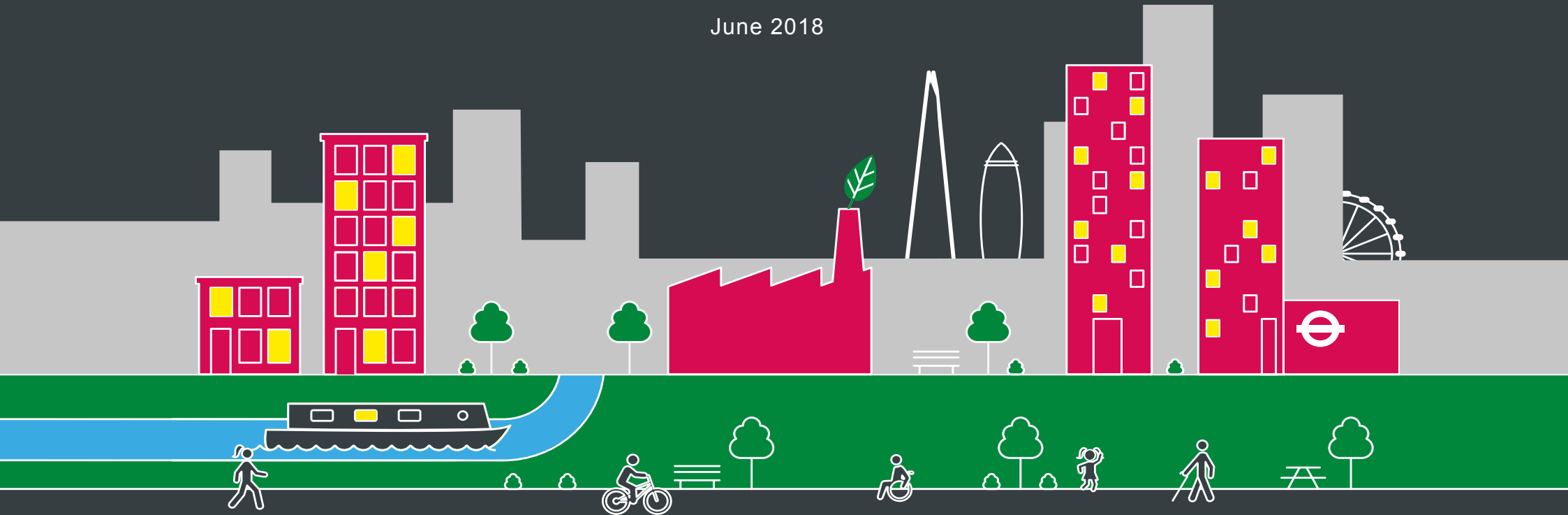


OPDC
OLD OAK AND
PARK ROYAL
DEVELOPMENT
CORPORATION

Construction and Logistics Strategy

LOCAL PLAN SUPPORTING STUDY

June 2018



MAYOR OF LONDON

10. Construction and Logistics Strategy

Document Title	Construction and Logistics Strategy
Lead Author	Transport for London
Purpose of the Study	To understand and mitigate the impact of construction activity on the road network in Old Oak and Park Royal and the surrounding area. To help inform discussions with developers to help better plan and co-ordinate construction activity reducing its impacts and test the most effective solutions for minimising the impact
Key outputs	<ul style="list-style-type: none"> • Key policies and objectives • Impact of construction logistics on Old Oak • Recommendations for best practice approach to construction activity • An Old Oak construction logistics tool has been developed • Forecast of construction traffic volumes and phasing • Potential mitigation measures assessed
Key recommendations	<ul style="list-style-type: none"> • All developers to submit/include a Construction Logistics Plan (CLP) • To mitigate the impact of construction vehicle traffic by achieving reductions in trip generation. • Ensure safety by protecting vulnerable road users • Reduce congestion – keeping the road network moving and coordinating construction activity • Improving air quality and noise through the adoption of a Construction Logistics Plan • Developers to commit to the adoption/application of FORS standards, and the minimum CLOCS (Construction Logistics and Community Safety) • Possible application of penalties for non-compliance where a CLP has been agreed but not applied in full. • Review of the CLP through the phasing of the construction process
Key changes made since Reg 19 (1)	<ul style="list-style-type: none"> • New Study
Relations to other studies	Study has interfaces with the Circular and Sharing Economy Study. Old Oak Strategic Transport Study and Park Royal Transport Strategy
Relevant Local Plan Policies and Chapters	<ul style="list-style-type: none"> • Policy T7 Freight, Servicing and Deliveries • Policy T8 Construction

Old Oak and Park Royal Construction Logistics Strategy

April 2018



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 **TRANSPORT
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EVERY JOURNEY MATTERS

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Impact of construction logistics

Impact of construction logistics

Construction Logistics in London

- Construction logistics traffic represents 35% of daytime and 38% of am peak traffic in London - it totals 520,000 miles per day
- Construction logistics traffic is expected to grow by a further 16% by 2031
- Construction vehicles currently account for 79% of the cyclist fatalities involving an HGV



Construction Logistics at Old Oak

- It is forecast that 1.5 million loaded one way HGV movements will be generated by OPDC construction sites up to December 2049
- Peak construction activity is currently forecast to take place in June 2030 (excl. HS2) when 9,000 loaded HGV journeys
- This equates to 407 loaded journeys per weekday, and 101 loaded HGV journeys in the AM peak hour

Key policy concerns and strategy objectives at Old Oak

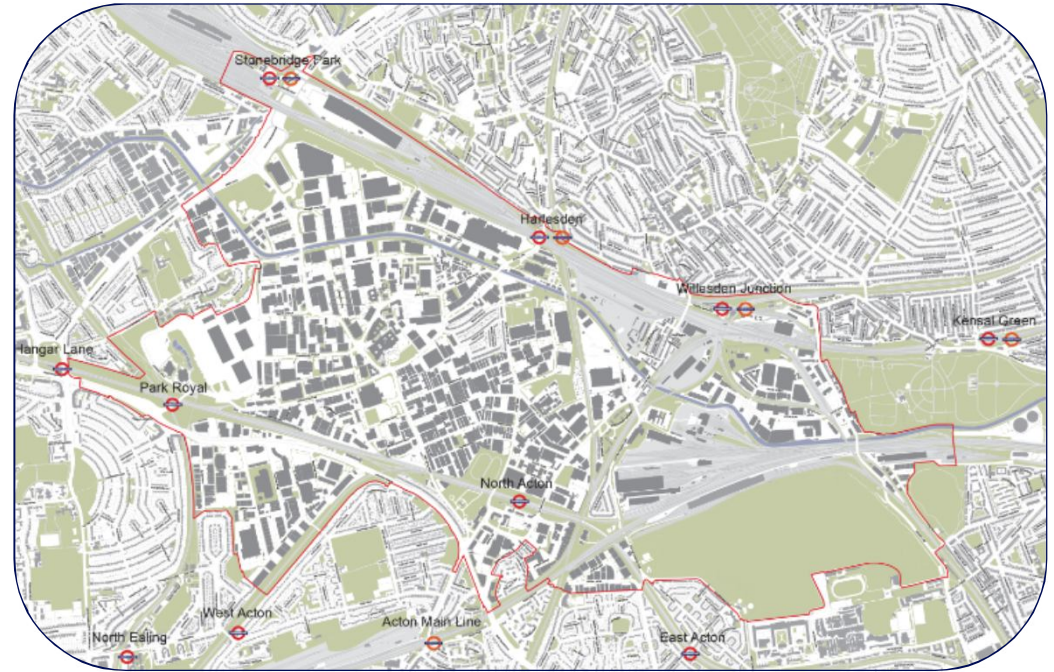
- **Ensuring Safety** – protecting vulnerable road users
- **Reducing Congestion** – keeping the road network moving and coordinating construction activity
- **Improving Air quality and reducing noise** – improving the air we all breathe and reducing noise



Better Understanding of Construction Logistics at Old Oak and Park Royal

Construction at Old Oak and Park Royal

- OPDC is tasked with delivering a new community in London with statutory London Plan targets to deliver 25,500 homes and 65,000 jobs
- Capitalising on the HS2 and the Elizabeth Line investment at Old Oak
- This scale of development activity, combined with the construction of HS2, and infrastructure to unlock land and cater for new demand will generate large volumes of construction traffic over a long period of time

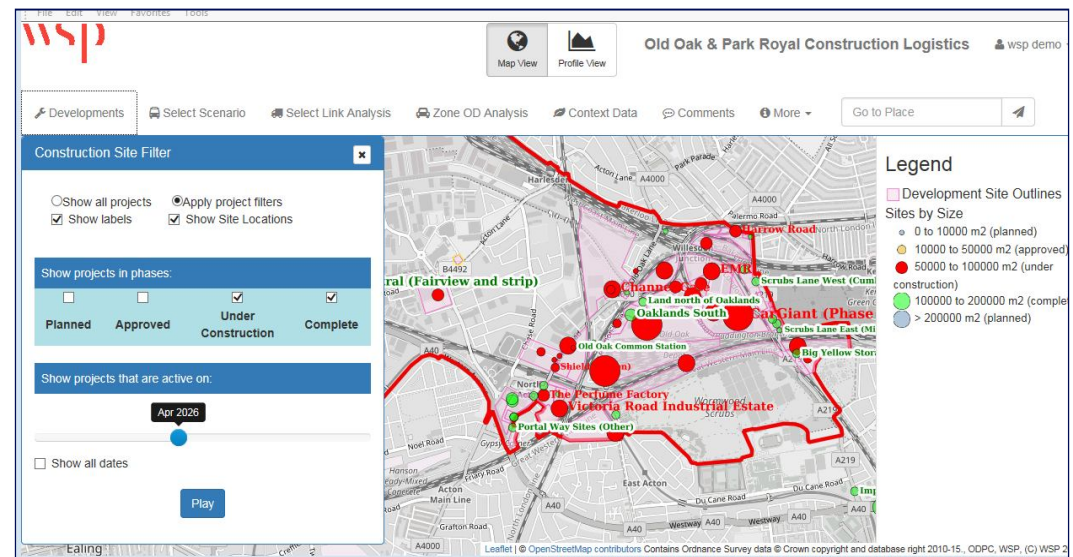
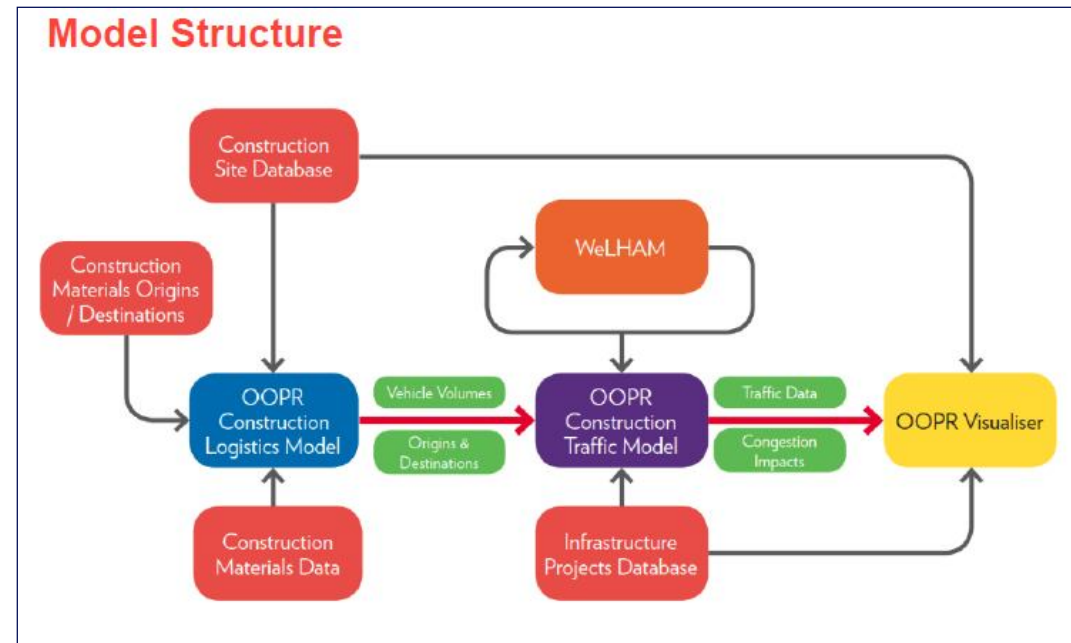


OPDC development area

- TfL, OPDC, HS2, local borough councils and other stakeholders have been working together to understand the potential timing and scale of construction traffic to help develop a strategy to minimise its impacts

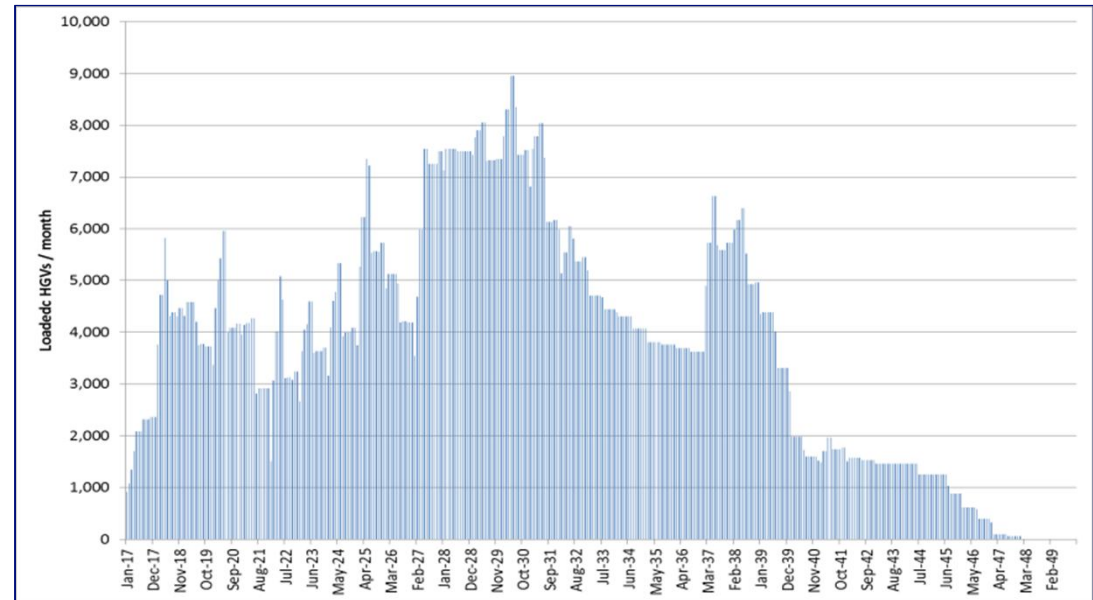
Old Oak Construction Logistics Tool

- An Old Oak construction logistics tool has been developed
- The tool includes data for 194 sites in Old Oak and Park Royal and the surrounding area
- To key objective of the tool was to understand and mitigate the impact of construction activity on the road network in Old Oak and Park Royal and the surrounding area
- The tool will also help to:
 - inform discussions with developers to help better plan and co-ordinate construction activity reducing its impacts*
 - test the most effective solutions for minimising the impact*



Forecast Construction Traffic Volumes and Phasing

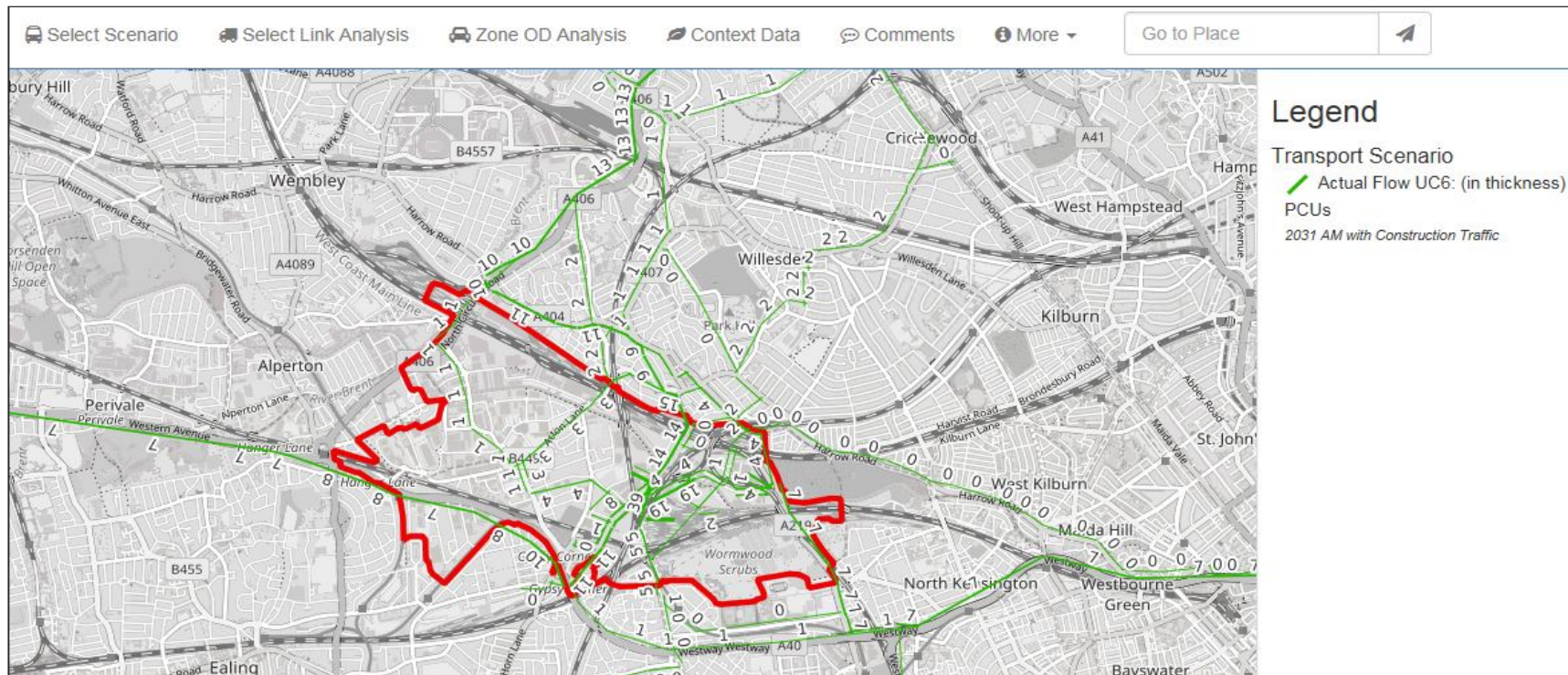
Forecast Construction HGV Profile at Old Oak



- The model forecasts that approx. 1.5 million loaded one way HGV movements will be generated to OPDC construction sites upto December 2049
- The total number of HGV movements is double this figure, with all vehicles making a return empty journey
- The peak volume of construction for OPDC sites is forecast to be reached in June 2030 (excl. HS2)
- The 9,000 loaded HGV journeys in June 2030 equates to 407 loaded journeys per weekday, and 101 loaded HGV journeys in the AM peak hour.
- Van trips would add a further 10% to 20% to these numbers
- When all HS2 sites are active, between 2020 & 2023, it is forecasts that 4,000 loaded lorry journeys per month will be generated, equating to 200 loaded trips per day

Road Network Impacts

- Overall the model suggests that the relative impact of Old Oak construction traffic on already busy and congested local and strategic road network around is modest
- However, the absolute numbers of HGVs on some sections of road will have significant local impacts that will need managing carefully including on:
 - *Acton Lane; Victoria Road ; and Old Oak Common Lane are all expected to experience significant local construction HGV movements in 2031*
 - *Parts of the TLRN notably: A40 and A406 (N of Hangar Lane)*



Mitigation Measures at Old Oak & Park Royal

There are three types of measure to reduce the impact of construction logistics:

- Measures that **reduce** construction traffic volumes e.g. by using larger vehicles or different modes of transport e.g. rail;
- Measures that **re-time** construction traffic to avoid peak hours; and
- Measures that better **manage** construction traffic e.g. improve routing

Some potential strategy measures assessed for Old Oak included:

1. A centralised concrete batching plant
2. Re-timing deliveries
3. Larger construction vehicles



Old Oak and Park Royal Construction Logistics Strategy

Old Oak and Park Royal Construction Logistics Strategy

A. Best practice Construction Logistics Plans (CLPs)

- | | | |
|---------------------------|--------------------------------------|--|
| 1 Management Arrangements | 2 Vehicle Volumes & Planned Measures | 3 Vehicle Safety Standards & Protecting VRUs |
| 4 Routing & Site Access | 5 Delivery Management System | 6 Communication & Collaboration |

B. Other recommended strategy measures

- | | | |
|---|--|----------------------------------|
| 1 Investigate Central Concrete Batching Plant | 2 Encourage Retiming of Deliveries | 3 Promote Use of Larger Vehicles |
| 4 Utilising Consolidation Centres & Holding Areas | 5 Maximise Use of Rail & Water Logistics | |

Best Practice Construction Logistics Plans (1)

- Development proposals will be supported where they provide measures to reduce construction trips
- As a result OPDC will expect all developers produce a best practice construction logistics plan, which aligns to CLOCS, Considerate Constructors Scheme, FORS sliver standard and Transport for London Guidance on Construction Management Plans and Construction Logistic Plans
- CLPs should be compliant with TfL guidance which explains what a best practice construction logistics plan should contain
- CLPs are a critical management tool for construction logistics activity



Best Practice Construction Logistics Plans (2)

- The CLP document is owned by the developer, will be approved by OPDC and TfL and be implemented by the construction main contractor
- They should cover all movements of goods, waste and servicing to and from construction sites and CLPs will be the basis for monitoring and enforcement
- TfL research suggests that there is a potential for 26% fewer vehicle movements using a best practice Construction Logistics Plan methodology



Best Practice in Logistics Plans

Best Practice Construction Logistics Plans

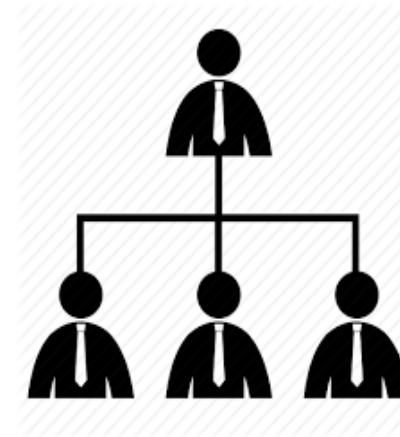
1 Management Arrangements

CLPs must specify the management structure that will be in place:

- *Who will fulfil the key functions?*
- *What qualifications & experience will they have?*

CLPs must specify what key measures will be used to assess performance and compliance:

- *% unplanned vehicles*
- *% of trucks arriving on time*
- *% CLOCS compliant vehicles*



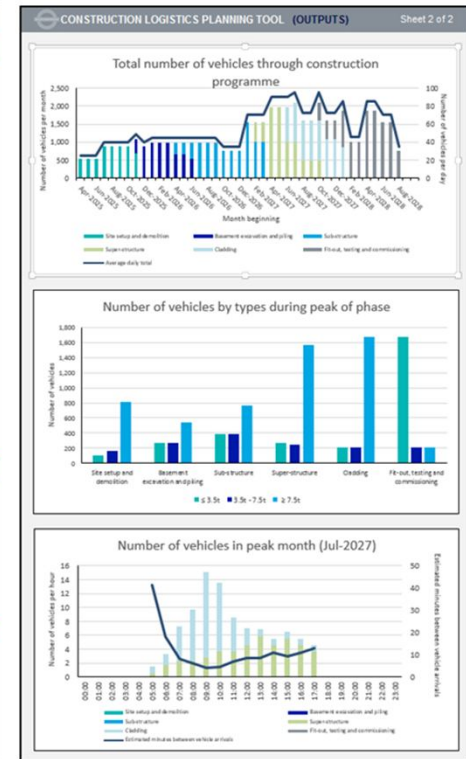
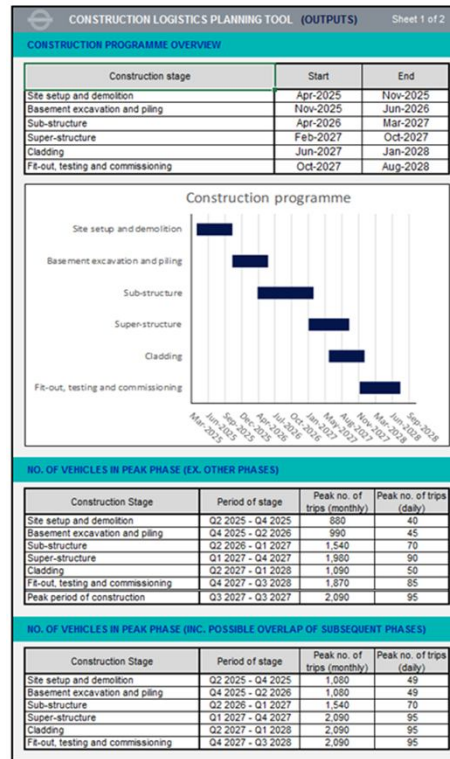
Best Practice Construction Logistics Plans

2 Planned Measures & Vehicle Volumes

CLPs must calculate and provide the forecast daily vehicle flows for the project:

- *HGV and van volumes*
- *By phase of construction*
- *Standardised data metrics*

CLPs must assess what the impact on the network will be?



Best Practice Construction Logistics Plans

2

Planned Measures & Vehicle Volumes

CLPs must identify planned measures to mitigate impact and provide a commitment to standardised measures set out in the CLP guidance:

- **Committed** - indicates a measure that will be implemented as part of the CLP
- **Proposed** – indicates a measure that is feasible and should be studied further to determine its practicality
- **Considered** – indicates a measure that is not currently relevant but may be in the future

TfL CLP Guidance – standardised measures

Planned Measures Checklist	Committed	Proposed	Considered
Measures influencing construction vehicles and deliveries			
Safety and environmental standards and programmes	X		
Adherence to designated routes	X		
Delivery scheduling	X		
Re-timing for out of peak deliveries		X	
Re-timing for out of hours deliveries		X	
Use of holding areas and vehicle call off areas		X	
Use of logistics and consolidation centres		X	
Measures to encourage sustainable freight			
Freight by Water*		X	
Freight by Rail*		X	
Material procurement measures			
DfMA and off-site manufacture		X	
Re-use of material on site		X	
Smart procurement		X	
Other measures			
Collaboration with other sites in the area	X		
Implement a staff travel plan	X		

Best Practice Construction Logistics Plans

3

Vehicle Safety Standards & Protecting VRUs

OPDC will expect developers and contractors to specify the CLOCS standard to ensure:

- *FORS Silver Accredited Operators*
- *Highly Trained Drivers*
- *Vehicles fitted with vulnerable road user (VRU) safety equipment*

In addition to adopting the minimum CLOCS requirements, 'safe systems' are increasingly available while high vision cabs offer significant safety advantages

As well as demonstrating a commitment to vehicle safety standards CLPs must demonstrate that appropriate measures will be implemented to ensure the safety of pedestrians and cyclists on the road network around construction sites



Best Practice Construction Logistics Plans

4 Routing & Site Access

CLPs must specify the traffic routes vehicles will take to approach and access the site

Provide evidence of risk assessment and risk mitigation for HGV routes:

- *Avoiding vulnerable road user sensitive areas and pollution hot spots*
- *Avoiding busy routes/junctions*
- *Ensuring vehicles can access roads and site gates (sweep path analysis)*
- *Holding areas for vehicles*



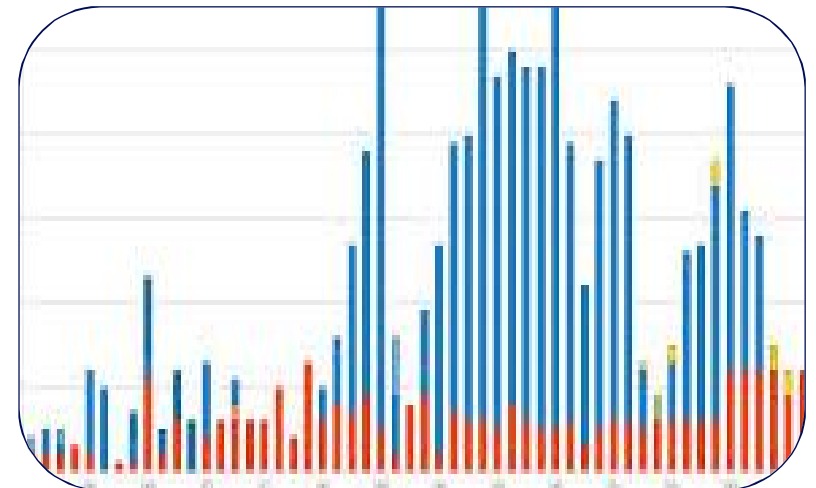
Best Practice Construction Logistics Plans

5 Delivery Management System

CLPs must describe what system will be used to organise and schedule HGVs coming to site

For example use of a computer based system or a spreadsheet to book vehicles into site taking account of resources and capacities

- *Demonstrate how vehicle arrivals will be controlled*
- *Demonstrate vehicle compliance checks*
- *Demonstrate how the system will be used to collect KPI information*



Best Practice Construction Logistics Plans

6

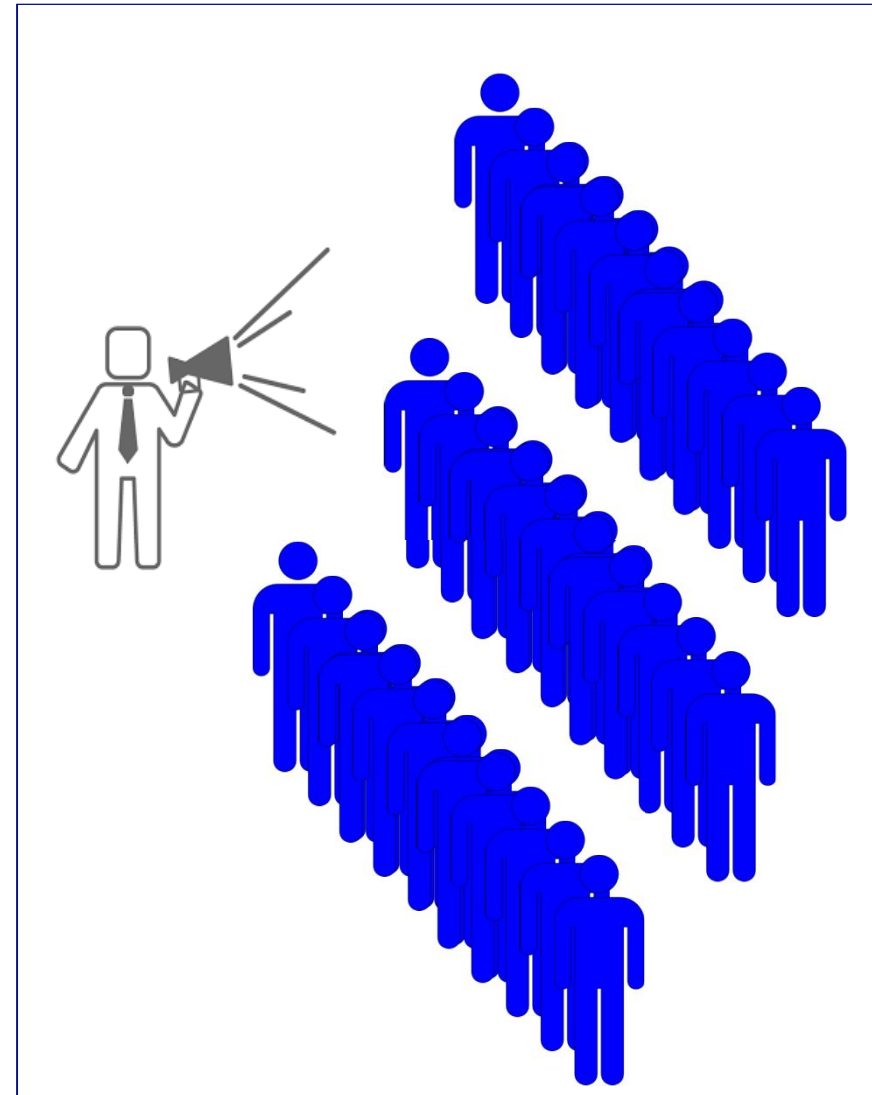
Communication & Collaboration

Describe how the CLP will be successfully communicated to:

- *Staff*
- *Sub contractors*
- *Suppliers*
- *Logistics operators*
- *Local residents*

For example: Site training/induction, handbook, web portal, handouts

CLP must describe how collaboration will take place with other developers and contractors to coordinate and phase construction projects to enable cumulative impacts to be effectively mitigated



Complying with Construction Logistic Plans

Once planning approval is granted, the Planned Measures included in the CLP become a formal commitment.

Non-delivery of those measures may incur penalties as specified by the Planning Authority.

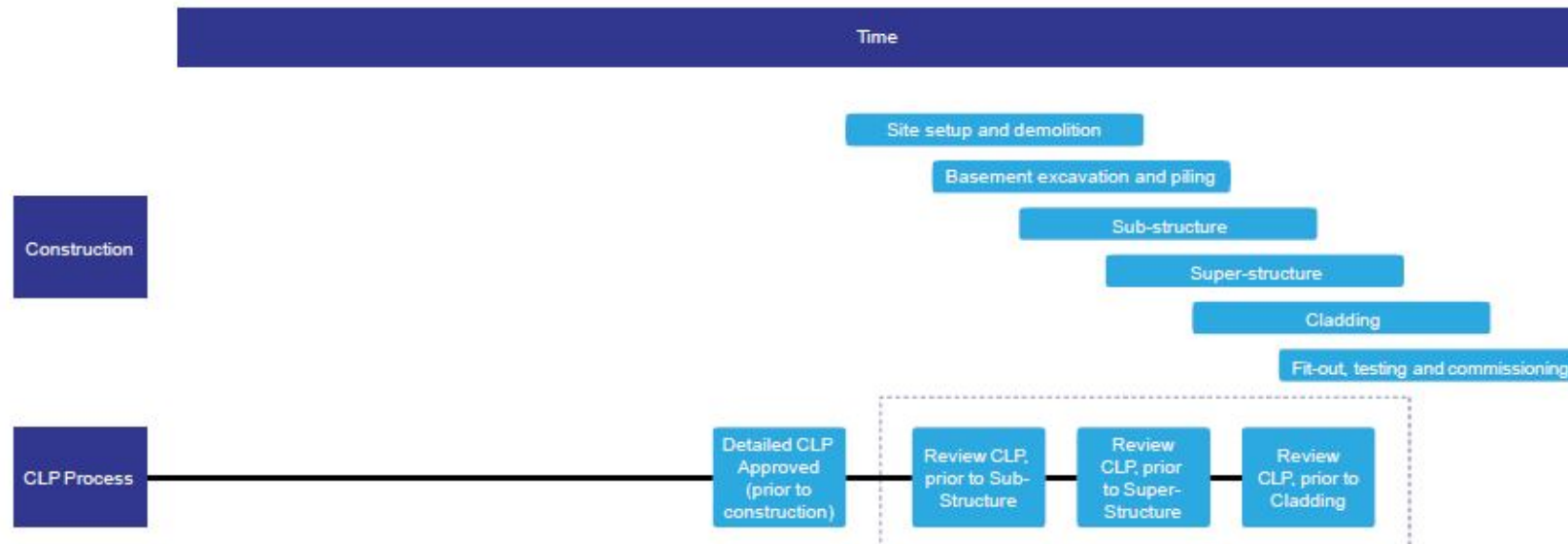


Updating Construction Logistic Plans

CLPs can be reviewed at any time but will always be reviewed prior to planning approval and typically revisited at the start of each new phase of construction.

CLPs may require revision if the plans for development have changed, particularly if the size of the development or duration of the development has increased markedly

Reviews should be scheduled in prior to the commencement of different phases of the construction process. On these reviews, updates may be required if changes have occurred.



Other Recommended Strategy Measures

Other recommended strategy measures

1 Investigate Central Concrete Batch Plant

- 54% of forecast HGV construction traffic is mixed concrete
- It will be the most visible aspect of construction traffic in the OPDC area, with peak hour volumes up to 45 lorries per hour each way on some roads with potentially far more on particularly busy days
- Locating a concrete plant within or much closer to the construction area would effectively keep over 50% of HGV traffic completely within the construction area
- It is common for major projects such as the Olympics, Thames Tideway, Crossrail, and HS2 to locate concrete batching plants within or close to construction sites
- A concrete batching plant would have to be located on a rail connected site
- OPDC will work with materials suppliers to investigate if a concrete batching plant can be located at a railhead within the OPDC area

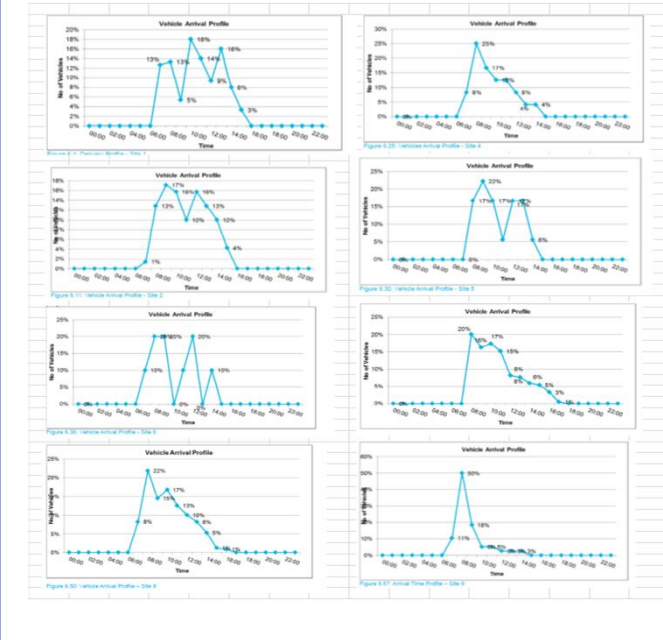


Other recommended strategy measures

2 Encourage Re-timing deliveries

- TfL research shows that construction sites often have delivery peaks during the early morning
- This arises due to night time working restrictions and established construction industry practices
- Spreading deliveries across the day would have significant benefits
- In CLPs OPDC and TfL will encourage developers to spread deliveries evenly over 10 daytime hours (implying AM peak volumes of 10% of total volume compared to 25% currently assumed in the construction logistics model)
- The impact of this measure would be a reduction of 60% of construction traffic in the AM peak on roads in and surrounding Old Oak and Park Royal
- Where appropriate OPDC will allow work to continue on construction sites for extended hours, up to 24 hours per day

Construction Vehicle Arrival Profiles by Time of Day at 8 sites (AECOM Study, 2017)



Other recommended strategy measures

3 Promote Use of Larger Vehicles

- The construction industry typically moves bulk materials in rigid lorries. Rigid vehicles include tippers which carry spoil, rubble, sand, or aggregates and mixers carrying ready-mix concrete.
- A rigid tipper has a payload of 20t whereas an articulated tipper can carry 29t
- The main obstacle to greater use of articulated vehicles is entrenched attitudes in the industry about the safety and manoeuvrability of articulated tippers. A TfL study has demonstrated that these concerns can be addressed.
- Using articulated tippers would reduce construction vehicle numbers by 30% to 37%. If all construction traffic to or from the OPDC developments used articulated vehicles rather than rigid vehicles, there would be 660,000 fewer lorry movements over the life of the project.
- OPDC will require that as part of their CLPs that contractors specify mandatory use of articulated vehicles for deliveries (unless a case can be made that this is not practicable for specific deliveries).



Other recommended measures

4 Utilising Consolidation Centres & Holding Areas

- Ideally vehicle operators want to drive directly to site, unload quickly, and depart. However, when supplies are being brought in from long distances, operators will build in time for delays, vehicles may be held up en-route, or the site may not be ready to receive the vehicle.
- A vehicle holding area is a valuable tool that can help reduce the risk of lorries having to back out of sites or circle the area waiting to make a delivery.
- Contractors are also beginning to recognise that consolidation centres can be a useful tool to reduce deliveries by smaller vehicles, save precious space on site, and ensure that supplies are available on time.
- OPDC will work with developers and landowners to identify a parcel or parcels of land to act as a lorry holding areas, consolidation space or even potentially to stockpile bulk construction materials or excavated material (for re-use locally on other construction sites).
- Developers will have to demonstrate investigation of the use of existing west London consolidation sites for suitability of use for their construction activity.



Other recommended measures

5 Maximise Use of Rail & Water Logistics

- Old Oak and Park Royal will benefit from the fact that most of the components of concrete, the major commodity used in construction, already arrive in West London by rail. Road transport will therefore only be used for the final leg of delivery of mixed concrete to sites.
- As a result opportunities to move more supplies by rail or water may be limited.
- However, OPDC will expect developers to maximise use of rail and water transport for construction deliveries including considering the potential for:
 - 1) *Removal of excavated spoil by rail, particularly if some sites require significant excavation*
 - 2) *Bringing steel and other bulk material / components to Old Oak by rail*
 - 3) *Using the Grand Union Canal to remove excavated material or to transport building supplies to sites*
- Developers will be expected to demonstrate investigation of the use of rail and water to reduce road vehicle activity associated with their construction project.

