LONDON STUDY VISIT

Classroom Session by **EPN Consulting Ltd.**

London, 19th September 2017
London – Introduction to Transport policy

London – Mayor’s Transport Strategy (June 2017 edition)

London – Transport policy

London – A Legible City

  • Hydrogen-powered Buses
  • Electric and Hybrid Buses
  • Electric and ZEC (Zero Emission Capable) Taxis

Description of the London Visits programme
Transport in London is controlled by several bodies:

- **Most of London’s roads** are primarily controlled by the **London Boroughs**
- **London’s Strategic Road Network** is managed by **Transport for London**
- The **UK core road network** is managed by **Highways England**
- **London’s surface transport** (including buses, trams, the Underground and the strategic walk and cycle network) is managed through **Transport for London**
- The **UK’s train network** is privatised with **12 train operators** serving London and **Network Rail** managing the **tracks**
- The franchises for the private train operators (known collectively as **National Rail**) are managed by the **Department for Transport**
- The **London Boroughs** are responsible for delivering programmes on areas such as local road safety, improvements to cycle parking and improvements to the streetscape,...
- The **Oyster travelcard** allows travel across **all modes** of London transport
On 21 June 2017 Mayor of London, Sadiq Khan, published a draft of the Mayor's Transport Strategy. The document sets out the Mayor’s policies and proposals to reshape transport in London over the next 25 years. The public consultation will be open until midnight on 2nd Oct 2017.

Transport has the potential to shape London from the streets Londoners live, work and spend time on, to the Tube, rail and bus services they use every day.

Three key themes are at the heart of the strategy:

1. **Healthy Streets and healthy people** - Creating streets and street networks that encourage walking, cycling and public transport use will reduce car dependency and the health problems it creates.

2. **A good public transport experience** - Public transport is the most efficient way for people to travel over distances that are too long to walk or cycle, and a shift from private car to public transport could dramatically reduce the number of vehicles on London’s streets.

3. **New homes and jobs** - More people than ever want to live and work in London. Planning the city around walking, cycling and public transport use will unlock growth in new areas and ensure that London grows in a way that benefits everyone.
Vision

Healthy Streets and healthy people

• All Londoners to do at least the 20 minutes of active travel they need to stay healthy each day

• No one to be killed in or by a London bus by 2030, and for deaths and serious injuries from all road collisions to be eliminated from the streets by 2041

• All taxis and private hire vehicles to be zero emission capable by 2033, for all buses to be zero emission by 2037, for all new road vehicles driven in London to be zero emission by 2040, and for London’s entire transport system to be zero emission by 2050

• Reduce freight traffic in the central London morning peak by 10 per cent on current levels by 2026, and to reduce total London traffic by 10-15 per cent by 2041

A good public transport experience

• Open Crossrail 2 by 2033

• Create a London suburban metro by the late 2020s with local train services devolved to the Mayor

• Improve the overall accessibility of the transport system including halving the average additional time taken to make a public transport journey on the step-free network compared to the full network

New homes and jobs

• Incorporate the transport principles of ‘good growth’ in regeneration and new developments
By 2041 the Mayor aims for 80% of all Londoners’ trips to be made by foot, by cycle, or by public transport.
The London’s Transport Policy is influenced by a variety of national, regional and local policies.

Nationally
- The Department for Transport (DfT) produces guidance and sets policies to promote initiatives aimed at increasing levels of travel by sustainable modes of transport.
- The Future of Transport White Paper sets out the Government’s long term strategy for a modern, efficient and sustainable transport system over the next 20 years.
- Planning Policy Guidance 13: Transport sets national policy on planning new development in relation to transport.

Regionally
- The Mayor’s Transport Strategy is developed alongside the London Plan setting out the Mayor’s plans for London’s transport network for the next 20 years.
- The London Plan sets out a regional spatial development strategy for London.
- Transport for London (TfL) produces a range of publications and information on cycling in London.

Locally - Each London Borough’s produces their own transport policies which reflect the regional priorities of the Mayor’s Transport Strategy.
Walking is a great way of getting around London. Yet many people are put off by inconsistent signage and confusion about distances between areas.

**Legible London** is a pedestrian wayfinding system aiming to help people walk around the Capital. It’s designed to give people the confidence to walk and help to reduce pedestrian journey times.

It’s also integrated with other transport modes so when people are leaving the Underground or bus network for example they can quickly identify the walking route to their destination.

Nearly every London borough has at least one of the more than 1,700 Legible London signs.

The aim is for **more than 3,000 Legible London signs** to be in place by **2021**. The plan is to work with boroughs and developers to fund this expansion.
There is a core product range of **Legible London signs** to suit the surrounding streetscape and users' information needs.

**Monoliths** - These wider signs include detailed directional information and a large walking map to illustrate a five-minute walk in any direction. They are used where groups of people can stand without blocking the path of others.

**Miniliths** and **midiliths** - These taller, narrower signs offer detailed information on the local area but are useful where pavement space is at a premium. Their height ensures they are visible from a distance and can be spotted above a crowd of people.

**Interlith totems** - These tall signs combine detailed directional information and walking maps with an illuminated beacon. Designed to be used at transport interchanges, such as stations and river piers, they condense the number of signs required at these locations.

**Finger posts** - These are more traditional signs pointing the way to places where a map-based sign may not be suitable.

All signs use high contrast colours so they can be read easily. Each sign is clearly identified with a yellow strip at the top and a walking man icon.
London – Legible city
London – Legible city
London aims to be the ULEV (Ultra Low-Emission Vehicle) capital of Europe, with ULEVs as a core part of our sustainable transport. ULEVs include:

- Battery Electric Vehicles (BEVs)
- Plug-in Hybrid Electric Vehicles (PHEVs)
- Range-Extended Electric Vehicles (RE-EVs)
- hydrogen Fuel Cell Electric Vehicles (FCEVs)

The Capital’s world-class transport network means that public transport, walking and cycling are the obvious choice for most journeys in London.

However, travel by car is still needed for many journeys. When the Mayor set out his ambition for London to become the electric vehicle capital of Europe, this sent a clear message that encouraging ULEVs is a critical next step towards delivering a fully sustainable transport system for London.
London – New technologies for London Transport

**The immediate/quick wins:** actions needed in the next 12 months to support those who already own ULEVs and those poised to change to such vehicles.

**Medium term actions:** to prepare London for the predicted uptake in next 5-10 years.

**Longer term actions:** that will prepare us for ULEVs becoming a mainstream vehicle option for London vehicle travel and will enable innovation and maintain flexibility as the market and technology develops.
Action plan

1. Support stakeholders’ aspirations for expanding Source London
2. Identify priority charging and refuelling infrastructure locations, based on research and stakeholder insight
3. Work with car clubs to achieve a target of 50 per cent ULEVs in the London car club fleet by 2025
4. Deploy 1,000 vehicles in GLA Group fleets, including 120 ULEVs in TfL support fleet
5. Increase public awareness and acceptance of ULEVs
6. Deploy a rapid charge point network
7. Provide charging solutions for residents without off-street parking
8. Offer attractive incentives to stimulate ULEV uptake
9. Support the implementation of local air quality schemes
10. Streamline the ULEV and charging infrastructure procurement processes
11. Achieve zero emission capable taxis and PHVs on London’s streets from 2018
12. Increase the uptake of ULEVs in freight and fleet organisations
13. Demonstrate and test new technologies and approaches
14. Test and evaluate the application of geofencing for zero emission capable vehicles
15. Ensure London is ready for the commercialisation of hydrogen transport
London – New technologies for London Transport

**INFRASTRUCTURE**
- Support stakeholders’ aspirations for the development of Source London
- Identify priority charging and refuelling infrastructure locations
- Deploy a rapid charge point network by 2018
- Provide charging options for residents without off-street parking

**VEHICLES**
- Work with car clubs to achieve 50 per cent ULEVs by 2025
- Deploy 1,000 ULEVs in GLA Group fleet including 120 in TfL fleet
- Achieve zero emission capable taxis and PHVs on London’s streets from 2018
- Increase the uptake of ULEVs in freight and fleet organisations

**INNOVATION & NEW TECHNOLOGIES**
- Demonstrate and test new technologies and approaches
- Test & evaluate the application of geofencing for zero emission capable vehicles
- Ensure London is ready for the commercialisation of Hydrogen transport

**MARKETING & INCENTIVES**
- Increase public awareness and acceptance of ULEVs
- Offer attractive incentives to stimulate ULEV uptake
- Support the implementation of local air quality schemes
- Streamline ULEV and charging infrastructure procurement
The Mayor is spending more than £300 million (€330m) to transform London’s bus fleet by retrofitting thousands of buses and committing to phase out pure diesel double-deck buses from 2018.

There were announced 12 Low-Emission Bus Zones, putting the greenest buses on the capital’s most polluted routes.

The zones are expected to reduce NOx (Nitrogen Oxides) emissions by 84% and thousands of school children in these areas will benefit from cleaner air.


Euro VI is the latest standard in diesel engines, reducing emissions of NOx by up to 95% compared to the previous generation of buses.

Since 2014 new buses have been supplied with these ultra low emission engines, and they are introduced across London at a rate of between 700 and 1,000 buses a year.

By 2037 at the latest, all 9,200 buses across London will be Zero-Emission.
London – Low-Emission Bus Zones

New **Low Emission Bus Zones** will see the exclusive use of buses with top-of-the-range engines and exhaust systems that meet or exceed the highest Euro VI emissions standards.

The zones will be prioritised in the worst air quality hotspots outside central London and in areas where buses would otherwise contribute significantly to road transport emissions - helping people to breathe cleaner air and our city to flourish.

The first zone was introduced along Putney High Street in March 2017 and will be followed by an area between Streatham and Brixton in autumn 2017.

All 12 zones are set to be completed by 2020 and form a central part of the Mayor's far-reaching plans for a drastic clean-up of London's toxic air.
London – Hydrogen-powered Buses

Hydrogen transport

TfL and the GLA are supportive of hydrogen transport and the development and commercialisation of Fuel Cell Electric vehicles (FCEVs). FCEVs run on compressed hydrogen fed into a fuel cell stack that produces electricity to power the vehicle. Some of the benefits of hydrogen include:

- A low to zero-emission source of energy (depending upon the source of the hydrogen used), offering long term emission savings
- Decarbonisation of energy: hydrogen can be produced from various energy sources, including renewables
- Reduced noise: there is no combustion process in a fuel cell
- Diversity of energy supply: reducing reliance on imported fossil fuels
- Increased resilience to power outages
- Economic opportunities: due to local production/supply of the fuel and technology development and application. Also, hydrogen can attract new investment into London as well as developing skills and creating opportunities for new jobs
London – Hydrogen-powered Buses
In December 2013 TfL began a trial of electric-only buses. Electric buses are quieter than conventional models, have zero exhaust emissions and total CO2 emissions 40% lower over their lifespan than diesel buses.

The buses take around four to five hours to fully charge overnight and should have a range of 250km. This is sufficient to operate these buses for a full day on these routes without the need to recharge.

Two of the new vehicles are currently operating on routes 507 and 521 between Victoria, Waterloo and London Bridge stations.
Wireless charging technology on some of the buses running on route 69 in being trialled as part of Project ZeEus (http://zeeus.eu/). The buses are fitted with special technology enabling on-board batteries to receive a charge boost on plates fitted at bus stands at either end of the route.

This should enable the buses to operate in pure electric mode for a significant period of the time they are in passenger service.

The trial uses inductive charging technology allowing the buses to top up their batteries without needing to be physically plugged in.

The buses have a diesel engine that will be used when battery power is depleted. But this will only be a small amount of the time, meaning emissions on these vehicles are greatly reduced.
Over 2,600 diesel-electric hybrid buses currently run through the capital, making up 30% of the bus fleet.

All of these buses are quieter, more fuel-efficient and cleaner than standard diesel buses, reducing emissions by between 30-40%.

From 2018, all new double-deck buses entering our fleet will be diesel-hybrid meeting Euro VI emissions standards.
TfL licenses all taxis and PHVs operating in London. We can therefore use licensing conditions to reduce emissions from these fleets across London and encourage the uptake of ULEVs. From 1 January 2018, subject to public consultation, all new taxis and PHVs presented for licensing in London for the first time will need to be zero emission capable (ZEC).

For taxis, a ZEC vehicle is defined as $\leq 50\text{g/km CO}_2$ with a minimum zero emission range of 30 miles. The zero emission requirements for PHVs will be aligned with the government’s criteria for the plug-in car grant. This means that ZEC taxis and PHVs could be battery electric vehicles (BEVs), plug-in hybrids (PHEVs) or range-extended electric vehicles (RE-EVs).

Both taxis and private hire owners will benefit from OLEV’s plug-in-car grant (currently £5,000). To reduce the purchase costs of the new ZEC London taxis, TfL has also secured £25m from DfT to provide additional taxi top-up grants for ZEC London taxis. This will provide a £3,000 grant for early adopters, on top of the plug-in car grant.
End of Classroom Session – 19th Sept 2017

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