



VREF CENTER OF EXCELLENCE FOR  
**SUSTAINABLE URBAN  
FREIGHT SYSTEMS**

Peer-to-Peer Exchange Program

NEXT UP

Land-Use Related Freight  
Transport Challenges and  
Opportunities in London

Sept 27th, 2017 :: 11:00 a.m. EST




Paul Strang      Julian Allen

## Webinar Participants

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A world map with a grid showing the locations of webinar participants. Countries are highlighted in green and labeled with their names in red text. The participants are distributed across all major continents: North America (Canada, United States, Mexico), South America (Chile, Colombia, Brazil), Europe (United Kingdom, Norway, Sweden, France, Italy, Greece, Turkey), Africa (Morocco), Asia (Japan, Poland, China, India, Singapore), and Oceania (Australia).

## Mechanics of the Seminar

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- ❖ The webinar is being recorded, the URL will be sent out to participants and posted at [www.coe-sufs.org](http://www.coe-sufs.org)
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## CoE-SUFS

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- ❖ Funded by the Volvo Research and Educational Foundations (VREF)
- ❖ Main Goal: To jumpstart an integrative process, involving cities, private sector, and researchers to develop new freight systems paradigms that:
  - ❖ Are sustainable
  - ❖ Increase quality of life
  - ❖ Foster economic competitiveness and efficiency
  - ❖ Enhance environmental justice



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## CoE-SUFS Network

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## CoE-SUFS Dissemination Programs

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- ❖ **Peer-to-Peer (P2P) Exchange** to share global best practices and real world examples of sustainable urban freight systems.
- ❖ **Next P2P (Winter 2017/2018):**
  - ❖ Effects of Land Use Policies on Urban Freight
- ❖ **Workshops** to bring together public/private sectors and academia, to jointly work to address urban freight issues.
  - ❖ Already held at: India, Brazil, Colombia, Canada, Mexico, Chile, Australia, China, New York City, and London.

## NCHRP 08-111: Effective Decision-Making Methods for Freight-Efficient Land Use

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- ❖ Rensselaer Polytechnic Institute has recently been awarded a research project funded by National Cooperative Highway Research Program (NCHRP) to produce
  - ❖ A guide to quantify and evaluate the impact of land-use practices and policies to support efficient movement of all modes of freight
  - ❖ Decision-support tools to assist local, regional, and state land-use and transportation decision makers to support efficient movement of freight
- ❖ We welcome any suggestions on freight-efficient land use practices or decision-making practices which we can learn from.
- ❖ Please contact Jeff Wojtowicz ([wojtoj@rpi.edu](mailto:wojtoj@rpi.edu)) for any suggestions you would like us to follow up with.



## Freight Challenge: Logistics Land Availability -Julian Allen, University of Westminster-



## Freight Transport Trends in London

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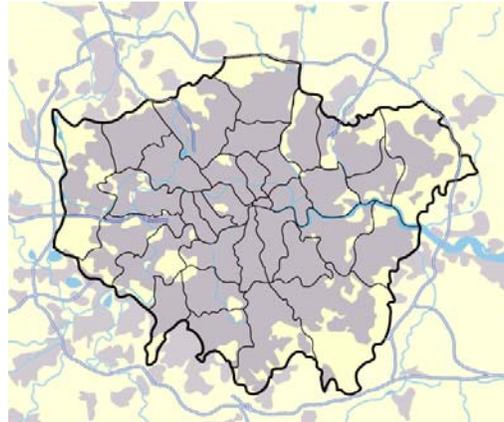
- ❖ Deindustrialisation & rise of service economy
- ❖ Growing population, employment levels and demand for goods and services
- ❖ Rise of ecommerce / rapid last mile delivery systems
- ❖ Growing number of large, multi-occupier buildings (business and residential)
- ❖ Rising urban land values - impacts on:
  - ❖ On-site stockholding levels
  - ❖ Logistics land availability/affordability
  - ❖ Logistics sprawl
- ❖ Van traffic growing in urban areas
- ❖ Low and falling average traffic speeds



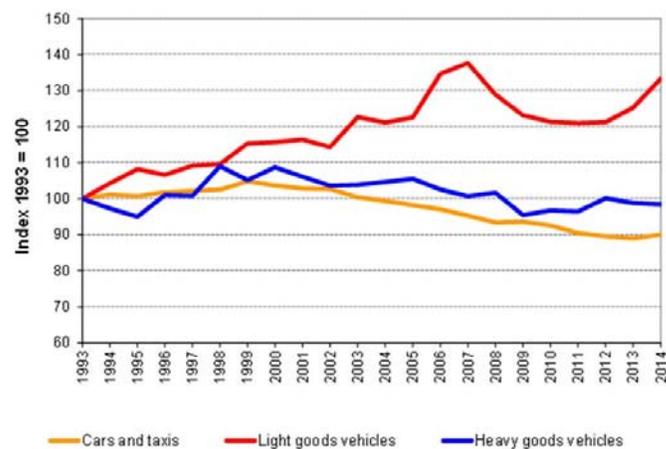
## London is a Net Importer of Goods (by Weight) <sup>11</sup>

### ❖ A City of Consumption far more than Production

- ❖ By Road: 20-50% more travels in than out (2000-2014)
- ❖ By Sea: 400% more travels in than out (2012)
- ❖ By Rail: 200-300% more travels in than out (2004-2012)
- ❖ By Air: 10-30% more travels in than out (2003-2014)



## Vehicle km travelled in London 1993-2014 <sup>12</sup>



Source: Using data from Transport for London

## Impact of Changes on Freight Transport Demand & Pattern in London

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- ❖ Population and employment growth in London
- ❖ Rise of the service economy
- ❖ Outsourcing of service activities
- ❖ Rising urban land values and suburbanisation of warehousing / logistics activities
- ❖ Rationalisation of warehousing (fewer, bigger)
- ❖ Reduced stockholding
- ❖ Rise in ecommerce & last-mile delivery services



- ❖ Growing demand for goods and services
- ❖ Increase in goods and service vehicle journey distances
- ❖ Smaller, more frequent deliveries
- ❖ More goods deliveries in residential areas
- ❖ Greater use of light goods vehicles in urban areas
- ❖ Increasing LGV vehicle activity in London
- ❖ Increased use of HGVs for inter-urban journeys
- ❖ Increase in associated environmental impacts

- ❖ Deindustrialisation
- ❖ Vehicle safety and environmental policy



- ❖ Reduction in transport of goods manufactured from London by HGV
- ❖ Reduced negative impacts per vehicle mile

**OVERALL NET INCREASE IN LGV VEHICLE TRAFFIC & IMPACTS**

## Freight Transport Challenge for Policy Makers

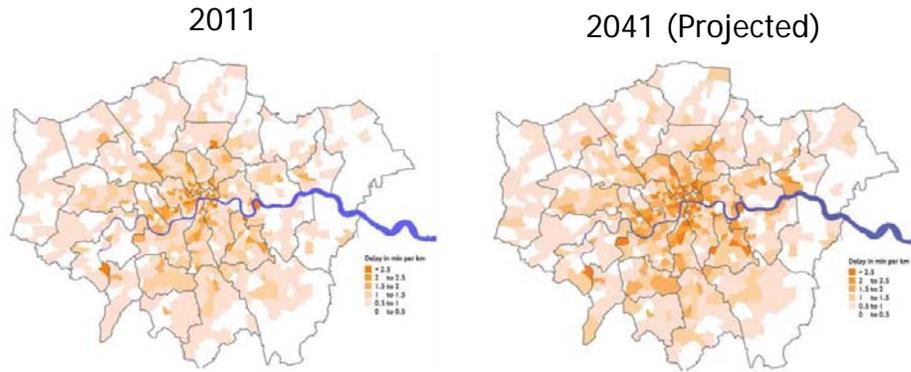
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- ❖ Economic importance of freight transport
- ❖ Pressure on London authorities to improve road safety, reduce traffic and CO<sub>2</sub> emissions, and improve air quality
- ❖ Land-use and transport planning not adequately taking accounting of these freight trends:
  - ❖ Space reallocation and priority given to bus & cycle lanes
  - ❖ Demand for kerbside space from all road users growing
  - ❖ Very responsive delivery requirements increasingly the norm
  - ❖ Freight trip generation poorly understood
  - ❖ Current available land-use related interventions limited



# Highway Congestion in London

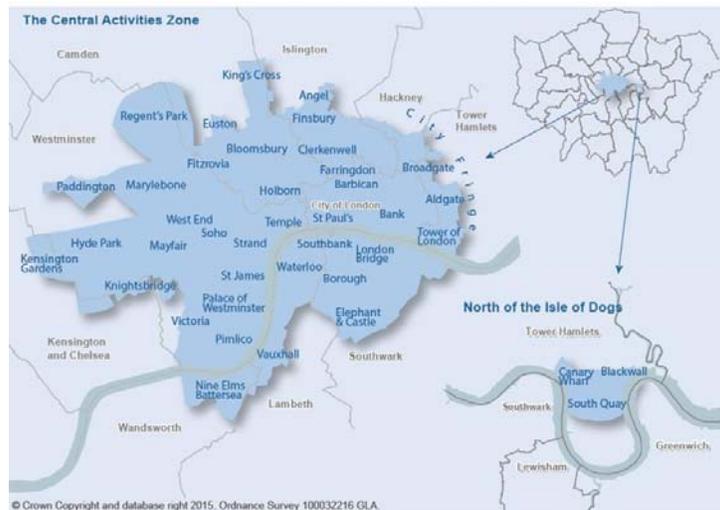
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Source: Transport for London

# London Central Activities Zone

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Source: GLA, 2016

## Warehousing Land in London, 2015

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Location	London's Warehousing (% of total hectares)
Central Activities Zones	1%
Inner London	19%
Outer London	80%
LONDON TOTAL	100% (2,523 hectares)

Source: calculated from data in AECOM et al., 2016

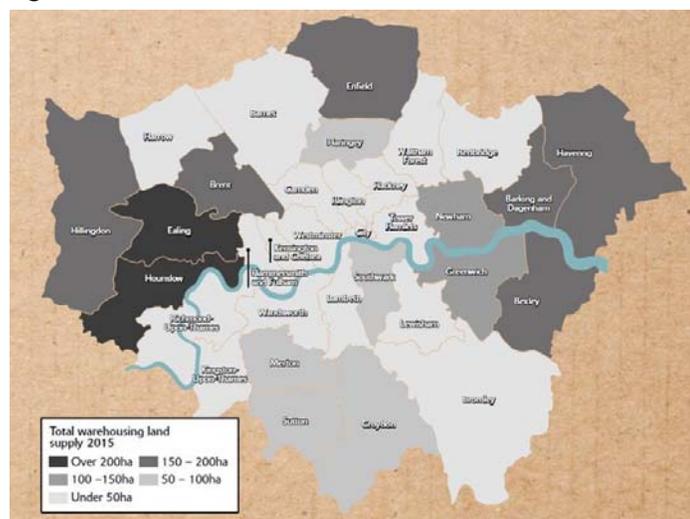


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## Distribution of Warehousing Land Supply

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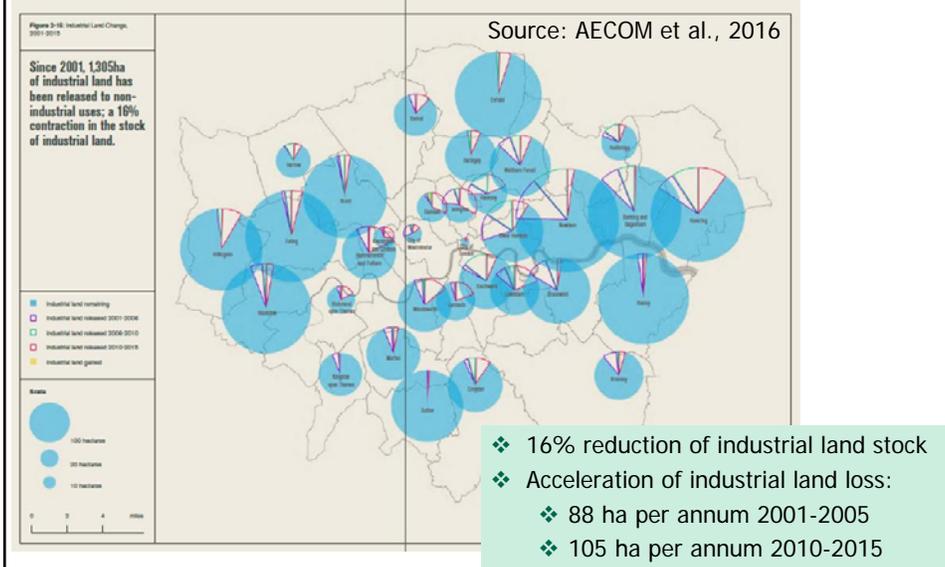
❖ by Borough, 2015



Source: in SEGRO, 2016 using data from GLA, 2016; Turley, 2016

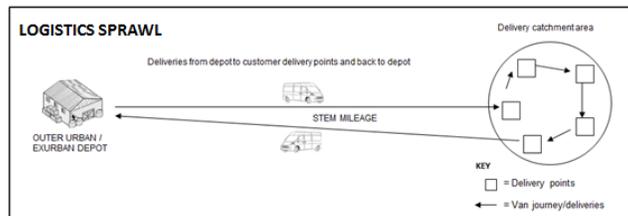
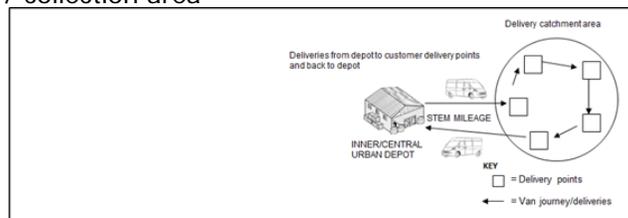
# Industrial Land Released to Non-industrial Uses <sup>19</sup>

❖ In London, 2001 – 2015



# What is Logistics Sprawl? <sup>20</sup>

- ❖ Logistics depots relocated from central and inner urban areas to more remote locations (outer urban, edge of urban area and exurban)
- ❖ Stem mileage: the distance a goods vehicle travels from its depot to its delivery / collection area



## Effects of Logistics Sprawl

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- ❖ As distance between depot and catchment area increases:
  - ❖ Unproductive vehicle mileage increases
  - ❖ Journey time increases and journey time reliability worsens
  - ❖ Vehicle operating performance worsens
  - ❖ Requires more vehicles and mileage to do the same quantity of freight work
  - ❖ Adds to road traffic levels
  - ❖ Adds to negative social and environmental impacts of freight transport

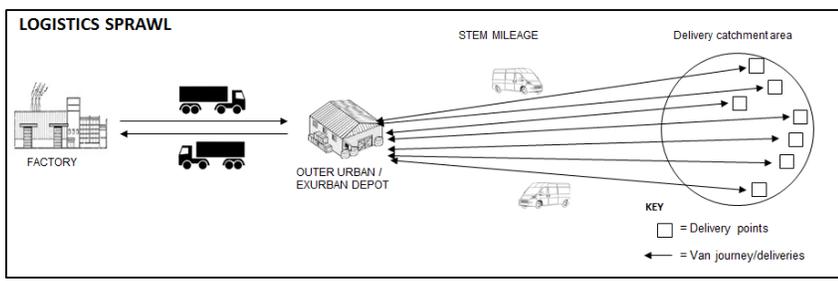
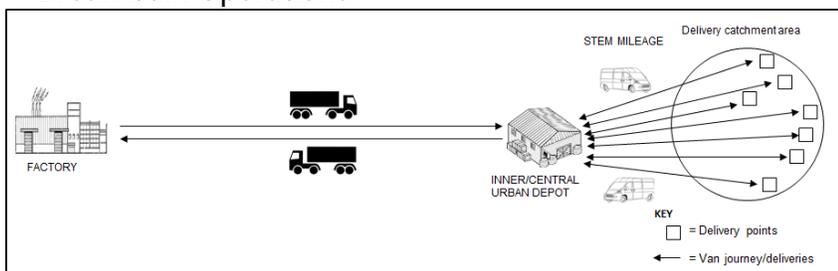


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## Multiplier Effect of Logistics Sprawl

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- ❖ Break-bulk Operations



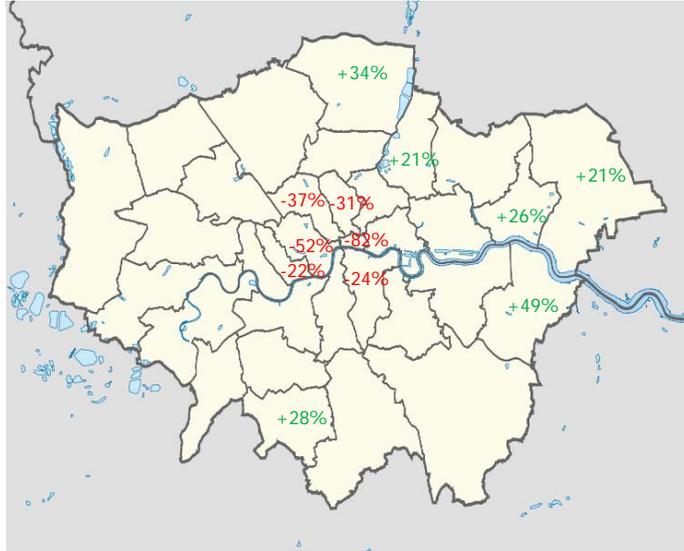
## Change in Warehousing Floor-Space

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### ❖ % in selected London boroughs (1998-2008)

- ❖ Recent research indicates trend continued 2008-2015 (i.e. reduction in central boroughs and increase in outer boroughs)

- ❖ Total warehousing floor space in London fell 7% between 2006 and 2015

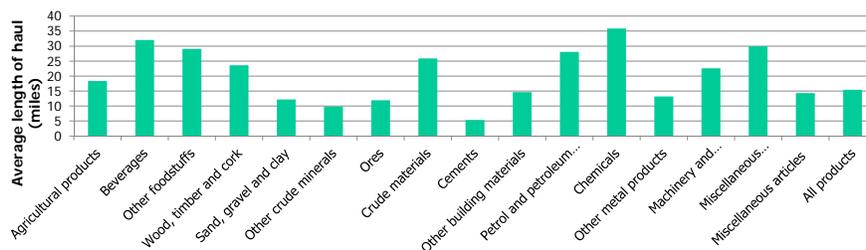


## Sprawl of Logistics Depots - Greatest Impacts

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- ❖ Freight operations that involve transfer of goods to smaller vehicles for final urban delivery
- ❖ Supply chains and product types that involve high frequencies of delivery
- ❖ Goods destined for inner and central urban delivery points

Average Length of Haul for Journeys that Start and End in London



Note: 2005-2010 average, and only includes goods vehicles over 3.5 tonnes gross weight (i.e. no light goods vehicle journeys)

## 'Logistics Land Availability in London' Workshop <sup>25</sup>

- ❖ Held in April 2017
- ❖ 25 invited representatives from private sector, public sector and academics - participants voted on various questions
- ❖ All believed 'logistics sprawl' caused by affordability and availability of logistics land in London
- ❖ All but one viewed 'logistics sprawl' as important factor in total freight vehicle activity increases in London in last 5 years
- ❖ Affordability / availability of logistics land in London viewed as already substantial problem for reliability and cost of goods and service provision
- ❖ All expected situation to worsen in London over next 5 years
- ❖ Thought that public sector should find ways to make available small quantities of land for innovate, sustainable freight operations (micro-consolidation, mobile depots etc.)

## Current demand for logistics land in London <sup>26</sup>

- ❖ Sustainable freight transport operations:
  - ❖ sites in central / inner London for micro-depots for final delivery
  - ❖ sites in inner / outer London for urban consolidation centres
- ❖ Online retailers seeking sites across London for last-mile deliveries
  - ❖ At current levels of take-up only 8 months of industrial space left in London (with 60% less available than in 2010)



## Micro-consolidation Hub Concept

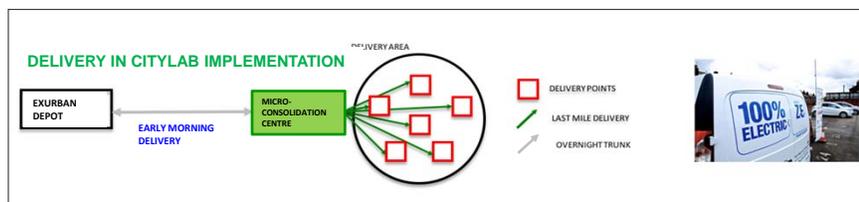
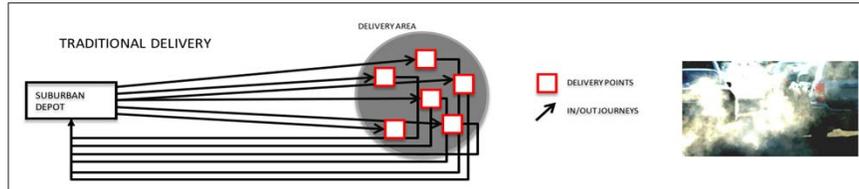
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- ❖ London Implementation: New microconsolidation hub concept with clean vehicles for last-mile delivery

gnewt cargo



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- ❖ Challenge: Availability of affordable logistics land in central London

## Parcel Sector Operation in Central London

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- ❖ Vehicle rounds studied in London's 'West End'
- ❖ Average drive time between stopping locations of 4 minutes, with 8 minutes vehicle dwell time at each vehicle stop
- ❖ 95% of vehicle stops took place on-street at kerbside
- ❖ Vehicles parked for 60% of total vehicle round time
- ❖ Average walking distance per vehicle round - 5 miles
- ❖ Major kerbside space and time consumption
- ❖ Now exploring alternative delivery systems including portering



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## FTC2050 Approach: The Carrier's Carrier

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- ❖ In FTC could use a carrier's carrier for:
  - ❖ last-mile delivery journeys
  - ❖ walking element from kerbside to delivery point (to free up kerbside)

- ❖ Company benefits:
  - ❖ Operating cost savings
  - ❖ Reduced depot / fleet needs
- ❖ Receiver benefits:
  - ❖ Fewer deliveries and associated time savings
- ❖ Social benefits:
  - ❖ Reduced vehicle activity
  - ❖ Reduced CO<sub>2</sub> & air pollution
- ❖ Barriers:
  - ❖ Need to overcome traditional competitive culture
  - ❖ Develop inter-company trust
  - ❖ Data confidentiality and security
  - ❖ Integrating IT systems
  - ❖ Finding suitable allocation of costs and benefits

## Management of Logistics (and Industrial) Land Availability and Affordability in London

30

### View 1

Don't change anything: More industrial land should be released for residential use (and industrial/logistics activities should spill over into rest of southeast)



**Would lead to greater freight vehicle journey distances to/from London and hence total vehicle activity and related impacts**

### View 2

Over-inflated residential values lead to property speculation and loss of industrial land – intervention could prevent freight journeys getting ever-longer (and related external impacts)



**Would require stronger market interventions by policy makers to:**

- ❖ Reduce logistics facilities moving to edge of London and beyond
- ❖ Provide small quantities of logistics land in central / inner London for sustainable freight solutions using innovative approaches

## Key Takeaways

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- ❖ Logistics land supply in London diminishing due to:
  - ❖ change of land use from industrial to residential
  - ❖ demand for ecommerce-related logistics facilities
- ❖ Mismatch between public sector sustainable freight transport aspirations and lack of appropriate actions on logistics land availability and affordability
- ❖ Planning policy not as effective as needed:
  - ❖ to protect logistics land supply in desirable locations
  - ❖ supply new land for innovative, sustainable solutions
- ❖ Need to devise and implement suitable land-use transport strategies and policy measures
- ❖ Without action the sustainability of urban freight operations will deteriorate



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## Role of Policy on Logistics Land Use -Paul Strang, Transport for London-



 Transport  
for London

## Contents

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- ❖ Freight – Issues and Challenges for London
  - ❖ Our Vision for London's Street
  - ❖ The Problem with Freight Traffic
- ❖ Strategic Approach
  - ❖ A Hierarchy Supported by a Systematic Review of Interventions
  - ❖ Whole Supply Chain Approach
- ❖ Land's Role in Enabling the Strategic Approach
  - ❖ The Strategic Risk and Opportunities
  - ❖ Unlocking Land to Enable Sustainable Best Practice



## Bold Vision in Transport Strategy

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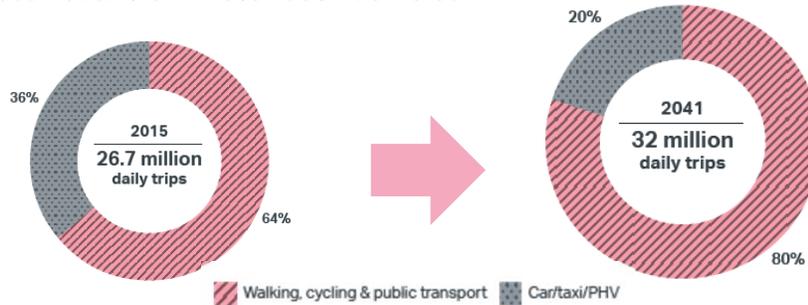
*"to create a future London that is not only home to more people, but is a better place for all of those people to live in." - Mayor's Transport Strategy (Draft) June 2017*



## A More Active City

35

- ❖ The Mayor wants a city that is more active and is considerably less reliant on motorised vehicles



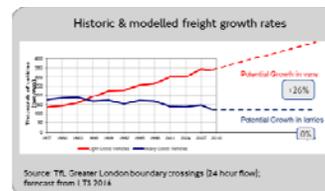
- ❖ By 2041 the aim is for 80% of Londoners' trips to be on foot, by cycle or using public transport



## Better Managing & Mitigating Freight's Impact

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- ❖ A growing city with reducing road capacity
  - ❖ Freight traffic is 1/3 of all AM Peak Traffic
  - ❖ 17% of all road traffic kms
  - ❖ 80% of freight vehicles are van, 20% trucks
  - ❖ Vans only motor traffic forecast to grow
- ❖ Air Quality and diesel in particular is a challenge
  - ❖ CO2 emissions – 24%
  - ❖ NOx emissions – 33%
- ❖ Safety – Trucks and vulnerable road users
  - ❖ Trucks are 4% of road miles in London but:
  - ❖ 78% cyclist and 20% of pedestrian fatalities



**MTS target:**

**Reduce AM Peak Freight Trips in Central London by 10% by 2026**



## Section Two – Strategic Approach

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- ❖ Freight – Issues and Challenges for London
  - ❖ Our Vision for London's Street
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## Changing Freight Behavior

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- ❖ Changing freight behaviour is harder than for passengers – all part of the supply chain need to be involved



- A transport authority traditionally interacts with the vehicles on our road
- For freight, this the money doesn't always match the traffic impact
- Business focused behaviour change programmes are needed

- The public sector can remove barriers to change**
  - Supply of land is a key opportunity

# Approach to Freight Management

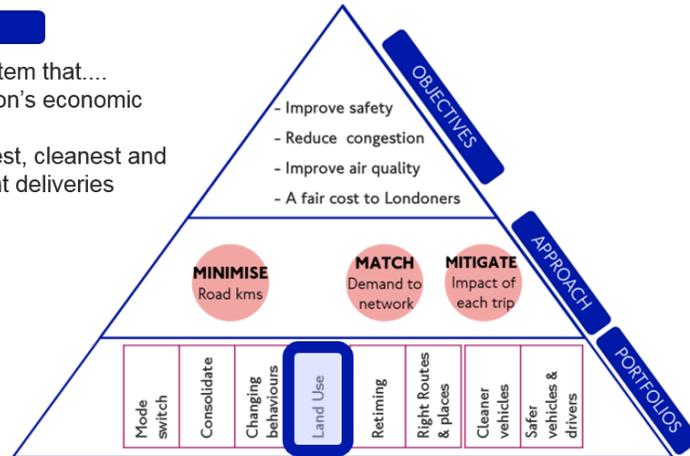
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- ❖ Land use is one of the core components of our approach to freight management

## VISION

A transport system that...

- meets London's economic needs
- with the safest, cleanest and most efficient deliveries possible



# Contents

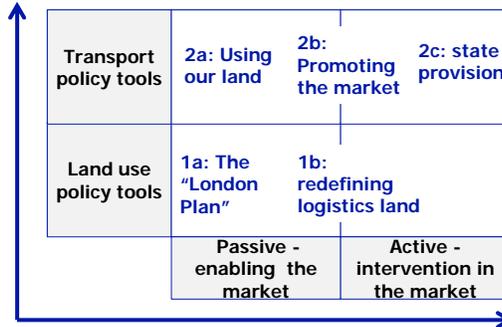
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- ❖ Freight – Issues and Challenges for London
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## Land Use/Freight Experience & Aspirations

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- ❖ Two types of policy tool available to city authorities
  - ❖ Land use planning tools
  - ❖ Transport policy tools
- ❖ Spectrum of ambition/intervention
  - ❖ Passive provision
  - ❖ Transport policy tools



## Case Study 1a: The "London Plan"

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Theme: Land Use

Status: Doing

Objective	<ul style="list-style-type: none"> <li>❖ To protect sufficient and appropriately located land for logistics operations to serve London</li> </ul>
Description	<ul style="list-style-type: none"> <li>❖ "London Plan" – the strategic planning document</li> <li>❖ Strategic Industrial Land (SIL) protected</li> <li>❖ Specific wharves on the river are Safeguarded</li> </ul>
Findings/Observations	<ul style="list-style-type: none"> <li>❖ "Many competing pressures for land, especially housing</li> <li>❖ "Chicken &amp; Egg" – the case for protecting land without an operating model is weak, but no investment in speculative ways of working</li> <li>❖ Planning conditions can improve vehicle management</li> </ul>



**THE LONDON PLAN**  
SPATIAL DEVELOPMENT STRATEGY FOR GREATER LONDON  
JULY 2011  
MAYOR OF LONDON

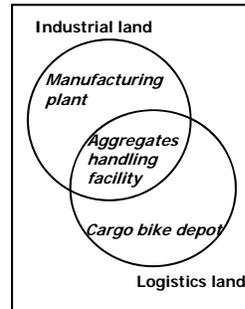
## Case Study 1b: Redefining Logistics Land

43

Theme: Land Use

Status: Thought Piece

Objective	❖ Create a more sophisticated way of considering logistics land needs
Description	<ul style="list-style-type: none"> <li>❖ "Freight" land perceived as noisy and dirty – all treated as "Industrial"</li> <li>❖ Some is, but not all – especially sustainable last mile delivery</li> </ul>
Findings/ Observations	❖ Evidence that integrated logistics / housing land can work (e.g. large supermarket with oversite development)



## Case Study 2a: Using our Land

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Theme: Transport Tools

Status: Thought Piece

Objective	<ul style="list-style-type: none"> <li>❖ To use surplus TfL land for innovative delivery</li> <li>❖ To reduce vehicle kilometres and generate revenues for us</li> </ul>
Description	<ul style="list-style-type: none"> <li>❖ We own over 6,000 parcels of land</li> <li>❖ A pilot to enable freight companies to lease our land</li> <li>❖ A process to encourage innovative delivery methods that reduce congestion</li> </ul>
Findings/ Observations	<ul style="list-style-type: none"> <li>❖ Strong interest from the market</li> <li>❖ Policy competition for land high, e.g. electric charging points</li> <li>❖ About to start – optimistic!</li> </ul>



## Case Study 2b: Promoting the Market

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Theme: Transport Tools

Status: Doing

Objective	<ul style="list-style-type: none"> <li>❖ To help industry and planning authorities locate a Construction Consolidation Centre (CCC)</li> </ul>
Description	<ul style="list-style-type: none"> <li>❖ Companies have already provided these facilities</li> <li>❖ Publication mean</li> <li>❖ A network of sites with "drive time" catchments areas</li> </ul>
Findings/ Observations	<ul style="list-style-type: none"> <li>❖ CCCs can reduce vehicle deliveries to site by 70%</li> <li>❖ A means of controlling vehicle standards – all "FORS" accredited</li> <li>❖ Low cost to us to maximise benefit of what's already there</li> </ul>



London's Construction Consolidation Centre network



## Case Study 2c: State Provision

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Theme: Transport Tools

Status: Though Piece

Objective	<ul style="list-style-type: none"> <li>❖ Directly increase supply of logistics land</li> <li>❖ Promote sustainable delivery</li> </ul>
Description	<ul style="list-style-type: none"> <li>❖ Understand source of market failure</li> <li>❖ Provide UCC/logistics hotels on an "open access" basis – use public sector to share the investment risk</li> <li>❖ Potentially a role for state to operate too?</li> </ul>
Findings/ Observations	<ul style="list-style-type: none"> <li>❖ Low margin operations would not be able to secure land in optimal places – suburbanisation</li> <li>❖ But some delivery companies are paying city centre rents</li> <li>❖ Could business case work with commercial oversite development?</li> </ul>

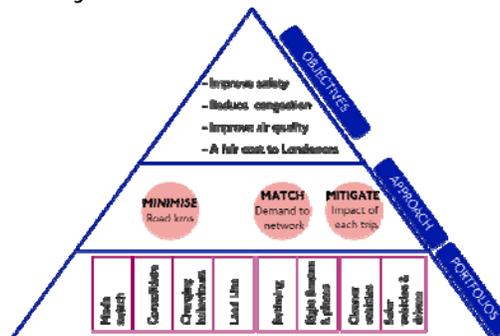


Multi-story shed in Japan  
Source: Property Week

## Key Takeaways

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- ❖ Land use factors are an **important component** of our overall approach
- ❖ We need to **protect, expand or intensify** the use of logistics land to allow for the market to deliver efficiently
- ❖ **Complementary interventions** can also improve how efficiently industry uses its land



Thanks!  
Questions?

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Transport for London  
www.tfl.gov.uk



## Additional Resources

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- ❖ Freight Traffic Control 2050: <http://www.ftc2050.com/>
- ❖ VREF Centre of Excellence – Sustainable Urban Freight Systems: <https://www.coe-sufs.org/>
- ❖ CITYLAB: <http://www.citylab-project.eu/>
- ❖ Mayor of London - Draft Mayor's Transport Strategy: <https://www.london.gov.uk/what-we-do/transport/our-vision-transport/draft-mayors-transport-strategy-2017>
- ❖ Mayor of London – The London Plan: <https://www.london.gov.uk/what-we-do/planning/london-plan/current-london-plan>
- ❖ Transport for London – Freight transport: <https://tfl.gov.uk/info-for/deliveries-in-london/>

