.pdf

Construction Logistics Plan Guidance for developers
Transport for London
http://www.clocs.org.uk/wp-content/uploads/2014/05/construction-logistics-plan-guidance-for-developers.pdf

Construction Logistics Plan Guidance for planners
Transport for London
http://www.clocs.org.uk/wp-content/uploads/2014/05/construction-logistics-plan-guidance-for-planners.pdf

Work Related Road Risk (WRRR) driver training - approval guidance for training providers
Transport for London
http://www.fors-online.org.uk/cms/work-related-road-risk-training-information-for-training-providers/

Further information on the Fleet Operator Recognition Scheme (FORS) is available from www.fors-online.org.uk

Further information on the Safer Lorry Schme is available from
https://tfl.gov.uk/info-for/freight/safer-lorry-scheme

Road Safety Statistics
Transport for London
https://tfl.gov.uk/corporate/publications-and-reports/road-safety

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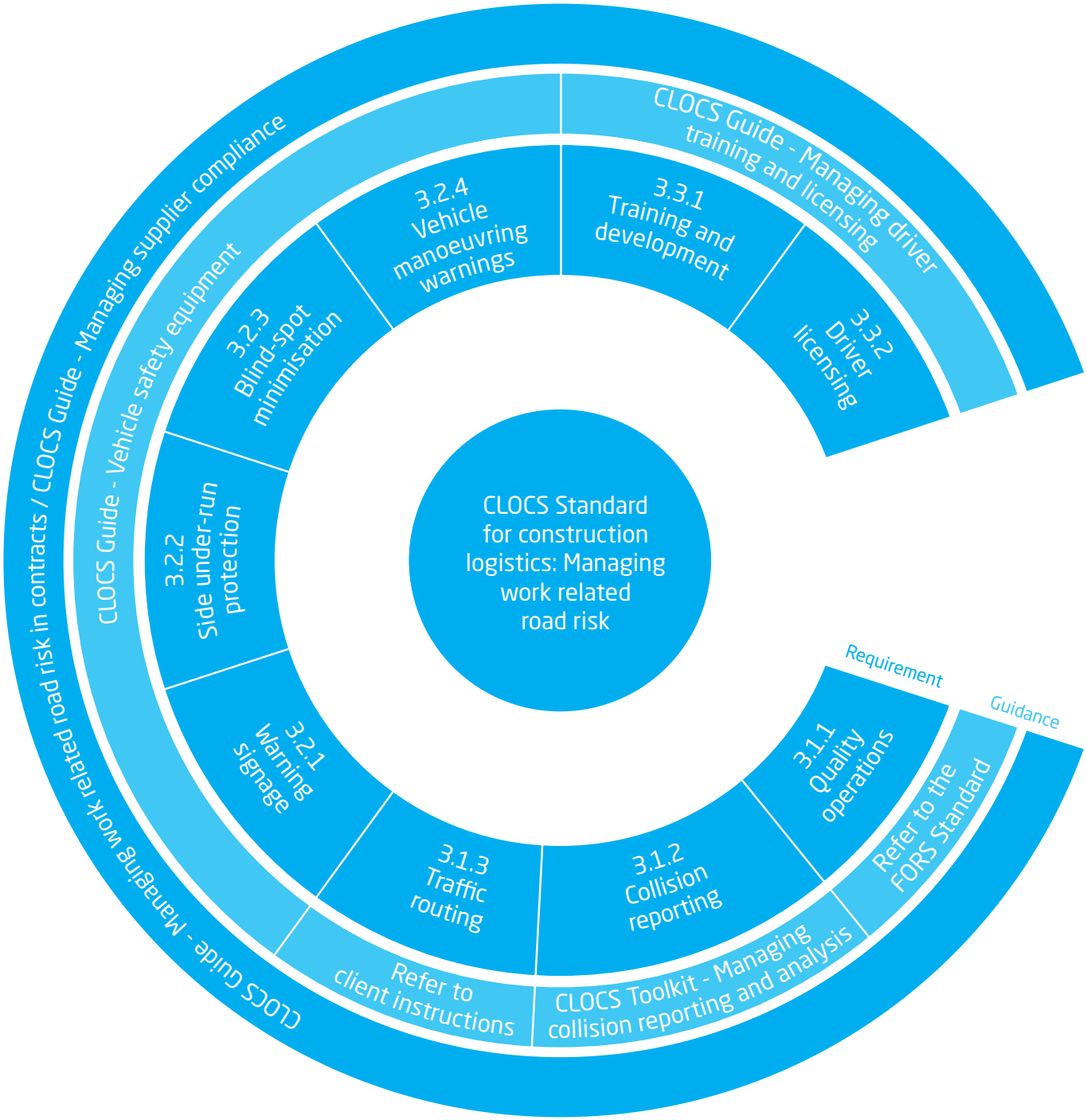
Acknowledgement is given to the following organisations in the development of the *CLOCS Standard*:


CLOCS Standard for construction logistics: Managing work related road risk
CLOCS Guide - Managing driver training and licensing
3.3.1 Training and development
3.3.2 Driver licensing
CLOCS Guide - Vehicle safety equipment
3.2.4 Vehicle manoeuvring warnings
3.2.3 Blind-spot minimisation
3.2.2 Side under-run protection
3.2.1 Warning signage
CLOCS Guide - Managing work related road risk in contracts / CLOCS Guide - Managing supplier compliance
3.1.1 Quality operations
3.1.2 Collision reporting
3.1.3 Traffic routing
Refer to client instructions
CLOCS Toolkit - Managing collision reporting and analysis
Refer to the FORS Standard
Requirement
Guidance