



# London Freight Plan Data Modelling

**Stephen Steele**  
**Friday 9<sup>th</sup> June 2006**

# Contents

- London Freight Plan (LFP) & Proposals
  - Vision & Aims
  - Proposals & Critical Success Factors
  - Freight Plan Success
  - TfL Freight Unit
- London Freight Data Centre
- TfL Modelling Capability
  - London Transportation Studies Model
  - London and SE Region (LASER) Model
  - Strategic Policy Analysis Model
  - Other London Modelling
- Potential Uses of Freight Modelling in London

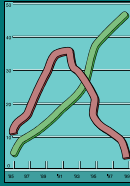
# Vision

‘The safe, reliable and efficient movement of freight and servicing trips to, from, within and, where appropriate, through London to support London’s economy, in balance with the needs of other transport users, London’s environment and Londoners’ quality of life’



# High Level Aims

## Economy



Support London's growth in population and economic activity;

Improve the efficiency of Freight distribution and servicing within London;

Balance the needs of Freight and servicing with those of other transport users and demands for London's resources.

## Environment



Improve air quality and contribute to climate change by reducing emissions of local air pollutants and CO<sub>2</sub> caused by Freight and servicing;

Improve the quality of life in London by minimising the impact of noise and vibrations caused by Freight and servicing .

## Society



Improve health and safety in London by reducing the number of deaths and injuries associated with Freight and servicing;

Improve the quality of life in London by reducing the negative impacts of Freight and servicing on communities.

# Key Plan Proposals

- LFP1** Support the development of sub-regional Freight Quality Partnerships and improved means of communications
- LFP2** Produce an annual London Freight Data Report
- LFP3** Develop and roll-out a programme of freight training in London
- LFP4** Develop and roll out the Freight Operators Recognition Scheme (FORS)
- LFP5** Improve reliability of London deliveries and freight movements: through regulations, design and best practice
- LFP6** Promoting modal shift through supply chain reconfiguration and planning changes where economically and environmentally practicable
- LFP7** Promoting consolidation through supply chain reconfiguration and planning changes where economically and environmentally practicable
- LFP8** Promoting changes to freight transport specification / fuel through supply chain reconfiguration and where economically and environmentally practicable

# LFP Success Factors

## CSF

**Performance Management**

**Managing Relationships**

**Benefits Management**

**Information Management**

**Engagement Strategies**

## Measure

**Establish Economy, Environment & Society base line measures & supporting programmes**

**Agreements defined & ratified with key partners to support LFP aims and objectives**

**Map freight and planning linkages and develop strategies for freight inclusion**

**Data modelled to produce prioritised freight supply chain change opportunities**

**Training standards & objectives identified and agreed with partners**

# Critical Success Factors

Changing over time

Performance Management  
Managing Relationships  
Benefits Management  
Information Management  
Engagement Strategies

LFP Solutions Live  
Agendas Aligned  
Working Together  
UK Wide Participation  
NG Investment Capacity

NG Solutions Live  
Benefits Realised  
Supporting Prosperity  
Quality of Life Improved  
Euro Leadership in Freight

2006

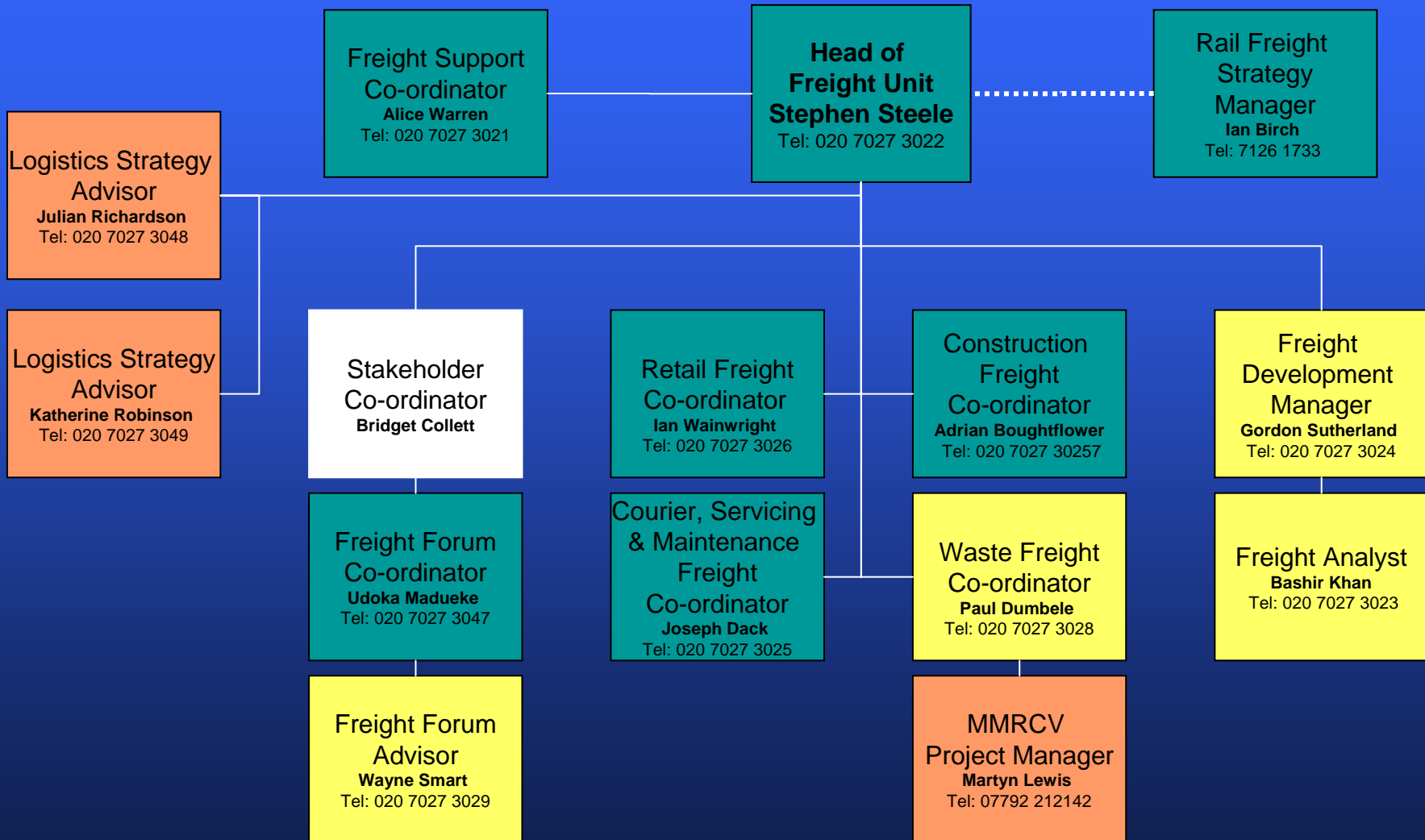
2016

2025

The continuing and active participation of the freight community, and strategic partners, will be developed and strengthened over the life of the Plan.

NG = Next Generation

# TfL Freight Unit



Email: [firstname.lastname@tfl.gov.uk](mailto:firstname.lastname@tfl.gov.uk) or [freight@tfl.gov.uk](mailto:freight@tfl.gov.uk)

# The London Freight Data Centre (LFDC)

- Provides the means to deliver a meaningful London Freight Data Report (LFP2)
- Will assist with the following:
  - the relationship between goods/service flows and vehicle activity;
  - the interaction between transport policies and supply chain processes;
  - understanding barriers to improved sustainable performance in supply chains, and potentially at a company level.

# Selected LFDC Activities

- Produce an annual London Freight Data Report
- Assess and report base line data and identify / fill gaps in sector data
- Develop and monitor agreed Key Performance Indicators
- Survey London van activity
- Report on available regional/world city freight benchmarking
- Develop greater access to non-road freight commodity and flow data for London

# Existing TfL Modelling Capability

- **LTS** is a large multi-modal transport model for the London area, fully compliant with Government guidance.
- **LASER** strategic multi-modal forecasts for London (M25) and South East
- **SPAM2** (Strategic Policy Analysis Model v.2), a simple elasticity mode choice spreadsheet model.
- **London Atmospheric Emissions Inventory (LAEI) London Road Traffic Noise Map** information on the levels of road traffic noise

# London Transportation Studies Model (LTS)

- LTS model is a strategic multi-modal transport model, it includes all significant road, rail and underground travel for the London area.
- Consists of 4 main components
  - Demand
  - Mode & distribution
  - Assignment
- Road network - all motorways, A-roads, B-roads, important minor roads are included (20,000 links).

# LTS Model – Forecasting Goods Vehicles

- LTS treats goods vehicles in two classes:
  - Light Goods Vehicles (LGV)
  - Other Goods Vehicles (OGV)
- LTS uses Local Area Travel Survey (LATS) data
- Forecasting is based on applying growth factors to base year matrices and refined by predicting forecast year trip ends using a regression model

# LTS Model - Goods Vehicle Matrices Development

- LGV and OGV Internal Matrices
  - Predict future year zonal trip ends from a regression model
  - ‘Furness’ the observed 1991 base year matrix to the future year trip ends
  - After furnessing apply controlling growth factors to the resulting matrix at an aggregated area
  - Determine a ‘delta’ matrix for 2001 by calculating the difference between the 2001 forecast matrix and an ‘observed’ 2001 matrix
  - Apply the delta matrix to other forecast year matrices
- External to External Trips
  - Apply NRTF growth factors to the observed base year matrix

# London and SE Region (LASER) Model

- TfL/DfT joint ownership – little used but has freight potential
- Provides strategic multi-modal forecasts for London (M25) and South East.
- Changes in Household locations as a result to changes in transport costs and impact on rents for space.
- Crossrail, land use interactions in Thames Gateway (Internal and ext. to GLA), M25 study (ORBIT)

# Strategic Policy Analysis Model (SPAM 2)

- Strategic Policy Analysis Model able to test a wide range of transport policy options
- The key outputs are graphical and tabular representations of changes in trip making data and consequent economic impact
- Still being developed and has not yet been used for any formal policy testing work
- Considers 10 modes, namely NR, Bus, Tram, LUL, DLR, Goods vehicles, Car, Motorcycle, Walk and Cycle.

# London Atmospheric Emissions Inventory (LAEI)

- produces an atmospheric emissions inventory
- source of traffic data for major roads is DfT manual traffic counts
- contains light goods vehicles, three categories of rigid goods vehicles and three categories of articulated vehicles

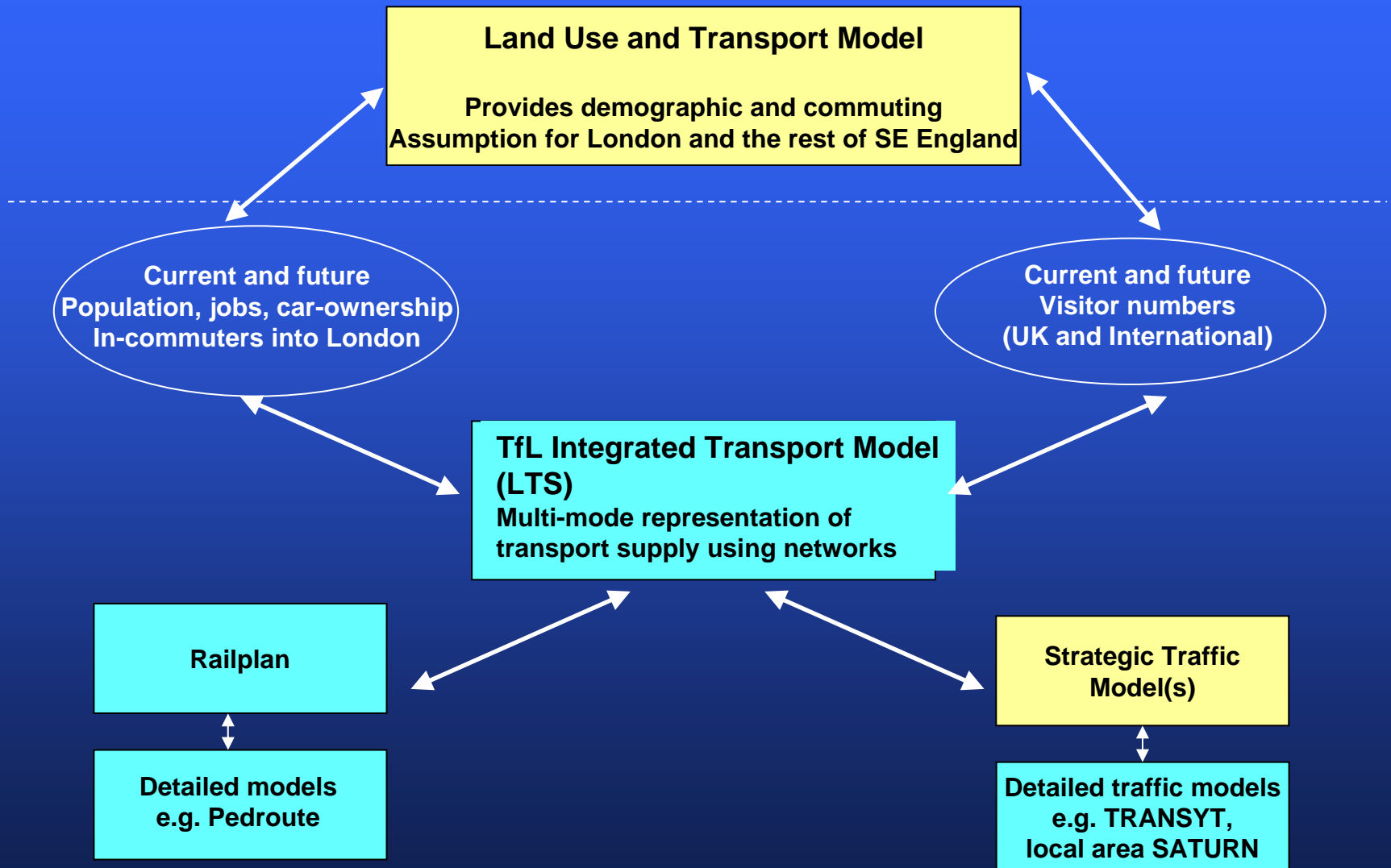
# London Road Traffic Noise Map

- provides information on the levels of road traffic noise
- establishes the existing baseline against which future noise initiatives can be measured
- traffic data being used for the project is from (LAEI) but uses only two categories of goods vehicles

# Other London Modelling

- **Railplan** is a strategic public transport model.
- **APRIL** model predicts changes in travel resulting from a wide range of policies for congestion charging.
- **VALID** is a VISSUM software-based model of Central London for testing a range of measures including bus priority schemes.
- **SOCCAR** simulates the impacts of setting road user charges in Greater London and the M25 in 2002.

# Hierarchy of Models



# Potential Uses of Freight Modelling in London

- Sustainability issues
  - Environmental vs Social vs Economic
  - Forecasting growth of freight in London
- Impact of freight proposals
  - Business cases and prioritisation of investment
  - Adoption of best practice
  - Delivery reliability – journey time / loading
  - Modal shift
  - Consolidating goods for London
  - Changes to freight vehicle / fuel specification

Decision:

Large scale London-wide freight  
model

VS

Smaller modelling exercises driven  
by particular initiatives