

Oxfordshire County Council - Freight and Logistics Strategy

October 2021

Contents

Executive Summary	6
Introduction	9
LTP4 Freight Strategy	10
LTP4 Freight Strategy Actions	10
Why we need a new strategy.....	11
LTCP vision and key themes.....	12
LTCP Vision.....	12
LTCP Key Themes	12
Headline Targets	13
Freight Context.....	14
Economic Value of Freight.....	14
Freight Movement.....	14
Climate Change	16
Local Air Pollution	17
Congestion	17
Future Projections.....	18
Future fuel type.....	19
Local Context and Issues	19
Key Principles	20
Barriers	20
Complexity of the freight system	20
Need for goods.....	20
Amount of goods transported	20
Modal shift.....	21
Market forces	21
Impacts on businesses and consumers	21
Appropriate Movement	22
Reducing the need to travel.....	22
Action 1 – Promote considerations about reducing the need for freight movement	23
HGV route map.....	23
Action 2 – Develop appropriate HGV route map	23
Action 3 – Create a map of existing weight restrictions.....	23
Action 4 – Conduct review of road classifications	26
Action 5 - Promotion of HGV route map.....	26
Encouraging use of HGV routes	26

Action 6 – Establish a clear process for how any action to address inappropriate HGV movement is decided and funded.....	27
Action 7 – Develop more detailed guidance for inappropriate HGV movement action request process	28
Action 8 – Consider the establishment of area based weight restrictions	29
Enforcement	29
Action 9 – Lobby for enforcement of moving traffic offences under Traffic Management Act part 6.....	30
Action 10 – Explore implementation of road user charging schemes to reduce commercial vehicle flows, emissions, and encourage use of the appropriate routes	30
Action 11 – Explore technology to aid enforcement	31
Action 12 – Review best practice	31
Influencing new development	31
Action 13 – Seek to influence the location and design of new development	32
Action 14 – Ask developers of major sites to prepare Construction Logistics Plans	32
Efficient movement	33
Alternative modes	33
Action 15 – Monitor the use of water freight.....	35
Action 16 – Promote rail freight.....	36
Action 17 – Support the provision of strategic rail freight interchanges.....	36
Action 18 – Work with stakeholders to increase rail network capacity	37
Network management.....	37
Action 19 – Enhance network management.....	37
Action 20 – Improve data gathering and usage.....	38
Action 21 – Improve data sharing.....	38
Parking facilities.....	38
Action 22 – Review current rest stops and lorry parking facilities	39
Action 23 – Promote the creation of rest stops and lorry park facilities	39
Technology	39
Action 24 – Support the development and trialling of drone technology.....	40
Action 25 – Monitor truck platooning progress and opportunities.....	41
Action 26 – Consider future technology requirements.....	42
Zero-tailpipe emission, zero-carbon movement	43
Vehicle refuelling requirements	43
Action 27 – Support BEV charging infrastructure requirements	44
Action 28 – Monitor alternative HGV fuel requirements and options	45

Action 29 – Strategically locate refuelling infrastructure	45
Action 30 – Monitor electrified road systems study	46
Cycle freight.....	46
Action 31 – Promote cycle freight in Oxford	47
Action 32 – Promote cycle freight across Oxfordshire.....	48
Reducing local air pollutants	49
Clean Air and Zero Emission Zones	49
Action 33 – Engagement around CAZs and ZEZs	50
Consolidation Centres	50
Action 34 – Freight consolidation feasibility study.....	52
Action 35 – Safeguard land for freight consolidation	52
Safe movement.....	53
Reducing conflict with people	53
Action 36 – Reduce conflicts between freight vehicles and people	54
Education.....	54
Action 37 – Promote road safety education resources and campaigns.....	55
Speed management	55
Action 38 – Support expansion of 20mph speed limits.....	55
Food delivery riders	55
Action 39 – Establish a code of conduct with food delivery operators.....	56
Monitoring movement.....	57
Action 40 – Delivery of the LTCP monitoring policy	57
Action 41 – Analyse HGV data by axles and weight	58
Action 42 – Analysis of freight data	59
Action 43 – Monitoring of freight schemes	59
Partnership working.....	60
Engagement and cocreation	60
Action 44 – Engagement, cocreation and problem solving	60
Action 45 – Cross boundary working.....	61
Action 46 – Explore establishment of freight steering group	61
Action 47 – Work with stakeholders to reschedule journey times	61
Lobby central government	61
Action 48 – Work with stakeholders to encourage alternatives to road freight ..	62
Funding and implementation	63
Funding.....	63
Funding bids	63
Developer contributions	63

Partnership working	63
Charging schemes	63
Enforcement revenues	63
Implementation	64
Glossary	66

Executive Summary

Freight is the general term for goods transported from one place to another by any means. Freight can therefore be moved in a variety of ways including by Heavy Goods Vehicles (HGV), Light Goods Vehicles (LGV), rail, cargo bikes and emerging modes such as drones. This strategy covers all modes of freight movement in Oxfordshire.

Traditionally we have focused on just the mode responsible for transporting goods. However, it is increasingly important that we consider broader factors. We have therefore incorporated considerations about logistics. Logistics refers to the overall process of managing how resources are acquired, stored, and transported to their final destination.

The movement of goods is essential to supporting many aspects of our lives at both the local and national level. However, there are a number of complex challenges surrounding the freight system, particularly at the local level.

This strategy addresses some of the challenges associated with the movement of goods in Oxfordshire and sets out the actions required to deliver appropriate, efficient, clean and safe movement. Addressing the movement of goods is essential if we are to meet broader air quality and zero-carbon objectives.

This strategy has been published in support of Oxfordshire County Council's Local Transport and Connectivity Plan (LTCP). The LTCP outlines our long term transport ambitions for the county and the policies required to achieve them. This is one of a number of more detailed supporting strategies that addresses complex topics.

Why is a new freight and logistics strategy needed?

Following review of our Freight Strategy published in 2016 and analysis of the broader context, it was concluded that a new freight and logistics strategy for Oxfordshire is required. This is for several key reasons:

- The amount of goods being moved, and vehicle miles driven have been increasing.
- The way goods are moved, and customer expectations have been changing.
- Technological changes to how goods can be moved.
- Changing policy context, particularly the increased focus on environmental goals and zero-carbon emissions since 2016.

What are the key principles?

Based on our analysis, we have identified a set of key principles which our Freight and Logistics Strategy will be structured around. Our key principles are:

- Appropriate movement
- Efficient movement
- Zero-tailpipe emission, zero-carbon movement
- Reducing local air pollutants
- Safe movement
- Monitoring movement
- Partnership working

It should be noted that whilst the movement of goods is related to a range of issues such as congestion, road safety and air quality, it is also important to the national and local economy. Solutions will therefore be required that balance these considerations and create an efficient, sustainable transport network for all.

How will the freight and logistics strategy deliver the key principles?

Each key principle has its own chapter which outlines why it is important, key considerations and the actions we believe are required to deliver it. A summary of the actions is provided below. For further details please use the contents to navigate to the relevant section of the strategy.

Appropriate movement	Action 1 – Promote considerations about reducing the need for freight movement Action 2 – Develop appropriate HGV route map Action 3 – Create a map of existing weight restrictions Action 4 – Conduct review of road classifications Action 5 – Promotion of HGV route map Action 6 – Establish a clear process for how any action to address inappropriate HGV movement is decided and funded Action 7 – Develop more detailed guidance for inappropriate HGV movement action request process Action 8 – Consider the establishment of area based weight restrictions Action 9 – Lobby for enforcement of moving traffic offences under Traffic Management Act part 6 Action 10 – Explore implementation of road user charging schemes to reduce commercial vehicle flows, emissions, and encourage use of the appropriate routes Action 11 – Explore technology to aid enforcement Action 12 – Review best practice Action 13 – Seek to influence the location and design of new development Action 14 – Ask developers of major sites to prepare Construction Logistics Plans
Efficient movement	Action 15 – Monitor the use of water freight Action 16 – Promote rail freight Action 17 – Support the provision of strategic rail freight interchanges Action 18 – Work with stakeholders to increase rail network capacity Action 19 – Enhance network management Action 20 – Improve data gathering and usage Action 21 – Improve data sharing Action 22 – Review current rest stops and lorry parking facilities Action 23 – Promote the creation of rest stops and lorry park facilities Action 24 – Support the development and trialling of drone technology Action 25 – Monitor truck platooning progress and opportunities Action 26 – Consider future technology requirements
Zero-tailpipe emission, zero-carbon movement	Action 27 – Support battery electric vehicle charging infrastructure requirements Action 28 – Monitor alternative HGV fuel requirements and options Action 29 – Strategically locate refuelling infrastructure

	Action 30 – Monitor electrified road systems study Action 31 – Promote cycle freight in Oxford Action 32 – Promote cycle freight across Oxfordshire
Reducing local air pollutants	Action 33 – Engagement around Clean Air and Zero Emission Zones Action 34 – Freight consolidation feasibility study Action 35 – Safeguard land for freight consolidation
Safe movement	Action 36 – Reduce conflicts between freight vehicles and people Action 37 – Promote road safety education resources and campaigns Action 38 – Support expansion of 20mph speed limits Action 39 – Establish a code of conduct with food delivery operators
Monitoring movement	Action 40 – Delivery of the LTCP monitoring policy Action 41 – Analyse HGV data by axles and weight Action 42 – Analysis of freight data Action 43 – Monitoring of freight schemes
Partnership working	Action 44 – Engagement, cocreation and problem solving Action 45 – Cross boundary working Action 46 – Explore establishment of freight steering group Action 47 – Work with stakeholders to reschedule journey times Action 48 – Work with stakeholders to encourage alternatives to road freight

How will the freight and logistics strategy be funded and implemented?

Some of the actions identified in the strategy will require funding to deliver. However, councils no longer receive funding directly to spend on transport improvements. We will therefore work hard to identify alternative funding sources. Key potential funding sources are; funding bids, developer contributions, partnership working, charging schemes and enforcement revenues.

We are committed to delivering the range of actions identified in this strategy, however it is necessary to prioritise them. This will help to guide future work on delivery of the strategy and make best of use of the resources available. In order to do this, we have grouped the actions into those we anticipate to deliver by 2025 and those that will be delivered between 2025 and 2030.

Introduction

Freight is the general term for goods transported from one place to another by any means. Freight can therefore be moved in a variety of ways including by Heavy Goods Vehicles (HGV), Light Goods Vehicles (LGV), rail, cargo bikes and emerging modes such as drones. This strategy covers all modes of freight movement in Oxfordshire.

Traditionally we have focused on just the mode responsible for transporting goods. However, it is increasingly important that we consider broader factors. We have therefore incorporated considerations about logistics. Logistics refers to the overall process of managing how resources are acquired, stored, and transported to their final destination.

The movement of goods is essential to supporting many aspects of our lives at both the local and national level. The freight system plays a key role in supporting the national economy transporting raw materials and products to factories, finished goods to retailers and goods to ports. More locally the freight system plays a key role in delivering goods to our shops, products to our homes, and serving the manufacturing and construction industries.

The UK freight system moved 154 billion tonnes of goods in 2019¹ supporting almost £400 billion in manufacturing sales and transporting 140 million tonnes of goods to ports for export². However, there are a number of complex challenges surrounding the movement of goods, particularly at the local level.

This strategy has been published in support of Oxfordshire County Council's (OCC) Local Transport and Connectivity Plan (LTCP) and seeks to outline our approach to addressing these challenges.

The LTCP is the County Council's statutory Local Transport Plan, required under the Transport Act 2008. It outlines our long term transport ambitions for the county and the policies required to achieve them. This is one of a number of more detailed supporting strategies that addresses complex topics in more detail.

This strategy addresses some of the challenges associated with the movement of goods in Oxfordshire and sets out the actions required to deliver appropriate, efficient, clean and safe movement. The strategy also outlines how the freight system is essential if we are to meet broader air quality and zero-carbon objectives, as outlined in the main LTCP.

As part of developing this strategy we have engaged with relevant partners including our district councils and the Road Haulage Association. We have engaged with these partners as we recognise the need for action at various levels to address the existing issues with goods movement in the county. We plan to continue working with a range of partners as we move forward to deliver this strategy.

¹ Department for Transport: Domestic Road Freight Statistics, United Kingdom 2019

² The Value of Freight, Vivid Economics, 2019

LTP4 Freight Strategy

OCC's existing Freight Strategy was produced in 2016 and was an approved strategy as part of the Local Transport Plan 4 (LTP4). The strategy sought to address the specific challenges associated with freight in Oxfordshire.

The LTP4 Freight Strategy provides an overview of freight and outlines an approach based around 6 principles. These principles were:

- Understand
- Inform
- Encourage
- Deter
- Manage
- Plan

The strategy is complemented by the LTP4 Route Hierarchy which outlines 6 different road classes, the definition and characteristics of each. The hierarchy identifies which Oxfordshire routes are in each class and whether the class is suitable for restrictions on access or permanent weight restrictions.

Using the route hierarchy, the Oxfordshire lorry route map was produced. The map identified suitable through routes in the county and suitable roads for accessing Oxfordshire's towns. It also highlighted where existing restrictions are and environmentally sensitive areas that should be avoided if at all possible.

As part of the development process for this strategy, we have conducted a critical review of the LTP4 freight strategy to understand strengths, weaknesses and identify areas to carry over. This has helped to inform and refine the content of this strategy.

LTP4 Freight Strategy actions

As part of our critical review, we have also reviewed the actions identified in the LTP4 Freight Strategy and progress made on delivering them. These are shown below and help to demonstrate progress made.

Action	Progress
Reviewing cycling and HGVs in order to understand how cyclist casualties can be reduced.	Ongoing road safety work and casualty reporting conducted.
We will improve our understanding of freight transport, the needs of freight operators and their customers as well as the impacts on local communities.	Established regular contact with the Road Haulage Association.
We will take advantage of new technology and best practice to help manage freight movements, notably through our recent adoption of Freight Gateway.	Freight gateway adopted but has since ceased to operate.
We will support the provision of appropriately sited rail freight facilities.	Ongoing work to identify suitable locations.
The county council will consider environmental weight restrictions across the County,	Burford weight restriction trial ongoing – note that this was funded by 3 rd parties as no funding

particularly areas which are subject to significant levels of HGV traffic, prioritising the towns of Burford, Chipping Norton and Henley-on-Thames.	was available. Chipping Norton work ongoing.
In Oxford we will review signing on the ring road to ensure that lorries are directed to their destinations within the city by the most appropriate routes.	Not completed.
We will integrate neighbourhood weight watch with the LorryWatch online reporting facility.	LorryWatch available but OCC no longer have access.
We will engage with freight and logistics operators and other stakeholders, reflecting our resource levels and prioritising practical solutions to problems raised.	Ongoing engagement with operators and stakeholders however limited resources and funding has limited ability to implement solutions.
We will influence the location and design of new development, particularly employment sites and any related transport infrastructure so that these can function well, with efficient freight access to and from the strategic transport network.	Ongoing consideration that OCC seek to influence.
We will ask developers of major sites to prepare Construction Logistics Plans and Delivery and Servicing Plans.	Ongoing requirement for developers of major sites.
We will seek developer contributions to mitigate the impact of freight traffic on the environment and on the local and strategic road network.	Ongoing negotiation with developers for contributions to mitigate a range of impacts including freight traffic.

Why we need a new strategy

Following review of the LTP4 freight strategy and analysis of the broader freight context, it was concluded that a new freight and logistics strategy for Oxfordshire is required. This is for several key reasons:

- The amount of goods being moved, and vehicle miles driven have been increasing.
- The way goods are moved, and customer expectations have been changing.
- Technological changes to how goods can be moved.
- Changing policy context, particularly the increased focus on environmental goals and zero-carbon emissions since 2016.

The freight related factors are expanded upon during our data analysis in the freight context section. The broader changes to policy context are summarised in the main LTCP document and supporting baseline report.

LTCP vision and key themes

This strategy has been developed to support the LTCP for Oxfordshire. The strategy will therefore align with and help to deliver our overarching aims for the county's transport system. An overview of the vision and key themes is provided in this section for context and to help guide the strategy.

LTCP Vision

The LTCP vision has been developed to set out the overarching direction for transport in Oxfordshire. The vision will ensure that we have outlined a clear long-term ambition for transport in the county.

"Our Local Transport Plan Vision is for a zero-carbon Oxfordshire transport system that enables all parts of the county to thrive.

Our transport system will enable the county to be one of the world's leading innovation economies, whilst supporting clean growth, tackling inequality and protecting our natural and historic environment. It will also be better for health, wellbeing, social inclusivity and education.

Our plan sets out to achieve this by reducing the need to travel and discouraging unnecessary individual private vehicle use through making walking, cycling, public and shared transport the natural first choice."

LTCP Key Themes

In support of the vision we have identified five proposed key themes. These are the specific areas we are seeking to transform through implementation of the vision. We have also identified the outcomes we hope to deliver for each key theme.



Environment

Outcome: Sustainable communities that are resilient to climate change, enhance the natural environment, improve biodiversity and are supported by our zero-carbon transport network.



Health

Outcome: Improved health and wellbeing and reduced health inequalities enabled through active and healthy lifestyle and inclusive, safe and resilient communities.



Place shaping

Outcome: Sustainable and resilient communities which provide healthy places for people and a high-quality environment capitalising upon the exceptional quality of life, vibrant economy and dynamic communities of our county.



Productivity

Outcome: A world leading business base that is sustainable, has created new jobs, products and careers for all communities and is supported by an effective, zero-carbon transport network.



Connectivity

Outcome: Communities are digitally connected, innovative technologies are supported and there is improved connectivity and mobility, across the county, enabling greater choice and seamless interchange between sustainable modes.

Headline Targets

In order to track delivery of the vision and key themes we have identified two headline targets. These will help us to quantify progress made on delivering the vision and ensure that we are on track to deliver the vision.

By 2030 our target is to:

- Replace or remove 1 out of every 4 current car trips in Oxfordshire

By 2040 our targets are to:

- Deliver a zero-carbon transport network
- Replace or remove 1 out of every 3 current car trips in Oxfordshire

By 2050 our target is to:

- Deliver a transport network that contributes to a climate positive future

Freight Context

This section provides an overview of current freight conditions. This helps us to understand the importance of freight, how it currently moves, its impacts and potential future changes. This understanding has informed how we propose to manage freight.

Where possible we have identified Oxfordshire specific statistics. However, owing to the extensive and sophisticated nature of the freight network this is not always possible and so we have also included nationally published statistics. Whilst these are not specific to Oxfordshire, they help us to understand current impacts and future changes that will affect the county.

As with many sectors, freight movements were disrupted by the COVID-19 pandemic in 2020. We have therefore focused on data from 2019 which was consistent with long term trends. Further analysis can be found in the LTCP baseline report which notes 2020 trends. We will continue to monitor future data to assess whether any trends from 2020 are part of a longer term shift.

Economic Value of Freight

The UK freight system moved 154 billion tonnes of goods in 2019³ supporting almost £400 billion in manufacturing sales and transporting 140 million tonnes of goods to ports for export. In total, the cost of the UK freight system is equivalent to around 4% of Gross Domestic Product (GDP)⁴.

The freight system therefore plays a critical role in supporting the national economy and is a significant financial sector. It is estimated that the UK spends up to £80 billion per year on road freight, rail freight and warehousing. Of this, road freight accounts for around £38 billion; rail freight for around £1 billion; and warehousing for £20-38 billion. The efficient movement of freight is therefore important for both the national and local economies.

Freight Movement

The amount of freight moved, and the vehicle miles driven have been increasing over the last 15 years. In 2019 there were 154 billion tonnes of goods moved, a 1% increase from 2018 and 19.1 billion vehicle kilometres travelled, a 2% increase from 2018. In total the amount of goods moved has increased by 23% since 2009⁵.

³ Department for Transport: Domestic Road Freight Statistics, United Kingdom 2019

⁴ The Value of Freight, Vivid Economics, 2019

⁵ Department for Transport: Domestic Road Freight Statistics, United Kingdom 2019

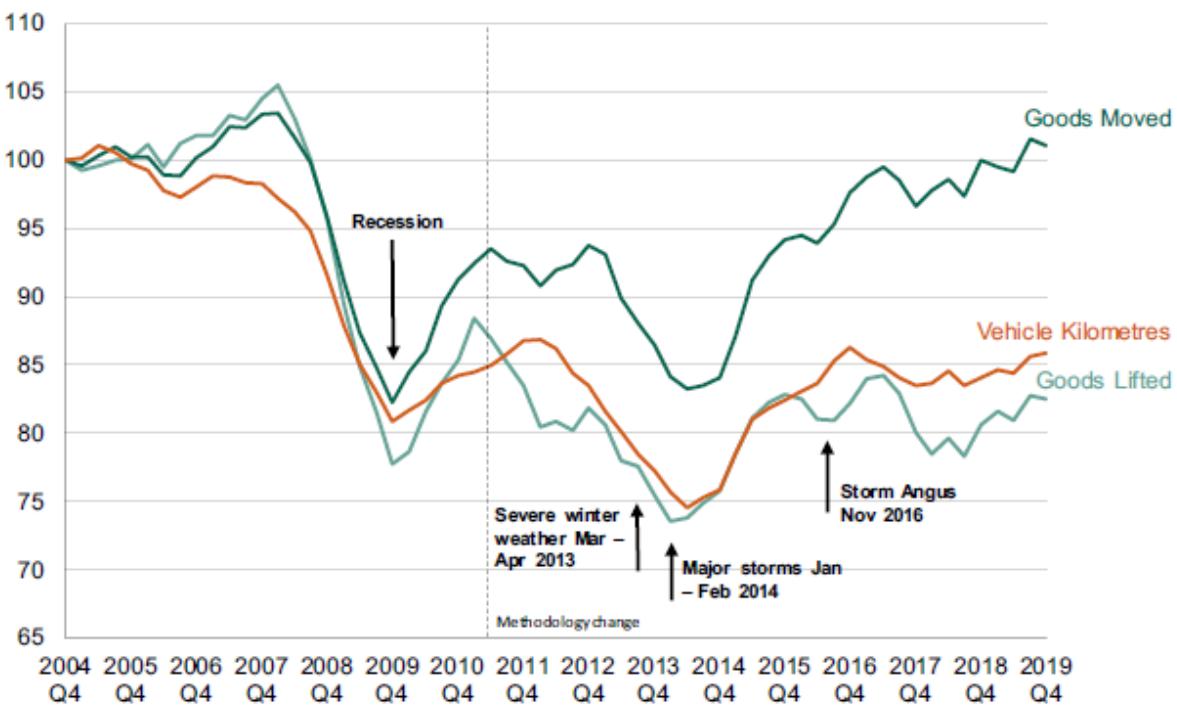


Figure 1 - Trend in goods moved, goods lifted and vehicle kilometres by GB-registered HGVs, rolling 4 quarter totals, 2004 Q4 to 2019 Q4⁶

The way in which goods are moved has also been changing over the last 20 years. There has been a significant growth in the number of LGVs, vans of no more than 3.5 tonnes, with the number HGVs falling. In total, the number of LGVs increased by 29% between 2004 and 2014, compared to a 5% decrease in the number of HGVs over the same period⁷. LGV traffic has increased by 67% over the last 20 years and currently makes up 15% of all traffic, with HGVs making up 5%.

Some of these changes may be attributable to the fact that freight is increasingly carried in larger HGVs. The share of freight carried in smaller rigid HGVs (under 17 tonnes) decreased from 11% in 2000 to only 2% in 2017. The share of freight carried in larger rigid HGVs increased from 13% to 18% over the same period⁸. Whilst these changes may help to reduce the number of HGVs on the road, they present challenges at the local level, particularly in many of the rural villages in Oxfordshire.

Other factors that may be changing the way freight is moved are the rise of online shopping and changing customer expectations. In 2018 online sales comprised 18% of total sales across all retail in the UK, up from 16% in 2017⁹. The COVID-19 pandemic has likely contributed to an increased demand for online shopping and home deliveries.

⁶ Department for Transport: Domestic Road Freight Statistics, United Kingdom 2019

⁷ RAC Foundation: Van Travel Trends in Great Britain

⁸ The Value of Freight, Vivid Economics, 2019

⁹ Office of National Statistics (2018) Retail sales, Great Britain: October 2018

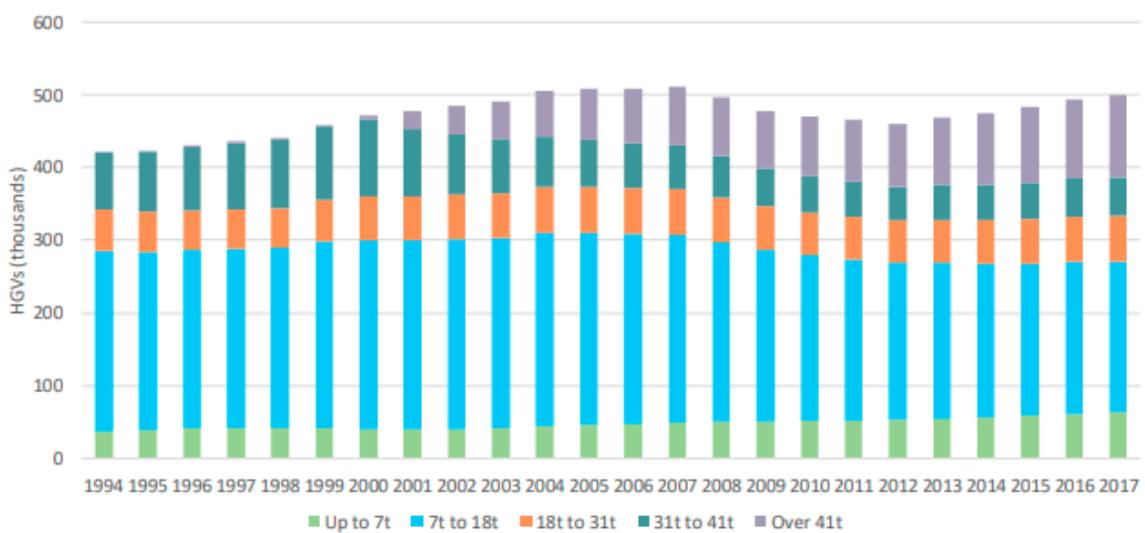


Figure 2 – Proportion of UK freight carried by HGV weight class¹⁰

Similarly, customer expectations have also changed, with there now being more demand for deliveries to be made in tight timescales. This presents a challenge for delivery services and can require running more vehicles to meet demand¹¹.

Climate Change

Transport is now responsible for the largest proportion of UK greenhouse gas emissions. In 2016 transport was responsible for 27% of total UK greenhouse gas emissions, with road transport responsible for 91% of transport emissions. Within this HGVs and vans produce 35% of road transport emissions¹².

In Oxfordshire transport is responsible for a larger proportion of greenhouse gas emissions than the national average, producing 36.5% of all emissions in the county¹³. Road transport is responsible for the majority of these emissions, 33.3%, making it the largest source of emissions in Oxfordshire.

With forecasts predicting an increase in freight miles, there is further need to address the impacts of freight on climate change. If unaddressed, this could lead to carbon dioxide emissions from freight transport increasing by around 20% by 2050¹⁴.

Action is needed to address emissions from all modes of road transport in Oxfordshire in order to achieve our goal of a zero-carbon transport system by 2040.

¹⁰ The Value of Freight, Vivid Economics, 2019

¹¹ McKinsey & Company (2014) Same-day delivery: The next evolutionary step in parcel logistics

¹² UK Government: The Road to Zero

¹³ University of Oxford Transport Studies Unit: Pathways to a zero-carbon Oxfordshire

¹⁴ The Value of Freight, Vivid Economics, 2019

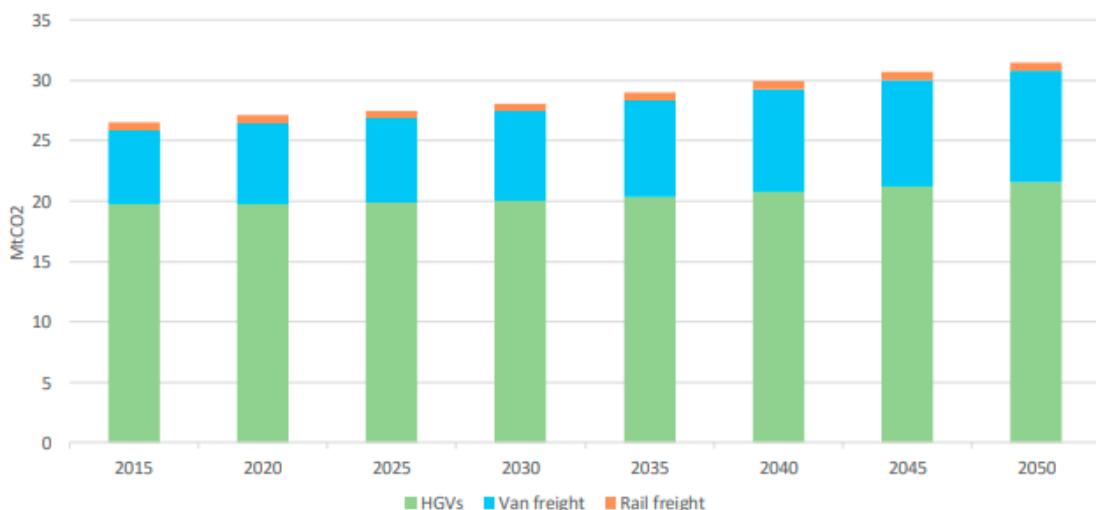


Figure 3 – Projected emissions from freight if unaddressed¹⁵

Local Air Pollution

Air pollution is a mix of particles and gases of both natural and human origin. The main components of urban air pollution are particulate matter (PM) and nitrogen dioxide (NO₂). Road transport is the largest source of NO₂ and fourth largest source of PM¹⁶. Currently, there is no clear evidence of a safe level of exposure.

In Oxfordshire, it was estimated that 3,578 years of healthy life were lost due to air pollution in 2017¹⁷. Research by King's College London also found that roadside air pollution in Oxford stunts lung growth in children by 14.1%¹⁸. Immediate action is therefore required to protect resident's health.

Congestion

The increase in vehicle miles travelled and a growing population have created issues with congestion across the UK. On average British drivers lose 115 hours per year to congestion, costing the UK economy an estimated £5.2 billion¹⁹.

Freight is both impacted by and contributes to congestion. It is estimated that congestion delays HGV journeys by around 23% today, potentially rising to 35% by 2050²⁰. Overall, it is estimated that the total cost of congestion to the UK freight system today is more than £6 billion.

Freight also contributes to congestion and this contribution could increase due to the projected rise in LGV and HGV miles. Options for reducing congestion are more limited for freight than for passenger vehicles. However, a range of options exist that we will seek to explore with freight operators. Technology is also creating new opportunities for more efficient freight movement.

¹⁵ The Value of Freight, Vivid Economics, 2019

¹⁶ <https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution>

¹⁷ Oxfordshire Health and Wellbeing Joint Strategic Needs Assessment 2020

¹⁸ Kings College London: Personalising the Health Impacts of Air Pollution – Summary for Decision Makers, 2019

¹⁹ INRIX 2019 Global Traffic Scorecard

²⁰ The Value of Freight, Vivid Economics, 2019

Future Projections

As highlighted, the amount of freight movement is forecast to increase. The Department for Transport (DfT) has forecast LGV traffic to increase by between 23% and 108% by 2050, depending on the scenario. Whereas HGV traffic growth is forecast to be lower than other vehicle types with growth ranging from 5% to 12% by 2050²¹. The graphs below demonstrate the current levels of LGV and HGV traffic and the forecasts for growth under different scenarios.

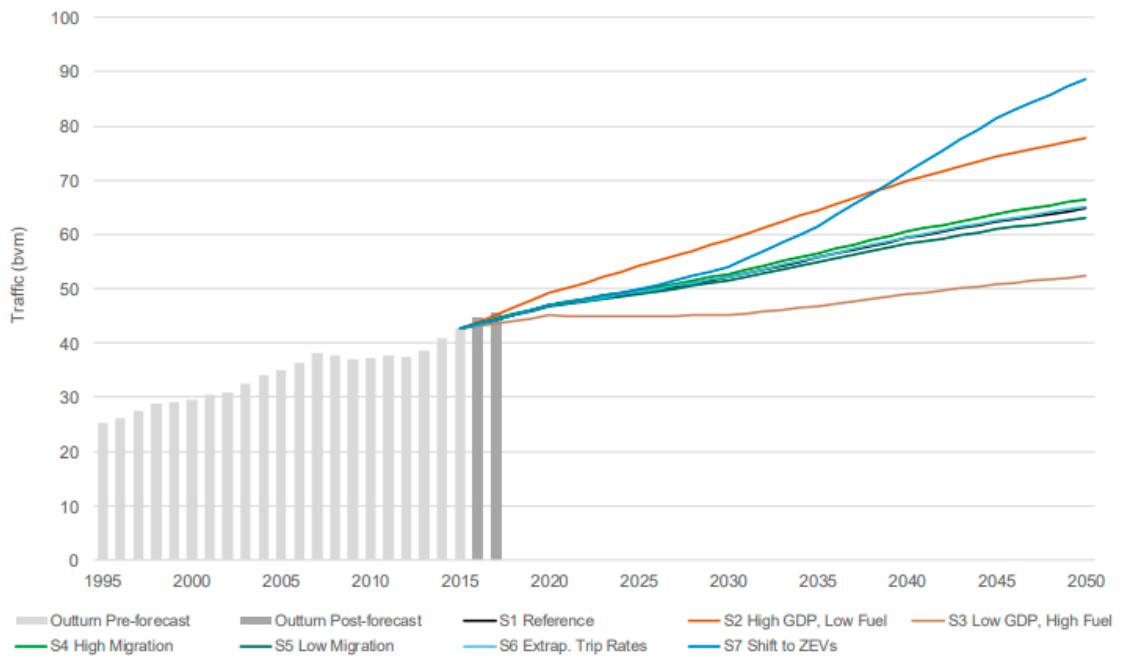


Figure 5 – LGV road traffic forecasts²²

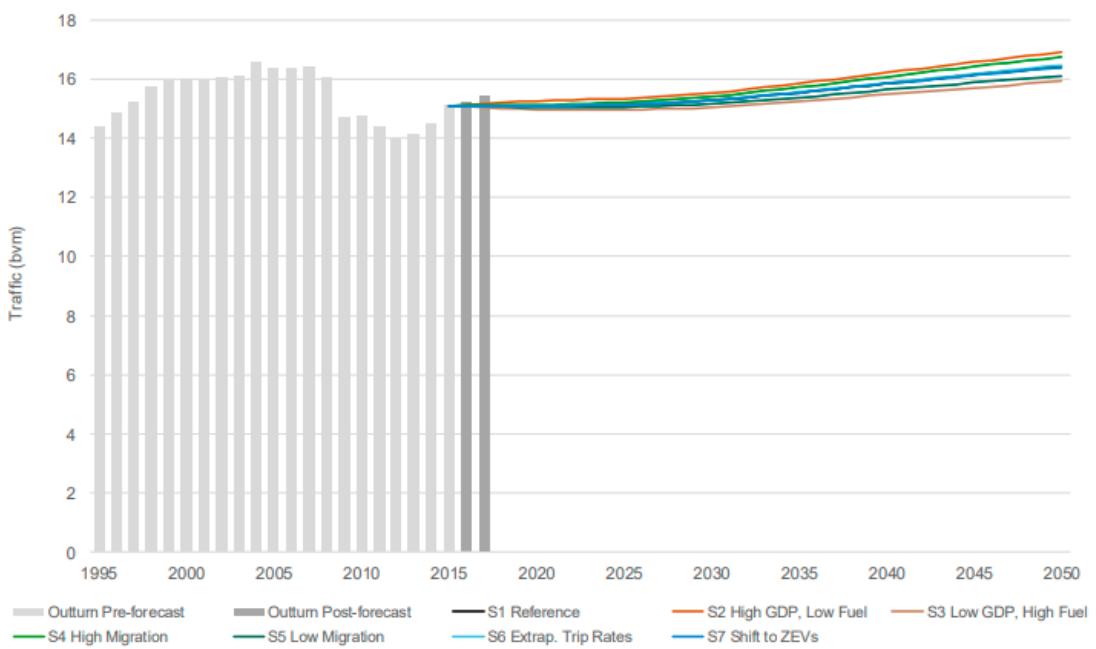


Figure 6 – HGV road traffic forecasts²³

²¹ Department for Transport: Road Traffic Forecasts 2018

²² Department for Transport: Road Traffic Forecasts 2018

²³ Department for Transport: Road Traffic Forecasts 2018

Increased freight traffic will have knock on impacts for congestion and air quality in the county. The impacts of this projected growth and potential mitigating measures will be considered as part of this strategy.

Future fuel type

In November 2020 the UK government announced that from 2035, all new cars and vans must be Zero Emission Vehicles (ZEV). A [delivery plan](#) for how this will be achieved was published in July 2021. Zero emission LGVs are largely Battery Electric Vehicles (BEVs), utilising the same technology as electric cars.

However, there is some uncertainty regarding the future fuel type of HGVs. The uptake of zero-emission HGVs has been much slower than other vehicle types owing to a range of challenges. It remains to be seen which fuel type, be it electric, hydrogen or another, will emerge as the dominant fuel.

Future projections for the uptake of these vehicles therefore vary and are unreliable. It is predicted that both battery electric and hydrogen powered HGVs will be adopted to replace Internal Combustion Engine (ICE) HGVs.

Battery electric HGVs are predicted to be adopted at scale between 2022 and 2030, exceeding ICE HGVs from approximately 2032. Hydrogen powered HGVs are predicted to be adopted at scale between 2024 and 2040, exceeding ICE HGVs from approximately 2036²⁴.

Owing to this uncertainty, in Summer 2021 the government consulted on when to end the sale of new non-zero emission HGVs. This was conducted following publication of the Department for Transport's [decarbonisation plan](#). The possible dates included were 2035 and 2040.

Local Context and Issues

Many of the issues in this section have been high level. However, owing to the complex nature of the UK freight system, there are also very local challenges that affect residents across Oxfordshire. Some specific challenges for Oxfordshire in relation to freight are:

- Resilience and congestion issues on the A34 which is an important road for movement between the Midlands and southern ports.
- Inappropriate vehicles and levels of freight movement through towns.
- Road safety issues, particularly with people cycling.
- Contribution to local air quality issues.
- Last mile delivery, particularly in Oxford.
- Construction and logistics movements associated with the large number of housing development sites.
- The strong rural economy in Oxfordshire which is often away from the 'A' road network.
- Capacity of rail network through Oxfordshire for freight movement.

²⁴ Shell: Decarbonising Road Freight: Getting into Gear

Key principles

We have analysed the trends and issues identified in the previous section in order to develop our strategy. Based on our analysis, we have identified a set of key principles which our strategy will be structured around. The following chapters include the proposed actions required to support delivery of our key principles. Our key principles are:

- Appropriate movement
- Efficient movement
- Zero-tailpipe emission, zero-carbon movement
- Reducing local air pollutants
- Safe movement
- Monitoring movement
- Partnership working

The proposals identified for each key principle are evidence based and have been developed with input from a range of stakeholders, including the freight industry. We will continue to work in partnership with stakeholders to deliver these proposals and improve the movement of goods in Oxfordshire.

Barriers

Before outlining the actions required to support delivery of our key principles, it is important to reflect on some of the key barriers. These provide context for why certain actions have been identified and the broader context that we are working in.

These barriers have highlighted that whilst the movement of goods is related to a range of issues such as congestion, road safety and air quality, there are a set of complex considerations required. Solutions will therefore be required that balance these considerations and create an efficient, sustainable transport network for all.

Complexity of the freight system

The freight system is extremely complex and much of it is beyond the county council's control. We can influence some areas of freight and logistics, but many issues will require regional, national or international developments to truly address.

Need for goods

The movement of goods is critical to the national economy, local economy and residents' everyday lives. Therefore, we need to facilitate the efficient movement of goods and carefully consider the impacts of any restrictions.

Amount of goods transported

There is a significant amount of goods that need to be moved each day. Figures for the amount of goods moved are not readily available. The best estimate we have is that approximately 400,000 tonnes (t) of goods per day are needed to resupply London²⁵. The majority of this is moved by road freight.

²⁵ Transport for London, 2014

When scaled according to population, this equates to approximately 31,000t of goods per day to resupply Oxfordshire. This would require between 1,700 and 4,000 HGV trips. Whilst we recognise this is not an accurate figure, it provides an indication of the scale of the challenge.

Modal shift

The different modes for transporting freight are part of wider system. Rail freight and emerging modes such as e-cargo bikes can help to complement road freight but cannot replace it entirely. Further detail about this is provided later in the strategy.

The volume of goods that need to be transported each day highlights why we need a combination of modes and cannot rely solely on one mode. Encouraging modal shift also takes a significant amount of time, especially to have a fundamental impact on the volumes of freight currently moved.

Market forces

Freight and logistics are ultimately part of the private sector. This means that companies already operate in the most cost effective way. Solutions, such as freight consolidation centres, are not viewed as cost effective and therefore will not be developed by market forces.

This affects our ability to deliver some solutions and highlights the need to carefully consider supporting policy and potential impacts on local businesses and residents.

Impacts on businesses and consumers

As highlighted in the previous barrier, freight and logistics is a commercial sector. On average the industry operates on very small profit margins of around 2%²⁶. Actions therefore need to consider potential impacts on local businesses which support the economy and residents' jobs.

Similarly, any increases to operators' costs have a knock on affect for consumers in Oxfordshire in the form of higher delivery costs.

²⁶ Statista 2021

Appropriate Movement

Within Oxfordshire there are issues with HGVs passing through our towns and villages on inappropriate roads. This has negative impacts on resident's health and wellbeing due to noise, air pollution and vibration. It also causes disruption to resident's everyday lives.

Inappropriate movement impacts on our historic environment. The roads in historic county towns were not designed to accommodate HGVs and so there is limited space for the vehicles to manoeuvre. This poses a road safety risk to people walking and cycling.

It also has negative impacts on freight operators. Any small increase in delay could drive a large increase in freight costs. Maintaining efficiency is important to both keep costs down and meet customer expectations. Ensuring vehicles are using the most appropriate roads is therefore of benefit to freight operators.

Ongoing changes to technology and the freight industry may make these issues worse. The shift to larger HGVs will increase the likelihood of inappropriate vehicles passing through Oxfordshire's towns. The increased use of smart phones as navigation devices has likely also contributed to vehicles using inappropriate routes.

Beyond this, changes to technology may allow for the platooning of semi-autonomous freight vehicles. This could compound the issue if not managed effectively. However, full automation also offers the potential to ensure vehicles only use appropriate routes.

Increasingly there are also issues with inappropriate last-mile freight delivery. As highlighted previously, the rise of internet shopping has led to the growth of LGVs. This is causing increasingly inappropriate levels of LGV traffic on local roads. We have also seen issues with inappropriate parking of both LGVs and motorcycle food delivery services.

Reducing the need to travel

We believe the first way of encouraging appropriate movement is to challenge whether the journey is needed at all. Reducing the need to travel is included in the main LTCP document and recognises that it can play an important role in tackling vehicle use and the associated negative impacts such as congestion and emissions.

Reducing the need to travel will be delivered in two primary ways. The first is through improved digital connectivity. Digital connectivity can reduce the need to travel by providing residents with the ability to work, shop and access services from home. This is primarily related to private vehicle usage rather than the movement of goods.

The second way we can reduce the need to travel is through planning such as the location of services within walking distance of residents. This is relevant to the movement of goods and may help to improve last-mile delivery by tackling inappropriate levels of LGV traffic on local roads.

In the LTCP we have included policies which address reducing the need to travel. This is primarily through promotion of the 20-minute neighbourhood concept and our guidance for new developments.

We will work with our District and City Councils to ensure that regeneration schemes and new developments support application of these policies and incorporate considerations about reducing the need for freight movement. For example, the development of freight lockers or hubs near to developments to minimise the need for delivery vehicles to travel on local roads.

Action 1 – Promote considerations about reducing the need for freight movement

We will work with our District and City Councils to support application of the 20-minute neighbourhood and guidance for new developments LTCP policies and incorporate considerations about reducing the need for freight movement.

HGV route map

However, it is important to recognise that there will always be a significant number of freight trips required to service Oxfordshire. These trips are essential to support the local economy and residents' everyday lives. There are also fewer ways in which we can reduce the need for HGV trips.

Therefore, when trips are required it is important these are on the most appropriate routes. This is particularly important for HGVs which sometimes pass through our towns and villages on inappropriate roads.

In order to address this issue, we believe it is important to have a clear map to show appropriate HGV routes in Oxfordshire. This has been developed following a review of the LTP4 lorry route map and will help to inform stakeholders of appropriate routes.

Action 2 – Develop appropriate HGV route map

Following review of the LTP4 lorry route map, we have developed an appropriate HGV route map. This map is shown below and identifies suitable HGV routes across the county. We have also created a digital version of this map which can be shared with stakeholders and will be used by a range of council teams.

Action 3 – Create a map of existing weight restrictions

To complement the HGV route map, we will create a digitised and up to date map of all existing weight restrictions in the county. This is part of a broader project to review, map and make available a range of transport information.



Figure 7 - HGV route map

The HGV route map is supported by our road classification table. This establishes the characteristics of each road class, whether restrictions are appropriate and the Oxfordshire routes in each class.

It also identifies which roads are a part of the nationally identified Strategic Road Network (SRN) managed by National Highways and Major Road Network (MRN) a middle tier of the country's busiest and most economically important local authority 'A' roads. The road classifications table is shown below.

Class	Definition	Characteristic	Oxfordshire Routes
Class 1: Motorway	<ul style="list-style-type: none"> A road suitable for high speed long distance national traffic Responsibility of Highways England (HE) 	<ul style="list-style-type: none"> Dual carriageway with limited access and type-restricted use No weight restrictions 	M40 (SRN)
Class 2a: Strategic Primary Routes	<ul style="list-style-type: none"> Strategic road suitable for longer-distance and inter-regional traffic Main connections between defined primary destinations. Responsibility of either HE or the County Council 	<ul style="list-style-type: none"> Able to cater for high volumes of traffic Predominantly dual carriageway No restrictions on access or permanent weight restrictions Presumption against at-grade pedestrian crossings Presumption against speeds below 50 mph 	<ul style="list-style-type: none"> A34 , A43 (SRN and HE) A40 (M40 J8 to Witney) (MRN) A41 (A34 to Bicester) A44 (A40 to A4095) A423, A4142 (Oxford S / E bypass)
Class 2b: Other Primary Routes	<ul style="list-style-type: none"> A road suitable for longer distance and inter-regional traffic Main connections between defined primary destinations Responsibility of the County Council 	<ul style="list-style-type: none"> Able to cater for high volumes of traffic Either dual carriageway or single carriageway No restrictions on access or permanent weight restrictions, may be some height restrictions 	<ul style="list-style-type: none"> A40 (west of Witney) (MRN) A41 (Bicester to Aylesbury) (MRN) A44 (north of A4095) A420 (west of A34) (MRN) A422 (east of A423) (MRN) A423 (north of A422)
Class 3a: County Principal (A) Classified Roads (major)	<ul style="list-style-type: none"> A road suitable for important cross- and inter-county traffic but not longer-distance travel Should be able to cater for all types of vehicles Responsibility of the County Council 	<ul style="list-style-type: none"> Usually good standard single carriageway Weight restrictions may be considered where there is a suitable alternative route of the same or better standard available 	<ul style="list-style-type: none"> A338 (Wantage to A415) A415 A417 A418 (MRN) A421 (MRN) A4074 A4130 A4260 (north of A40)
Class 3b: County Principal (A) Classified Roads (minor)	<ul style="list-style-type: none"> Road suitable for important cross- and inter-county traffic where there are relatively lower volumes of mostly local traffic Minor A-roads would serve to link larger settlements with major A-roads and provide missing links Responsibility of the County Council 	<ul style="list-style-type: none"> Predominantly single carriageway; some sections might be of a lower standard Weight restrictions can be considered where there is a suitable alternative route available 	<ul style="list-style-type: none"> A40 (east of A418) A329 A338 A361 A420 (through Oxford) A422 (west of Banbury) A424 A436 A3400 A4095 A4129 A4144 A4155 A4158 A4165 A4183 A4185 A4260 (south of A40) A4421
Class 4: Non- principal roads (B/C Classified)	<ul style="list-style-type: none"> A road suitable for other shorter cross and inter-county movements where volumes are relatively low and no principal road is available Responsibility of the County Council 	<ul style="list-style-type: none"> Weight restrictions can be considered providing diversions are not excessive and do not prevent access to properties 	All B, C and unclassified roads

Figure 8 – Oxfordshire road classification table

Moving forward, we propose to conduct a review of the road classification table. This will identify whether any road classifications should be changed. It should be noted that this is a complex process which also includes considerations beyond freight. For

example, road classifications also affect maintenance, signage and neighbouring local authorities.

Where any changes are made, this could have an effect on our HGV map and which roads are suitable for restrictions. Following review of the road classifications we will update the HGV map accordingly.

Action 4 – Conduct review of road classifications

We will conduct a review of the Oxfordshire road classification table. As part of the review, we will engage with a range of stakeholders and consider a range of factors. Following review, we will reflect any changes on our HGV route map.

As discussed previously, we published a lorry route map in the 2016 LTP4 freight strategy to show appropriate routes. However, we have learnt that few drivers and freight operators use individual local authority maps so the impact on route choice is limited. Therefore, as part of this strategy we have thought about what actions can support our aspirations.

Action 5 - Promotion of HGV route map

We will promote use of the Oxfordshire HGV route map by:

- Seeking to work with HGV GPS system developers, sat nav providers and digital navigation providers such as Google Maps to incorporate our appropriate route information.
- Exploring opportunities to use online portals similar to ‘freight gateway’.
- Engaging with operators, businesses and trade associations.
- Engaging with other local authorities and regional partners.

Encouraging use of HGV routes

We recognise that promotion alone will not be sufficient, and some action may be required to encourage use of appropriate HGV routes. There are a range of ways in which this can be achieved including signage and engagement with local operators.

In exceptional circumstances it may be necessary to restrict HGV traffic. This is primarily done by establishing environmental weight or width restrictions to discourage HGVs from entering an area.

It is important that any action taken to address inappropriate HGV movements is supported by evidence and tailored to the local area. Surveys are therefore required, and engagement is needed with a range of stakeholders.

In order to guide this process, we have produced guidance so that communities affected by inappropriate HGV movements know how to request intervention. It should be noted that the county council has no funding available for the delivery of any measures and so external funding would need to be identified for all stages of the process and implementation.

Action 6 – Establish a clear process for how any action to address inappropriate HGV movement is decided and funded

HGVs are permitted to use all types of road. However, there may be situations where action is required to address an issue. To guide the process for where action is required and the type of action taken, we have produced the below guidance.

Decision making process

1. Formal applications for action to address HGV movement can be made by parish or town councils with support of the relevant local County Councillor.
2. County Council officers will review the application against initial criteria:
 - a. Action will not be considered on appropriate routes identified in our HGV route map or where there is not a clear alternative route that is suitable for HGVs.
3. Surveys will need to be conducted in the area to establish the extent and nature of the problem.
 - a. The County Council do not have funding or resource for survey work. Surveys will need to be paid for and conducted by external partners.
 - b. Where surveys are being progressed, the scope should first be agreed with the county council, including the types of survey conducted.
4. Solutions will then be investigated by County Council officers in conjunction with local communities and stakeholders before any action is taken.
 - a. Weight restrictions will only be considered for vehicles over 18t.
5. Final solutions will be subject to agreement by the County Council's cabinet and or relevant cabinet members.

Funding

- The county council do not currently have any funding available for work to address inappropriate HGV movement.
- External funding would therefore be required and would need to be identified by the applicant for all stages, including implementation of any action.

Summary



In order to support communities and stakeholders we will produce more detailed guidance in support of the process above. For example, this will include more detail about the types of survey required and rationale for these, supported by evidence from past work. We will update the guidance once it is published to reflect any changes and incorporate new learnings.

Action 7 – Develop more detailed guidance for inappropriate HGV movement action request process

In support of the inappropriate HGV movement action request process, we will develop more detailed guidance to support communities and stakeholders.

As outlined in our action request process, 18t environmental weight restrictions will only be considered in exceptional circumstances. This is because restrictions require significant resource and funding, are challenging to enforce and can have negative impacts on the efficient movement of goods and local businesses. There are a range of actions that we will explore with stakeholders before weight restrictions.

We will only consider 18t environmental weight restrictions owing to challenges around enforcing 7.5t weight restrictions, see action 40 for further information. Evidence from analysis of existing weight restrictions also indicates that 18t vehicles have the most environmental impact.

However, there may be circumstances where environmental weight restrictions are being investigated. During this process there are variations to the traditional one road approach that will be considered.

There are also weight restrictions where multiple roads are covered to create an area based or ‘zonal’ restriction. This seeks to prevent any through movement of HGVs in an area and encourage use of appropriate routes.

This type of restriction is particularly effective where there are multiple potential through routes that HGVs are known to take. This approach is flexible in terms of size and could cover one town or a collection of settlements.

Buckinghamshire Council consulted on a proposed freight zone in the Ivinghoe area in May 2021²⁷. Similarly, OCC established the Burford experimental traffic regulation order (ETRO) in August 2020. We are continuing to monitor the effects of the Burford ETRO and will use this data to inform potential future schemes.

Case Study - Burford ETRO

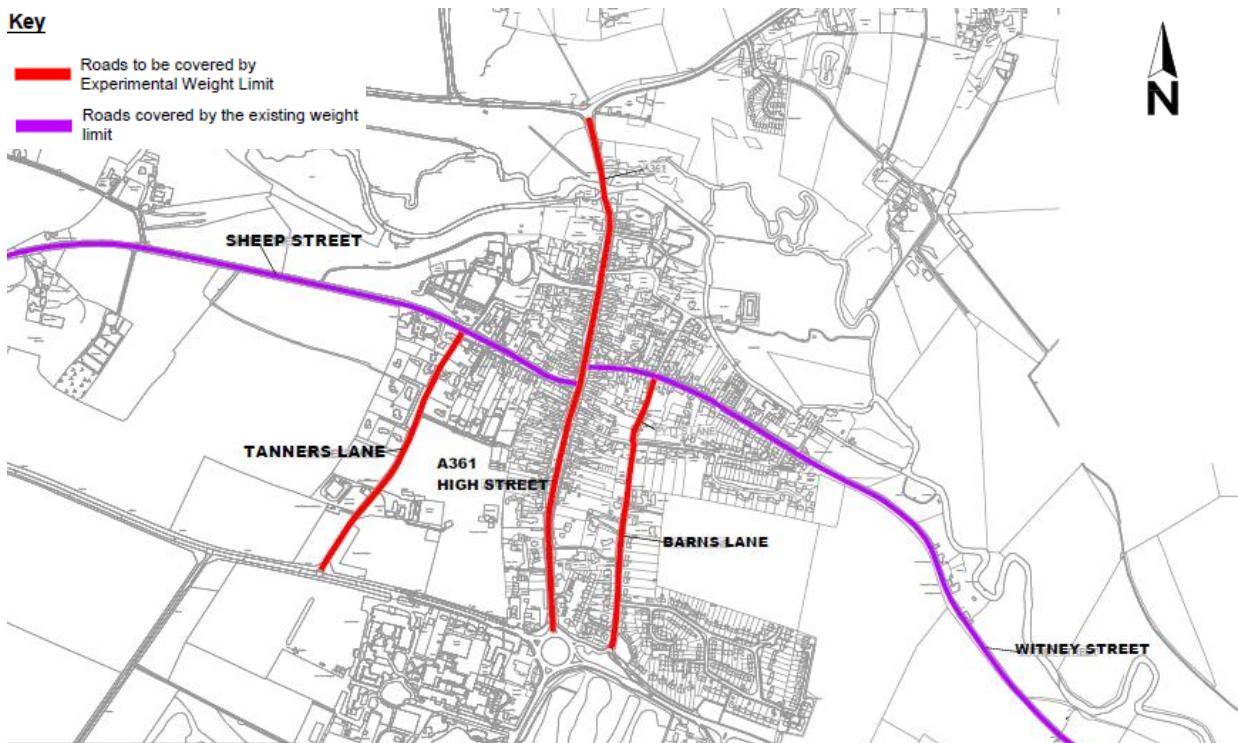
The Burford ETRO was established in August 2020 to prevent goods vehicles that exceed 7.5t passing through Burford. The restrictions prevent goods vehicles from using the A361 (The Hill & High Street), Barns Lane and Tanners Lane.

Permit applications for exemptions are available for HGV owners/operators that are locally based. This is managed by Burford Town Council.

²⁷ <https://www.buckscc.gov.uk/services/transport-and-roads/transport-plans-and-policies/freight-strategy/ivinghoe-area-freight-engagement/>

When comparing the traffic monitoring data from 2019 before the Burford ETRO was implemented and in 2021 after implementation, on average there is the same number of HGVs (of all classes) passing through A361 Burford.

However, Burford has seen a significant 56% decrease, in HGVs over 18t between 2019 and 2021, likely due to implementation of the ETRO. A further monitoring period is planned for September / October 2021 in order to report the findings by the end of the eighteen month ETRO period, in February 2022.



Action 8 – Consider the establishment of area based weight restrictions

Where 18t environmental weight restrictions are deemed necessary and there is funding available, we will also consider the establishment of area based weight restrictions. This will cover multiple roads in an area and will help to prevent through movement of HGVs. We will continue to monitor the Burford ETRO and will use this data to inform any potential scheme.

Enforcement

Where existing action has been taken to address inappropriate HGV movement, the county council conduct enforcement. Primarily, this has been through the enforcement of existing weight restrictions.

Whilst resources have reduced in recent years, we have become more efficient allowing for an increase in activity since 2007 when enforcement began. However, we recognise that owing to the time involved for enforcement and the sheer quantity of HGV traffic on the road, breaches of weight restrictions are difficult to reduce.

We are therefore keen to explore new opportunities to improve enforcement and increase the use of our identified HGV routes. A key factor in enabling this would be if the Department for Transport (DfT) granted local authorities enforcement powers under Part 6 of the Traffic Management Act 2004.

Traffic Management Act 2004 - Part 6

Under Part 6 of the Traffic Management Act (TMA) local authorities can apply for powers to take on further enforcement themselves, rather than relying on the police. Whilst councils can enforce parking and bus lane contraventions, the provisions relating to moving traffic offences have not been activated.

If secondary legislation is passed, local authorities would be granted powers to enforce and issue penalty charges for offences such as disregarding one-way systems, failing to give priority to ongoing traffic, or disregarding box junctions.

Part 6 of the TMA enabled the introduction of the London Lorry Control Scheme (LLCS). The LLCS controls the movement of heavy goods vehicles over 18t at night and at weekends on specific roads in London. This helps to manage the environmental impact of HGV vehicles and minimise noise pollution. Enforcement is carried out in residential areas during unsociable hours through restricted use of these roads.

Action 9 – Lobby for enforcement of moving traffic offences under Traffic Management Act Part 6

We will continue to lobby for the government to pass secondary legislation allowing local authorities to enforce moving traffic offences under the Traffic Management Act Part 6.

Ahead of the Traffic Management Act Part 6 there are other options to improve enforcement of weight restrictions that we will explore. The primary option that we are seeking to explore further is the implementation of road user charging schemes.

Road user charging involves charging drivers for the use of the roads they drive on. Traditionally this has involved charging vehicles based on the emissions they produce. Examples of this include the London Ultra-low Emission Zone (ULEZ) and Oxford city Zero-Emission Zone (ZEZ).

Using the same principles and technology, it is possible to charge vehicles based on their weight category for use of a road. Where restrictions are in place, but issues persist, this type of charging could be implemented to act as a deterrent and help us to encourage use of the identified appropriate routes.

Action 10 – Explore implementation of road user charging schemes to reduce commercial vehicle flows, emissions, and encourage use of the appropriate routes

We will explore the implementation of road user charging schemes to reduce the impact of commercial vehicles, including supporting weight restrictions and appropriate routeing.

There are also changes to technology that may help us to improve our enforcement. Technology continues to develop rapidly and there have been a number of innovations in the transport industry in recent years. It is therefore important that we consider these changes and how to harness them.

For example, there has been the development of cameras and sensors that can be used to identify different vehicles. These could be deployed at multiple locations, tracking HGVs in and out of weight restriction entrances and exits. This would allow for cross matching and identification of those that stopped in the area.

Action 11 – Explore technology to aid enforcement

We will monitor and explore technology that could help us to improve the enforcement of weight restrictions.

Finally, we will seek to improve our enforcement by reviewing best practice nationally and internationally on freight transport management. This includes engaging with other local authorities to understand work they are doing and the effectiveness of it and our sub-national transport body England's Economic Heartland (EEH).

Action 12 – Review best practice

We will seek to improve our enforcement by reviewing best practice nationally and internationally on freight transport management.

Influencing new development

Another key way in which we will encourage appropriate movement is by seeking to influence new development. Current forecasts are for over 85,000 new jobs and 100,000 new homes in the county between 2011 and 2031. It will be important to ensure that these developments are located and designed to facilitate appropriate freight access.

The district councils are responsible for planning functions in Oxfordshire. However, there are opportunities for us to seek to influence development. For example, we will ensure that we consider freight management measures when responding to consultations on planning policy and relevant planning applications.

This also includes seeking to ensure new developments incorporate the needs of emerging technologies like drones that may be used for last mile delivery in the future. We plan to do this through our Innovation Framework.

The framework, which is a supporting document of this LTCP, sets out a series of principles which should be applied to the integration of innovation into new development and infrastructure, so that innovation is used to further policies and strategies such as those within this document.

Action 13 – Seek to influence the location and design of new development

We will seek to influence the location and design of new development, particularly employment sites and any related transport infrastructure, so that these can function well, with appropriate freight access to and from the strategic transport network without adverse impacts on local communities, other road users and the environment. This includes ensuring new developments incorporate the needs of emerging technologies.

We will also ask developers of major sites to prepare Construction Logistics Plans (CLPs). CLPs provide the framework for understanding and managing construction vehicle activity into and out of a proposed development²⁸.

CLPs provide us with an overview of the expected logistics activity during the construction programme. This will help to reduce the impact construction traffic has on local communities in relation to congestion, pollution and noise²⁹.

Case study – Croydon Growth Zone

The London Borough of Croydon put in place Construction Logistics Planning guidance for the Croydon Growth Zone project. Any failure to follow the guidance meant the project being rejected³⁰.

Some key aspects of the guidance included:

- Site traffic was not allowed between 7:30 – 9:30am and 4:00 – 6:30pm except concrete deliveries.
- Developers had to commit to using specific signed routes for designated Growth Zone traffic.
- Developers had to commit to using the Growth Zone Navigation App which directs vehicles via approved access routes.

A full CLP assessment should include detail such as the amount of construction traffic generated, the routes the construction vehicles will use and any traffic management that will be in place. They therefore help us to encourage use of appropriate routes, whilst also contributing to several of our other objectives.

There are a number of innovations in this area, for example the Croydon Growth Zone navigation app, that we will continue to monitor and explore as appropriate.

Action 14 – Ask developers of major sites to prepare Construction Logistics Plans

We will ask developers of major sites to prepare Construction Logistics Plans to minimise the impact of the large scale residential and business development planned for Oxfordshire.

²⁸ <https://www.arup.com/projects/construction-logistic-plan>

²⁹ <https://ccsbestpractice.org.uk/entries/construction-logistics-plan/>

³⁰ https://www.clocos.org.uk/casestudies/clocos_case_study_lb_croydon_aug_2020.pdf

Efficient movement

As highlighted previously, the UK freight system supports £400 billion in manufacturing sales. It is therefore important that goods can move efficiently through Oxfordshire to support the economy. Efficient movement will also support local businesses, help attract new businesses and facilitate economic growth.

Changes to customer expectations have further enhanced the need for the efficient movement of goods. The rise of online shopping and next day delivery have made it more challenging for operators to meet demand and customer expectation. The impact of delays and congestion therefore have a greater impact than before.

Similarly, in order to meet expectation some operators may increase the number of vehicles. This further increases the total number of vehicles on the county's roads and contributes to both pollution and congestion.

With forecasts for over 85,000 new jobs and 100,000 new homes in the county between 2011 and 2031 there will be greater demand on the transport network. We will therefore need to take steps to manage the road network to ensure it operates efficiently for all users.

However, efficient goods movement must support the LTCP vision and help to create healthy, attractive environments for people. In line with the LTCP transport user hierarchy, we will focus on prioritising walking, cycling, public and shared transport before other modes.

Prioritising these modes will actually help to deliver a more efficient transport network for all users, including the freight industry. Prioritising these modes and making them more attractive will help to reduce private vehicle usage, tackling congestion and freeing up road space for the efficient movement of goods.

Alternative modes

One of the main ways in which we can increase the efficiency of goods movement is by encouraging the use of alternative modes. Primarily, freight can also be moved by rail. This is safer, helps to reduce emissions and reduces impacts on our roads.

Whilst we believe there are opportunities for rail freight to help improve the efficiency of goods movement, it is part of a wider system and cannot replace road freight entirely. The pros and cons of the main modes are outlined below to help demonstrate why we cannot replace road freight.

As outlined in the key barriers, significant levels of modal shift will take a number of years. Therefore, we recognise that this will be a gradual progress and we will need to continue to address road freight in the short to medium term.

It should also be noted that the county council only have a limited ability to influence the freight industry. A large amount of partnership working will therefore be required. More details about this can be found in the partnership working section.

Mode	Pros	Cons
Rail	<ul style="list-style-type: none"> • Reduced emissions • Environmental benefits • Reduced road congestion • Improved safety • Better journey time reliability 	<ul style="list-style-type: none"> • Lack of capacity on network • Less flexible than road • Not suitable for first/last mile • Not economically viable for short distances
Water	<ul style="list-style-type: none"> • Good for heavy cargo • Lower cost than road and rail • Reduced road congestion • Reduced emissions • Journey time reliability 	<ul style="list-style-type: none"> • Slow speed • Less flexible than road • Not suited to first/last mile • Lack of facilities and knowledge
Road	<ul style="list-style-type: none"> • Cost effective • Can be used for all distances • Full door to door movement • Easier to track cargo • Freight can be moved quickly 	<ul style="list-style-type: none"> • Limitations on cargo size and weight • Slower than rail over long distances • Negative environmental and air quality impacts • Contribute to congestion and road safety issues

Water Freight

In total, approximately 95% of UK imports and exports are transported by water³¹. The majority is international traffic, however 13% of domestic freight is currently moved by water³². Of relevance to Oxfordshire is the 7% of water freight (1% of total freight movement) that is moved on inland waterways³³.

Inland waterway traffic is carried by barge or sea going vessels on the inland waterways network (rivers and canals). The River Thames, which passes through Oxfordshire, is the most used inland waterway for freight movement in the UK. The majority of this movement is to or from terminals within London³⁴.

Waterways are not congested providing benefits for the efficiency of freight movement. Barges are also capable of carrying up to 1000 tonnes compared to approximately 20 tonnes for HGVs³⁵. They can therefore help to move goods more efficiently and reduce the number of HGVs.

There are currently a number of challenges around the use of inland waterways for freight movement in Oxfordshire. These include a lack of knowledge, a lack of suitable facilities and potential environmental challenges.

However, we do not view water freight in isolation and instead recognise that it could play a role in the future freight system. We will therefore continue to monitor potential opportunities in this area.

³¹ Freight transport association: Growing the UK inland water freight sector: lessons from the Thames

³² Department for transport: Domestic freight transport, by mode: 1953 to 2019

³³ Department for transport: Waterborne transport within the United Kingdom: goods lifted and goods moved by traffic type from 2001

³⁴ Transport for London: Freight and Servicing Action Plan

³⁵ Freight transport association: Growing the UK inland water freight sector: lessons from the Thames

Action 15 – Monitor the use of water freight

We will continue to monitor potential opportunities for increasing the use of water freight in the county.

Rail freight

As noted previously, the main mode which could contribute to improving the efficiency of freight movement is rail. Rail currently accounts for approximately 9% of UK Freight movements³⁶.

There has been a 25% decline in the amount of freight moved by rail since a peak in 2014/15. However, as shown on the graph below, this can largely be attributed to the Department for Business, Energy and Industrial Strategy's policy to phase out coal-based energy in 2015.

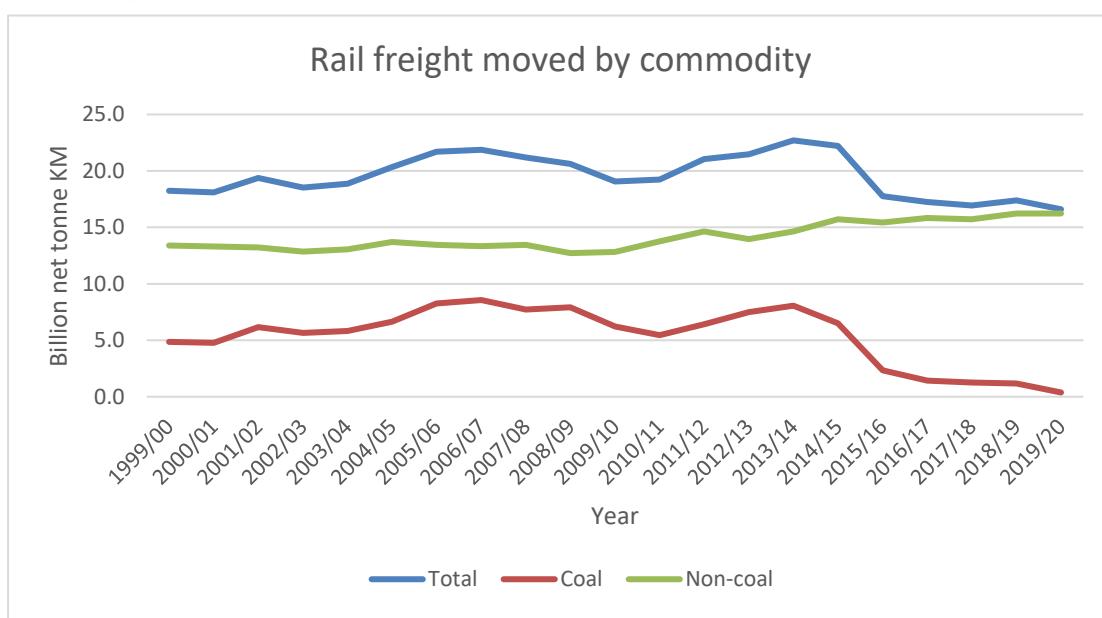


Figure 9 - Rail freight moved by commodity³⁷

The amount of non-coal commodities moved by rail freight has been steadily increasing since 2013/14. There has been an 11% increase in non-coal commodities carried by rail freight in this time period³⁸. This demonstrates the potential for increased rail freight movement for all commodities.

The Oxfordshire Rail Corridor Study (ORCS) forecast rail freight growth across Oxfordshire and identified the need for a 50 % increase in capacity by 2033³⁹. This highlights that rail freight is forecast to increase in the county and work will be required to support this.

In 2018/19, 7 million road haulage journeys were avoided as a result of rail freight movements⁴⁰. This is equivalent to 1.6 billion road vehicle kilometres. Rail freight

³⁶ UK Rail Factsheet 2019

³⁷ Department for Transport: National Railways freight moved by commodity, annual from 1996/97

³⁸ Department for Transport: National Railways freight moved by commodity, annual from 1996/97

³⁹ Network Rail: Oxfordshire Rail Corridor Study

⁴⁰ Department for transport: Number of freight train movements, impacts on road haulage and Freight Performance Measure: annual from 2005/06

therefore helps to reduce road congestion and create a more efficient transport network for all users.

Rail freight currently produces 76% less carbon dioxide per tonne of cargo relative to road haulage⁴¹. It can contribute to broader environmental benefits and with the electrification of the rail network will contribute to achieving zero-carbon transport emissions by 2040.

For these reasons we support the mode shift of freight from road to rail. This will capitalise on the rail network in Oxfordshire. It will also help to reduce the number of HGVs, free up road space, tackle congestion and emissions and create a more efficient road network for all users.

Action 16 – Promote rail freight

We will encourage the mode shift of freight from road to rail. We will work with stakeholders to encourage this shift and understand what measures are required to further encourage the use of rail freight.

As with water freight, rail freight cannot be viewed in isolation and is instead part of a wider system. Some road movement is still required to move goods on the first and last miles of their journey.

We know that in order to encourage rail freight, more strategic rail freight interchanges (SRFI) are required. A SRFI is a large rail served distribution and warehouse park linked into both rail and the strategic highway network. These facilities are key to enabling the first/last mile road movement and encouraging use of the rail network.

In order to encourage the mode shift of freight to rail we will support the provision of appropriately sited SRFI's, subject to funding being available and having regard to the impacts on local communities and on the road and passenger rail networks.

For example, SRFI's may not be suitable in locations where capacity on the existing road and/or rail networks is not available, capacity of the road or rail cannot be enhanced, or in locations with particular environmental sensitivities and/or other planning constraints.

Action 17 – Support the provision of strategic rail freight interchanges

We will support the provision of appropriately sited strategic rail freight interchanges, subject to funding being available and having regard to the impacts on local communities and/or any other relevant planning considerations, and on the capacity and suitability of impacted road and rail networks.

Whilst we support the mode shift of freight to rail, it is important that this does not affect our passenger rail network. The lack of spare capacity on Oxfordshire's rail network is currently a key constraint that will need to be addressed to enable more rail freight.

⁴¹ Network Rail (2017) Freight Network Study

Upgrades to the rail network are beyond OCC's control. We will therefore need to lobby and work with the DfT and Network Rail to upgrade Oxfordshire's rail network and free up capacity for freight. In particular, we will take account of the recommendations in the [Oxfordshire Rail Corridor Study](#).

Action 18 – Work with stakeholders to increase rail network capacity

We will work with Network Rail and the Department for Transport to seek improvements which optimise capacity on the existing rail network for freight and passenger services.

Network management

OCC as the Highway and Streetworks authority are responsible for a range of management functions. This includes working to manage congestion through network management.

The core purpose of network management is to tackle congestion and ensure the safe, free-flowing movement of traffic, people and freight across the Oxfordshire road network. It also has the potential to influence travel choices and prioritise public transport, walking and cycling.

The Traffic Management Act (2004) places a duty on the Council to reduce and manage congestion and to collaborate effectively with other traffic authorities to achieve this. OCC is also responsible for ensuring a co-ordinated approach to maintaining public safety through approval of all works on the public highway.

Our key network management objectives are to:

- Promote economic activity in and through the county.
- Enable access to employment, leisure and educational facilities for all.
- Reduce traffic congestion, air and noise pollution.
- Reduce accidents and promote public safety.

Effective network management will be an essential part of delivering efficient goods movement in Oxfordshire. Enhanced network management can reduce the impact of roadworks, accidents and incidents on the network, therefore improving productivity and road safety for all road users.

Action 19 – Enhance network management

We will work to improve our network management to allow efficient goods movement by managing congestion and reducing the impact of roadworks, accidents and incidents on the network. More detail about how we will do this can be found in the LTCP network management policy.

In support of our network management functions, data has become available from a range of different sources and at larger quantities. New data sources include edge devices (devices that provide data between a local network and a wide network, such as routers), big data and the Internet of Things (IoT).

We are seeking to improve our approach to data because it can be leveraged to ensure we're meeting residents' needs, measure progress, understand future needs and improve our awareness of changes.

Better real time data will enhance our network management by allowing near real time adaption to changes on transport networks, helping to minimise disruptions to journeys and improve air quality. This will support the efficient movement of goods.

Action 20 – Improve data gathering and usage

We will work to enhance our network management by implementing a consistent approach to gathering and using data. More detail about this can be found in the LTCP data policy.

There has also been a shift towards providing open data. The provision of open data allows transport data to be more widely available. It can then be used for innovations in the private sector and combined with data from other sectors to improve our understanding of transport user's needs.

Open data is data that is available to everyone to access, share and use⁴². Open data should be easy to use and in a standardised format. Open data is a government priority and is seen as a key enabler for the government's digital transport strategy. Transport Systems Catapult estimate that not sharing, and not making transport data open, could result in £15bn in lost direct and indirect benefits to the UK between 2017 and 2025⁴³.

Sharing our data will help navigation software providers to update their software and will enable freight transport operators to improve the efficiency of their operations.

Action 21 – Improve data sharing

We will implement a consistent approach to data sharing in order to help freight transport operators improve the efficiency of their operations. More detail about this can be found in the LTCP data policy.

Parking facilities

Appropriate parking facilities are an important consideration to ensure safe and efficient movement. Appropriate parking facilities allow journeys to be made without major detours and prevent HGVs from disrupting other road users. As highlighted previously, even small detours can have a large effect on operators' costs and journey times.

Strategically located rest stops can also help to encourage the use of appropriate routes. Facilities could be located on our identified appropriate HGV routes, contributing to delivery of our appropriate movement principle.

Currently parking facilities in the South East are at 84% utilisation⁴⁴. This is only 1% below the 'critical' utilisation level. The Welcome Break Oxford services were

⁴² <https://theodi.org/>

⁴³ The case for government involvement to incentivise data sharing in the UK Intelligent Mobility sector —Transport Systems Catapult 2017

⁴⁴ National Survey of Lorry Parking, 2017

identified as being at 114% utilisation highlighting the pressures on lorry parking in the county.

In order to inform future work on this topic, we will review current rest stops and lorry parking facilities. This will identify what facilities are currently available and where there are gaps in the current network.

Action 22 – Review current rest stops and lorry parking facilities

We will review current rest stops and lorry parking facilities in order to improve our understanding and inform future work.

Following this review, we will promote the development of lorry parking facilities. The county council do not currently have any funding for the delivery of new facilities. As a result, external funding will be required and we will work with a range of stakeholders such as developers, neighbouring local authorities and the freight industry to understand the potential for any such facilities.

The A34 and M40 are part of the strategic road network and so are managed by National Highways. Therefore, working with National Highways will be essential to delivering any facilities on these corridors.

As part of this we will work to ensure that any facilities are located in accordance with our HGV route map. Similarly, it will be important to consider potential future fuel requirements at these facilities such as electric vehicle charging or hydrogen refuelling stations.

Action 23 – Promote the creation of rest stops and lorry park facilities

We will work with a range of stakeholders to promote the creation of rest stops and lorry park facilities. We will seek to ensure that any facilities are located in accordance with our HGV route map and that they consider the need for future refuelling requirements.

Technology

There are also a range of technological developments which may help to improve the efficiency of goods movement. We recognise that technology alone will not solve many of the challenges identified. However, we believe it can play a role in addressing some issues and improving the efficiency of movement.

One notable technological development which can help to improve the efficiency of goods movement is deliveries by robots or Unmanned Aerial Vehicles (UAV). UAVs, sometimes referred to as drones, are remote-controlled aircraft or small aerial devices which do not have an on-board pilot.

Currently, most drones are remote controlled by a human, but in the short to medium term, it is anticipated that automated UAVs will improve and facilitate wider autonomous drone usage. They also currently have a short range, due to battery constraints. Again, this is anticipated to improve over the short term, to allow longer distance flights.

Drones are already being used in various practical applications, such as cargo delivery. In the near future, it's anticipated they could also be used for heavy lift facilitation.

Delivery drones will bring about benefits such as faster delivery of small items, due to the lack of congestion in the skies. This will benefit both residents and freight transport operators.

Cargo delivery by drones is also, potentially, between 20% and 35% more cost effective than traditional methods according to research from PWC, helping to reduce costs and meaning potentially cheaper delivery charges for people. Drones could also reduce the need for freight vehicles, helping to lessen congestion and the associated negative impacts of LGVs.

Action 24 – Support the development and trialling of drone technology

We will continue to promote and support the trialling of delivery drone technology in order to improve the efficiency of goods movement. This will include working with stakeholders, monitoring progress and seeking to trial schemes in the county.

Another technological development that could improve the efficiency of goods movement is the development of connected and autonomous vehicles (CAV).

Connected vehicles can be defined as those equipped to exchange information between vehicle and the surrounding environment, either through local wireless networks or the internet⁴⁵. Autonomous vehicles operate in a mode which is not being controlled by an individual⁴⁶.

The primary application of CAV technology to freight is via truck platooning. Platooning is the linking of two or more trucks in convoy, using connectivity technology and automated driving support systems⁴⁷.

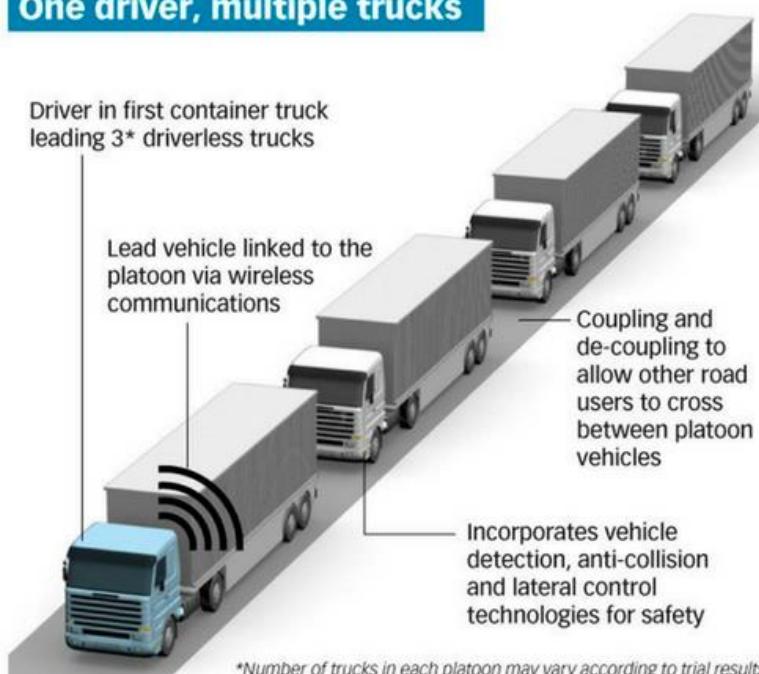
The vehicles automatically maintain a set, close distance between each other when they are connected for certain parts of a journey, for instance on motorways. The truck at the head of the platoon acts as the leader, with the vehicles behind reacting and adapting to changes in its movement. In the first instance lead vehicle will be driven by a human but in time this could become fully autonomous.

⁴⁵ Lengton et al., 2015

⁴⁶ Automated and Electric Vehicles Act 2018

⁴⁷ https://www.acea.auto/uploads/publications/Platooning_roadmap.pdf

One driver, multiple trucks



*Number of trucks in each platoon may vary according to trial results.

Figure 10 – Truck platooning⁴⁸

The benefits of platooning are:

- Reduces air drag, lowering fuel consumption and CO₂ emissions by up to 16% for the trailing vehicles and 8% for the lead vehicle.
- Improves safety – 85% of road traffic collisions are due to human error.
- Improves efficiency by using roads more effectively.

In 2017 the DfT conducted a feasibility study into platooning. The study deemed that a trial on a UK motorway would be feasible. We will therefore continue to monitor progress in this area and opportunities to be involved in a trial. The safety benefits of automation will also support the delivery of our safe freight movement key principle.

Action 25 – Monitor truck platooning progress and opportunities

We will continue to monitor progress made on HGV platooning and any opportunities to be involved in a trial.

In order to facilitate these technological developments, there are future considerations that will be required now. For example, this may include landing areas for UAVs or docking points for robots. Considering the needs of future freight technology during construction and maintenance will help to avoid the need for potentially more costly retrofit at a later stage.

Our Innovation Framework, discussed previously, will guide both the integration of innovations within development and infrastructure, and provide a consistent approach to futureproofing for the mainstreaming of current innovations, such as CAV, UAV and 5G.

⁴⁸ Singapore Ministry of Transport

Action 26 – Consider future technology requirements

We will consider future freight technology requirements via the county's Innovation Framework. More detail about this can be found in the LTCP Innovation Framework policy or the Innovation Framework itself.

Zero-tailpipe emission, zero-carbon movement

Improving air and environmental quality across the county is essential to improving the health of Oxfordshire residents. It will also help to protect our rich and varied natural and historic environment.

In Oxfordshire transport is responsible for a larger proportion of greenhouse gas emissions than the national average, producing approximately 36% of all emissions in the county⁴⁹.

Total CO₂ emissions in the county have declined by 27% since 2008, despite a 7.6% population increase over the same period. However, transport emissions have only declined 1.9% across the same time period.

As part of the LTCP, we have set the target for delivering a zero-carbon transport system by 2040. In order to deliver this target, goods in Oxfordshire will also need to be moved by zero-carbon means.

The decarbonisation of freight is an issue beyond the control of the county council. It will require working at all levels from local through to international, to provide the necessary legislation and technology. However, there are steps that we can take at the local level to help support this shift.

Increasing the use of rail freight will also play a role in helping to decarbonise freight. This was covered in the ‘Efficient movement’ section but will also contribute to delivering zero-carbon movement.

Vehicle refuelling requirements

Road freight will always be part of the freight system. Zero emission vehicles (ZEVs) are therefore required to significantly reduce emissions of carbon, nitrogen oxides and other pollutants, both at the tailpipe and upstream in the energy system.

As outlined previously, there are two kinds of freight vehicles, LGVs and HGVs. Both of these vehicle types will need to be zero emission if we are to deliver a zero-carbon transport system by 2040. However, there is a significant variation in how developed alternative fuels for these vehicles are.

For LGVs there is more certainty about the technology available. Zero emission LGVs are largely Battery Electric Vehicles (BEVs), utilising the same technology as electric cars. As a result, the UK government has required that from 2035, all new cars and vans must be ZEVs.

In the short to medium term, electric vehicle charging infrastructure is the most pressing requirement to support these vehicles. To enable this, OCC along with our partners in the District and City Councils, has adopted the Oxfordshire Electric Vehicle Infrastructure Strategy (OEVIS), which sets out 17 policies and associated key actions for the short term (2020-2025).

⁴⁹ University of Oxford Transport Studies Unit: Pathways to a zero-carbon Oxfordshire

The OEVIS will guide our short term work which will support all BEVs, including the freight industry. We are also planning to develop a longer-term strategy to meet the infrastructure requirements of ZEVs of all propulsion types and classes.

Our District and City councils may also produce their own strategies and delivery plans to support ZEVs. For example, Oxford City Council are currently working an Electric Vehicle Strategy. Supporting the delivery of these strategies will also be critical to supporting the uptake of ZEVs.

Action 27 – Support BEV charging infrastructure requirements

We will work to ensure that the OEVIS supports the freight industry's electric vehicle charging requirements. We will also continue to engage with freight operators as we develop a long-term strategy to understand their electric vehicle charging requirements.

HGVs are also evolving and work is progressing to develop ZEVs. However, HGV technology is further behind and there is less certainty about when alternative fuels will be adopted at scale. The primary alternatives that are being developed are BEVs, Hydrogen Fuel-Cell Vehicles (FCEV) and electrified road systems (catenary).

Battery electric HGVs are predicted to be adopted at scale between 2022 and 2030, exceeding ICE HGVs from approximately 2032. Hydrogen powered HGVs are predicted to be adopted at scale between 2024 and 2040, exceeding ICE HGVs from approximately 2036⁵⁰.

As part of the Transport Decarbonisation Plan, the government is consulting on when to end the sale of all new non-zero emission HGVs. The dates proposed are 2035 for HGVs of 3.5t to 26t and 2040 for HGVs above 26t. We will continue to monitor the outcomes from this consultation.

Whilst electric vehicle technology is generally further ahead, there are issues associated with electric HGVs that could make hydrogen an attractive alternative. These issues include the fact that batteries for electric vehicles are heavy and take up space therefore reducing the HGVs load and making each vehicle less efficient.

Hydrogen technology is further behind and there are also issues associated with it. Hydrogen is considerably less carbon efficient than electrification and so the benefits are lower. As a result, more off-setting in other areas would be required.

We will need to monitor technological developments in the sector. This will include monitoring the outcomes of the zero emission HGV technology trials the government have committed to as part of the Transport Decarbonisation Plan. We will also incorporate findings from the Oxfordshire hydrogen strategy.

⁵⁰ Shell: Decarbonising Road Freight: Getting into Gear

Action 28 – Monitor alternative HGV fuel requirements and options

We will continue to monitor developments in zero emission HGV fuels. As more is known we will update our strategy and consider the necessary requirements. This will include consideration of the zero emission HGV technology trials and findings from the Oxfordshire hydrogen strategy.

When more is known about what fuel will be used to power zero emission HGVs, there will be an opportunity for the county council to be involved in the provision of refuelling infrastructure. This could be by providing refuelling infrastructure on the council owned highway or by identifying land for refuelling stations.

There is an opportunity to develop this infrastructure in accordance with our HGV route map. Strategically locating refuelling infrastructure on this network will help to encourage use of appropriate HGV routes and deliver the associated benefits outlined previously.

Action 29 – Strategically locate refuelling infrastructure

We will seek to strategically locate zero emission HGV refuelling facilities in accordance with our HGV route map. This will support zero emission freight movement whilst encouraging use of appropriate routes.

Electrified road systems are another alternative that could be used to power zero-emission HGVs. Electrified road systems use overhead cables to deliver energy to the vehicle. This reduces the need for energy storage via large, heavy batteries.

This system would rely on the overhead cables being delivered on key freight corridors. It is estimated that this could deliver as much as 80% reduction in the carbon emissions from a long-haul articulated vehicle⁵¹. Demonstrator projects have been delivered in the USA, Germany, Sweden, and the Netherlands.



Figure 11 – Electrified road system trial⁵²

⁵¹ <https://www.mobility.siemens.com/global/en/portfolio/road/ehighway.html>

⁵² Siemens

In order to implement this a significant amount of new infrastructure would be required. The cost of this infrastructure is estimated to be £1 million per km. There are approximately 7,000 miles of suitable trunk roads in the UK setting the infrastructure costs of this approach at £7 billion⁵³.

Whilst there is a significant cost involved, electrified road systems are currently being explored further by Innovate UK-funded projects. We are involved in a project looking into this and will monitor the outcomes of the study.

Electrified road systems will also be included in the zero emission HGV technology trials committed to in the government's Transport Decarbonisation Plan. We will monitor the outcomes of these trials.

Action 30 – Monitor electrified road systems study

We will continue to monitor and engage with research projects reviewing the feasibility of electrified road systems in the UK and across Europe

Cycle freight

One way in which goods can be moved in a zero-carbon, efficient and safe manner is via cycle freight. This is best suited to replacing LGVs for the last mile delivery of goods in urban areas.

Cycle freight refers to the transportation and delivery of goods using bicycles or electric bicycles. It can help to reduce emissions by up to 90% compared to diesel vans and by a third compared to electric vans. It also brings benefits to operators with delivery being up to 60% faster in city centres⁵⁴.

As noted in the key barriers, cycle freight is one part of the broader freight system. We believe it has the potential to move a greater proportion of goods, but it will not have the capacity to completely replace road freight in urban areas.

It will also take a number of years before operations across the county could be scaled up. We will therefore need to support zero-emission LGVs for the majority of last-mile delivery in the short to medium term.

There are existing cycle freight services operating successfully in Oxford. We believe there is potential to expand the use of cycle freight within Oxford, particularly with introduction of the Zero Emission Zone, and in other towns.

Owing to the potential of cycle freight, we have included a high level policy within the LTCP to promote its use. Further details about how the policy will be achieved are included in this section.

⁵³ Government office for science: Decarbonising road freight

⁵⁴ Possible: The promise of low-carbon freight

Case Study – Pedal and Post

Pedal and Post is a sustainable courier and storage firm operating in Oxford. Pedal and Post uses cargo bikes to deliver medical supplies and samples, e-commerce parcels and other items.

Pedal and Post have various partnerships including with Baxter Healthcare and OUCH Trust. As part of this partnership, more than 25,000 products were delivered between August 2020 and February 2021. This service has halved the time it takes for products to travel from Baxter's compounding facility in Cowley to the hospital site⁵⁵. The success of pedal and post demonstrates the benefits of cycle freight in Oxford.

As of August 2021, OCC are working to purchase e-cargo bikes for Pedal and Post using funding from the Energy Savings Trust. Pedal and Post are planning to use some of these bikes to take over veg box deliveries in Oxford, replacing LGVs which currently make the deliveries. We are also involved with capturing and evaluating data from Pedal and Post.



Figure 12 - Cycle freight operated by Pedal and Post in Oxford⁵⁶

Outside of Pedal and Post there is also work progressing to encourage cycle freight in Oxford. As part of the Energy Savings Trust funding we are purchasing a set of lease bikes for Oxford businesses to try at a low cost before they buy.

Oxford City Council are also providing some electric cargo bikes in Cornmarket. We will be involved with reviewing the results from both of these projects to get a rounded picture of usage and further inform our understanding of cycle freight.

Action 31 – Promote cycle freight in Oxford

We will continue to promote and support the expansion of cycle freight in Oxford. This includes working with Pedal and Post and others to evaluate data and leasing e-cargo bikes to Oxford businesses.

⁵⁵ <http://www.pedalandpost.co.uk/pedal-post-pedal-power-drives-improved-medical-service-and-greener-deliveries/>

⁵⁶ <http://www.pedalandpost.co.uk/>

Cycle freight could also be effective in a range of Oxfordshire towns. We are seeking to promote the use of cycle freight across the county because it will help to reduce the number of motorised vehicles. This will improve the health and wellbeing of residents by reducing emissions from HGVs and LGVs. It will also help to reduce congestion and noise pollution.

Cycle freight will deliver benefits to freight operators and local businesses through improved journey time reliability, reduced costs and more flexible pick up/drop off destinations.

Action 32 – Promote cycle freight across Oxfordshire

We will promote cycle freight across Oxfordshire by engaging with a range of stakeholders including our District and City council's, local businesses, freight operators and developers. We will also continue to monitor any funding opportunities.

Reducing local air pollutants

Reducing local air pollutants is a different issue with potentially different solutions from moving to zero-carbon transport. For local air pollution we need to consider exhaust and non-exhaust emissions.

Air pollution is a mix of particles and gases of both natural and human origin. The main components of urban air pollution are particulate matter (PM) and nitrogen oxides (NO_x). Road transport is the largest source of NO_x and fourth largest source of PM⁵⁷. Currently, there is no clear evidence of a safe level of exposure.

Air pollution is the largest environmental health risk in the UK. It causes more harm than passive smoking. Conditions exacerbated by air pollution include asthma, chronic bronchitis, chronic heart disease, and strokes. In Oxfordshire, it was estimated that 3,578 years of healthy life were lost due to air pollution in 2017⁵⁸.

Oxfordshire's air pollution comes from a variety of sources, and the mix of sources varies by location. Across Oxford road transport accounts for approximately 40% of NO_x emissions and 10% of particulate matter emissions. At roadside locations in the county with heavy traffic, road transport accounts for as much as 75% of NO_x and 20% of particulate matter emissions.

Nationally, HGVs and LGVs produce 35% of road transport emissions⁵⁹. Action is required to address this contribution to air pollutants.

Clean Air and Zero Emission Zones

As part of the LTCP we have committed to investigating the use of Clean Air Zones (CAZs) and Zero Emission Zones (ZEZs). CAZs and ZEZs will be important tools to reduce road transport emissions in Oxfordshire.

A CAZ is an area where vehicles with higher tailpipe pollutant emissions are restricted or charged for access. A ZEZ is an area where all vehicles except those with zero tailpipe emissions are restricted or charged for access.

In addition to the core restrictions or charges, CAZs and ZEZs may also include:

- Supporting traffic management, sustainable transport or behavioural change schemes.
- Electric vehicle charging infrastructure.
- Funding to help individuals and businesses to upgrade their vehicles.

CAZs and ZEZs improve air quality and reduce carbon emissions. They may also reduce traffic levels and noise. This makes them effective tools for reducing local air pollutants.

⁵⁷ <https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution>

⁵⁸ Oxfordshire Health and Wellbeing Joint Strategic Needs Assessment 2020

⁵⁹ UK Government: The Road to Zero

In terms of freight, there are various considerations about how CAZs and ZEZs could apply. For example, recognising that there are very few zero-emission HGVs, the standards for these vehicles could be set at Euro IV.

Similarly, there is a need to consider the penalty charges for non-compliance. Owing to the fact that many HGVs are operated by freight companies' non-compliance charges may need to be higher to encourage use of cleaner vehicles.

However, it is also important to consider the economic importance of freight and the needs of local businesses when planning any scheme. Local businesses, especially smaller ones, may have little influence on the vehicles used to deliver supplies.

We will therefore seek to engage with the freight industry and local businesses to inform the development of any CAZs or ZEZs in Oxfordshire and publicise proposals so that businesses have sufficient time to retrofit their fleet.

Action 33 – Engagement around CAZs and ZEZs

We will engage with the freight industry and local businesses when planning any CAZ or ZEZ scheme to inform its development. We will also ensure there is comprehensive communications and publicity about any CAZ or ZEZ proposals.

Consolidation Centres

As part of the LTCP we have also committed to reviewing and exploring the potential for freight consolidation centres. Freight consolidation is an important part of logistics.

Freight consolidation centres are operations that receive multiple small deliveries and convert them into fewer deliveries to the destination. Crucially, this is often done in zero-emission vehicles or by cargo bike. They can therefore help to reduce local air pollutants from freight.

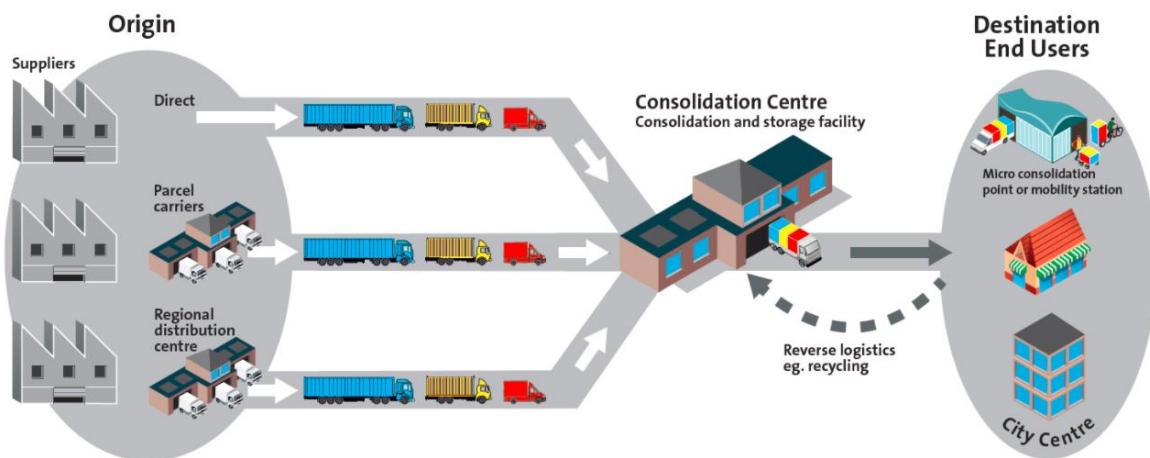


Figure 13 – Summary diagram of freight consolidation⁶⁰

Freight consolidation centres can also provide a range of benefits such as allowing for more efficient vehicle usage and can reduce both the number of vehicles and

⁶⁰ Travel West: Bristol Freight Consolidation Centre Case Study

distance travelled. This will contribute to delivery of our objectives around efficient movement and appropriate movement.

Freight consolidation centres can vary in scale and there are several different operating models. Many consolidation centres are used by a single company to improve the efficiency of their operation. However, other models exist where centres are designed to be used by multiple operators. The most common examples are urban consolidation centres, micro consolidation centres and construction consolidation centres.

It is recognised that there are few examples of self-sustaining urban consolidation centres. However, many of those in operation have shown evidence of benefits. Examples from Monaco and Bristol are summarised below.

Case study – Freight consolidation centres

Monaco

HGVs are restricted from entering Monaco, with vehicles of more than 8.5 tonnes required to use the Monaco Consolidation Centre (MoCC). The MoCC was established in 1989 and is owned by the Principality of Monaco.

The Monaco scheme has resulted in a more efficient urban delivery system for the Principality of Monaco. Despite using diesel delivery vehicles, it was found to have reduced local air pollution by 30%, vehicle noise by 30% and traffic congestion by 38%⁶¹.

Bristol

The Bristol Freight Consolidation Centre was initially set up as a pilot scheme in 2004 with European funding to help alleviate issues associated with freight in Broadmead, Bristol. Following the successful pilot, the operation grew, and the service extended to retailers in other parts of the central Bristol area⁶².

At its peak, a 70% to 80% reduction in the number of onward trips was seen by the freight consolidation scheme. This meant that for every 10 vehicles that made a delivery to the consolidation centre, just 2 or 3 onward journeys to the central Bristol area were made. This led to a reduction of 11,034 kg of CO₂, 358 kg of NO_x and 11 kg of PM.

These examples show that locating freight consolidation centres on the outskirts of urban areas can help to reduce HGV and LGV movements and tackle the local air pollution. Utilising zero-emission vehicles for last mile delivery will further enhance these benefits.

Freight consolidation centres are generally not supported by the freight industry. This is due to increased costs and issues with contamination or loss of products. Therefore, market forces are unlikely to lead the creation of consolidation centres.

⁶¹ SEStran (South East Scotland Transport Partnership): Freight Consolidation Centre Study

⁶² Travel West: Bristol Freight Consolidation Centre Case Study

We will need to consider this in terms of how they could be delivered, the need for supporting policy to encourage use and the potential impacts on cost for local businesses and consumers.

We also need to recognise freight consolidation as a long term solution owing to the time required for the development of facilities and significant modal shift.

Action 34 – Freight consolidation feasibility study

We will work with partners to review and explore the potential for freight consolidation centres, with a priority focus on enabling zero emission last mile delivery.

Action 35 – Safeguard land for freight consolidation

The development of any freight consolidation centres will require suitable land. As part of our work we will identify potential land for these facilities and seek to have it safe guarded in local plans.

Safe movement

As part of the LTCP, we are committed to improving road safety for all road users. This includes freight and logistics vehicles and we will work with freight operators to improve road safety.

Our overarching approach outlined in the LTCP will prioritise people walking and cycling over other modes. This approach will naturally help to reduce conflicts between freight vehicles and those walking and cycling, improving road safety.

However, there may also be specific road safety issues associated with freight vehicles that need to be addressed within local communities or on our appropriate HGV routes.

In 2019, there were 69 goods vehicle occupants who were casualties in road traffic collisions in Oxfordshire⁶³. This was an increase from 2018, however the total number of goods vehicle casualties has decreased since a peak in 2006.

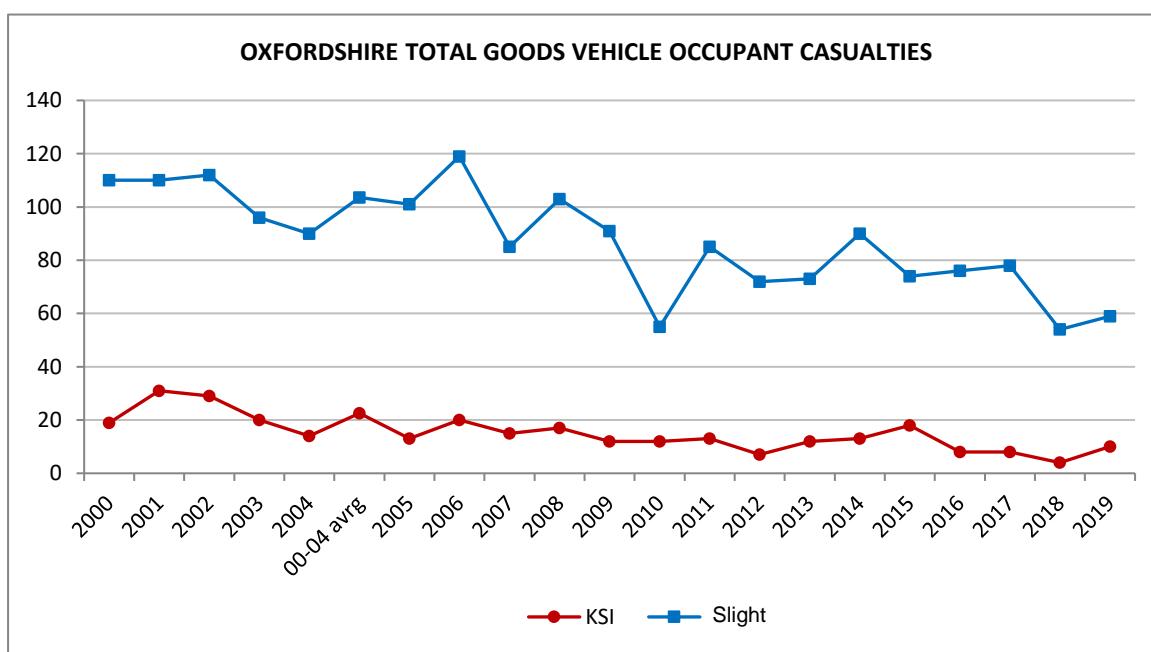


Figure 14 – Oxfordshire total goods vehicle occupant casualties⁶⁴

Reducing conflict with people

As highlighted previously, our overarching approach in the LTCP will help to enable safe freight movement. Our transport user hierarchy sets out that we will prioritise walking and cycling first when developing future transport schemes and policies.

Application of the hierarchy will help to create attractive environments for people to walk, cycle and spend time in. It will be supported by application of the Healthy Streets Approach in Oxfordshire.

⁶³ Oxfordshire County Council Road Traffic Accident Casualty Data Summary 2019

⁶⁴ Oxfordshire County Council Road Traffic Accident Casualty Data Summary 2019

The Healthy Streets Approach is about a gradual shift to a system more focused on people. The Healthy Streets Approach provides a framework for making human health the central aspect of planning⁶⁵.

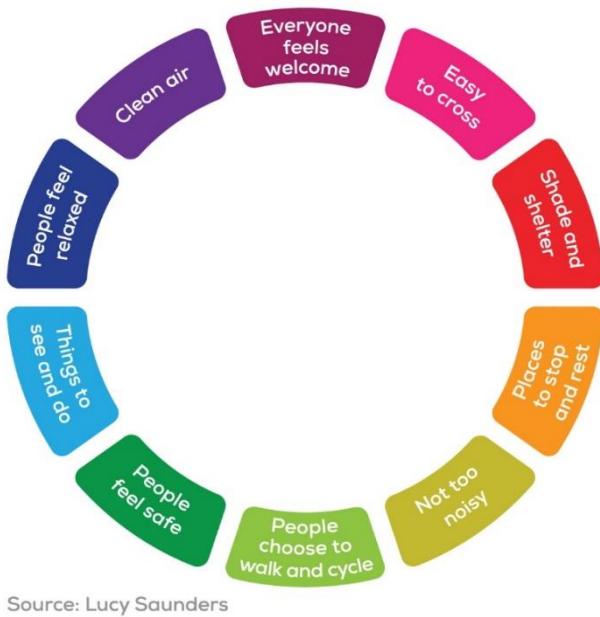


Figure 15 - Healthy streets indicators

In order to achieve this, the Healthy Streets Approach has identified 10 indicators for assessing how streets feel for human beings. There are assessment tools available that enable us to assess streets and scheme proposals against the indicators so that we can understand how appealing they are to walk, cycle and spend time in.

By embedding the Healthy Streets Approach into relevant guidance and decision making processes we can identify improvements to existing streets and seek improvements against all indicators for future proposals.

These approaches, in combination with the other LTCP policies, will reduce danger and create environments that enable goods to be moved as safely as possible.

Action 36 – Reduce conflicts between freight vehicles and people

We will reduce conflicts between freight vehicles and people walking and cycling through application of the transport user hierarchy and Healthy Streets Approach.

Education

Education can play an important role in helping to reduce road danger and enabling safe freight movement throughout Oxfordshire. OCC focus on educating vulnerable road users such as people cycling, children and motorcyclists to raise knowledge and reduce danger for all road users.

⁶⁵ <https://healthystreets.com/>

Oxfordshire Fire and Rescue Service (OFRS) are primarily responsible for road safety education in the county. The Fire and Rescue Services road safety policy supports the delivery of the 365alive vision that aims to save 6,000 more lives and educate 85,000 children and young adults to lead safer and healthier lives.

Over the years there has been significant investment and development of specific road safety programmes. A number of these programmes are placed into a road safety catalogue for use by area-based staff within their locality areas as and when they are needed or when specific requests are made for a specific programme.

The [365alive webpage](#) contains road safety information for motorcyclists, pedestrians, cyclists, mobility scooter users and drivers and passengers. Key education programmes include Biker Down (motorcycle first aid) and children's cycle training (Bikeability). External education programmes are also promoted such as advanced motorcycle training courses. The OFRS also run various road safety campaigns to promote safety and key messages.

Action 37 – Promote road safety education resources and campaigns

We will continue to work with OFRS to promote road safety education resources and campaigns. This will help to raise knowledge, reduce danger for all road users and enable safe freight movement through Oxfordshire.

Speed management

Speed management in local communities will also help to deliver safe goods movement. A 20mph speed limit was introduced in Oxford in all residential areas, the city centre, and suburban shopping centres and although work is still needed to achieve better compliance, the effect on safety has been positive.

We are currently undertaking five 20mph trial sites within Oxfordshire to establish the best methodology for the implementation of a proposed countywide programme. All of the sites are amending existing 30mph limits to 20mph limits via a phased approach of initial sign only changes that are supported by further engineered designs to reduce vehicular speeds if required.

The LTCP outlines that we will promote 20mph as the default limit for roads through residential, villages and retail areas to ensure speeds are appropriate for the nature, environment and location. The expansion of 20mph speed limits will help to ensure freight vehicles are moving at safe speeds and will improve road safety in local communities across Oxfordshire.

Action 38 – Support expansion of 20mph speed limits

We will promote 20mph as the default limit for roads through residential, villages and retail areas to ensure speeds are appropriate for the nature, environment and location. This will contribute to improving road safety and ensuring freight vehicles are moving at safe speeds.

Food delivery riders

There has been a significant growth in the food delivery market over the last 6 years. This growth was further fuelled by the COVID-19 pandemic and subsequent national

lockdowns. Food delivery grew by £3.7 billion in 2020 to reach £11.4 billion, double its 2015 market value⁶⁶.

A factor in this growth has been the rise of online food delivery services such as Deliveroo, Uber Eats and Just Eat. These services work by customers placing an order through an app or website, then self-employed bicycle or motorcycle couriers transport orders from the restaurant to destination.

Whilst these services can help to support local businesses and provide residents with more choice, there are increasing numbers of safety and compliance issues associated with the delivery riders.

These issues include motorcycles using pedestrianised roads, cycling in no-cycle zones, use of pavements and inappropriate or illegal parking. These issues are particularly notable in Oxford City, but we are also seeing issues in other towns.

In order to address these issues and improve the safety of food delivery in the county, we will seek to establish and agree a code of conduct with the food delivery operators.

Action 39 – Establish a code of conduct with food delivery operators

We will engage with food delivery operators and develop a voluntary code of conduct for agreement. This will set out the restrictions and safety requirements which riders will need to adhere to.

⁶⁶ Statista

Monitoring movement

We also want to improve our monitoring to improve the understanding of goods movement in the county. This data can be used to make improvements and inform the development of future solutions. Similarly, evaluating schemes helps to identify lessons learned to guide future work.

As outlined in the LTCP, there are currently a number of issues associated with monitoring and evaluation. These include inconsistent monitoring, monitoring when it is too late to alter a scheme, lack of methodological approach and challenges associated with data collection.

These issues are particularly pronounced when it comes to freight. Owing to the commercial and complex nature of the freight system it is challenging for us to collect data about patterns of movement.

Similarly, as highlighted earlier there are a lack of resources for enforcement in the county. Whilst we conduct some effective enforcement, we are aware that it is impossible to capture data about all weight restriction breaches in the county.

As part of the broader LTCP we are seeking to improve the transport monitoring and evaluation process. We plan to achieve this through four primary actions:

- Establishing a systematic monitoring and evaluation methodology.
- Conducting a data mapping and linking exercise within the county council.
- Develop long term data strategies for all key policies.
- Development of a monitoring tool.

The monitoring policy in the LTCP and the actions outlined above, will help to improve our monitoring of freight movement. To avoid repetition, we will not repeat the full LTCP policy here but support it as part of this strategy.

Action 40 – Delivery of the LTCP monitoring policy

We will work to deliver the LTCP monitoring policy and associated actions, ensuring that freight data and associated considerations are incorporated.

There are also freight specific data and monitoring considerations that need to be addressed. One consideration is the need to analyse HGV data according to axels and weight class.

During analysis of existing weight restriction schemes, we have noted the growth in 2-axle HGVs. As shown on the figure below, 2 axle-rigid HGVs are categorised into two groups. Smaller 2-axle lorries with a UK maximum gross weight over 3.5t and up to 7.5t, and bigger 2-axle lorries over 7.5t and up to 18t. Because 2-axle lorries can weigh anywhere between 3.5t and 18t, it makes monitoring and enforcement of a 7.5t weight restriction challenging.

The weight of a 2-axle vehicle can only be determined by checking the DVLA record therefore the number plate is needed, usually collected through Automatic Number

Plate Recognition (ANPR). We will be investigating the use of cameras in future traffic monitoring to enable greater classification of 2-axle vehicles

Recommended Description		Identifier	UK Maximum Gross Weight (tonnes)	Shape
LIGHT GOODS VEHICLES		2 axles	3.5	no rear side windows   
L O R R I E S (Vehicles over 7.5 tonnes gross require a Heavy Goods Vehicle Driver's Licence)	SMALLER 2-AXLE LORRIES	2 axles	Over 3.5 - 7.5	 
		2 axles	Over 7.5 - 18	 
	HEAVY GOODS VEHICLES	3 axles rigid	25 - 26*	 
		3 axles artic.	26	 
		4 axles rigid	30 - 32*	 
		4 axles artic.	36 - 38*	 
		Vehicle and draw-bar trailer 4 axles	30 - 36**	 
		5 axles or more artic. See note (a)	40	 
		Vehicle and draw-bar trailer 5 axles See note (a)	40**	 
		6 axles artic. See note (b)	41*	 
		6 axles draw-bar See note (b)	41* and **	 
		5 or 6 axles artic. See notes (b) and (c)	44* and ***	 
		6 axles draw-bar	44*** and ****	 
		6 axles artic. See note (b) and (d)	44*	 
		6 axles draw-bar See note (b) and (d)	44* and **	 

Figure 16 – Simplified guide to lorry types and weights⁶⁷

The trends associated with 2-axle vehicles highlight the need to analyse HGV data across Oxfordshire by axles and weight. This will help us to better understand the pattern of larger vehicle use and the potential impacts of any weight restriction scheme.

Action 41 – Analyse HGV data by axles and weight

We will seek to capture and analyse HGV data by axle and weight class across Oxfordshire. We will also use this understanding to inform future survey and monitoring requirements.

⁶⁷https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/211948/simplified-guide-to-lorry-types-and-weights.pdf

Freight data has historically been more difficult to obtain, however recently freight telematics data has become more common place. Telematics is the technology used to monitor a wide range of information relating to an individual vehicle or an entire fleet. This includes vehicle location data via GPS.

It is now possible for us to obtain telematics data that combines collated information from a wide range of operators. Analysis of this data enables us to identify and understand where the main freight vehicle movements are. This will help with many aspects of this strategy such as identifying inappropriate routes where restrictions may be required.

Action 42 – Analysis of freight data

We will conduct analysis of freight data to understand movements and inform future work. This will include analysis of telematics data when available.

Finally, where we implement any freight related scheme, we will monitor it to understand impacts and evaluate its effectiveness. Improving our monitoring and evaluation will help us to learn from experiences and enable us to improve how we design future schemes.

The ongoing monitoring and review of the Burford weight restriction is an example of how we can regularly monitor and review the effectiveness of a scheme. We will conduct similar analysis of any future weight restrictions or similar schemes.

This process will deliver more effective schemes, making better use of public money and optimising schemes so that they deliver better outcomes. It will also help to avoid problems and reduce any potential negative impacts.

Action 43 – Monitoring of freight schemes

We will conduct regular monitoring and review of any scheme that is implemented in relation to freight. This process will help us to learn from experiences and enable us to improve how we design future schemes.

Partnership working

As we have highlighted throughout this strategy, the freight system is complex and much of it is beyond the county council's control. It is therefore important that we work with partners to influence areas beyond the council's control.

Partnership working will also be essential to supporting many of the actions identified in this strategy. As outlined in the LTCP, OCC champion partnership working because we recognise the value and benefits of cultivating good working relationships with surrounding Local Authorities, regional/sub-national and statutory bodies.

Partnership working and the involvement of the whole supply chain will be essential to delivering this strategy, making more efficient use of Oxfordshire's roads and minimising the impact of freight on the county. We will work in partnership with operators, businesses, public sector organisations and our District and City councils to deliver this strategy and our long-term ambitions.

Many of the actions in this section underpin the aspirations outlined in the previous sections. We have specifically included them in this section to reflect the importance of partnership working if we are to deliver this strategy.

Engagement and cocreation

Where any issues arise with HGV movement, we will work with a range of stakeholders to explore solutions. This will support the actions identified in the appropriate movement section.

Engagement and cocreation may help us to avoid the need for weight restrictions if alternative solutions can be found. Similarly, as part of the inappropriate HGV movement action request process we will engage with a range of stakeholders to explore potential solutions. This will ensure that the action taken is tailored to the local area and has been shaped by a range of stakeholder feedback.

Action 44 – Engagement, cocreation and problem solving

Where issues are arising with inappropriate HGV movement we will look to engage with local communities, commercial operators, businesses and trade associations to understand the issue and explore solutions.

We recognise that transport does not stop at county boundaries and in the case of freight, movements are particularly complex. As a result, there may be opportunities to increase engagement with neighbouring local authorities, sub-national and national bodies to create cross boundary solutions.

Cross boundary working refers to the relationships developed between neighbouring local highway and unitary authorities to achieve joint-ambitions and collaborate. Sub-national transport bodies will play a particularly important role here due to their regional oversight.

OCC are a part of England's Economic Heartland (EEH) sub-national transport body. EEH published a [freight study](#) in 2019 and we will continue to work closely with them on freight issues.

There may also be opportunities to work with national bodies such as Network Rail and National Highways on cross boundary solutions. For example, Network Rail and National Highways published the [Solent to Midlands multimodal freight strategy phase 1](#) in June 2021. This road and rail corridor passes through Oxfordshire and so we will seek to engage and work with national bodies as part of this work.

Action 45 – Cross boundary working

We will explore opportunities to engage with neighbouring local authorities and national bodies to develop cross boundary solutions to freight issues.

We currently host the Oxfordshire Strategic Transport Forum which consists of academics, trade associations and local transport user groups. The group is used to engage with and seek feedback on a range of transport projects we are working on.

The Road Haulage Association (RHA) are a part of this meeting to provide input from a freight operator perspective. However, we believe there is an opportunity to explore the establishment of a steering group that is more focused on freight.

The steering group would consist of the county council, District and City councils and external stakeholders such as the RHA to oversee implementation of this strategy and address general issues arising around freight. The steering group could also be established at a regional level to begin.

Action 46 – Explore establishment of freight steering group

We will explore the establishment of a freight steering group to oversee implementation of this strategy and address general freight issues. We propose the group consists of the county council, District and City councils and external stakeholders.

Another area where cocreation and joint working is possible is via network management. We previously outlined how network management can be used to improve the efficiency of freight movement. There are opportunities to use our knowledge of network management to work with freight transport operators.

This joint working can be used to identify times of the day when there is more capacity on the road network. Freight operators could reschedule journeys to these times in order to improve the efficiency of their journeys.

Action 47 – Work with stakeholders to reschedule journey times

We will offer to work with freight transport operators to identify times of the day when there is more capacity on the road network.

Lobby central government

Many of the issues associated with freight require action from central government. A key issue in this category is the mode by which freight is moved. We will therefore

work with and lobby stakeholders at the regional and national level to encourage the shift of freight from road to rail.

Action 48 – Work with stakeholders to encourage alternatives to road freight

We will work with and lobby a range of stakeholders at the regional and national level to encourage the shift of freight from road to rail.

Funding and implementation

The actions in this strategy have demonstrated that it will be delivered in a number of ways. This includes through the planning process, through engagement with stakeholders and in some circumstances physical restrictions.

This section provides an overview of how some of these actions will be funded. It also provides an overview of when we expect some of these actions to be delivered, recognising that we have a limited amount of resource and some actions will be prioritised for the shorter term.

Funding

Some of the actions identified in the strategy will require funding to deliver. However, councils no longer receive funding directly to spend on transport improvements. We will therefore work hard to identify alternative funding sources. Key potential funding sources are outlined below. Owing to the linkages with the LTCP some of these are the same as those in the main LTCP.

Funding bids

From time to time, there are opportunities to submit bids to specific grant funding opportunities. These funding opportunities come from a range of sources including central government and the DfT.

With tightening local authority budgets, these opportunities are particularly valuable, allowing us to carry out work no longer affordable from Council budgets. We will seek to bid for every suitable opportunity.

Developer contributions

We will also use developer contributions to deliver the LTCP and freight strategy. Developers either contribute towards improvements to mitigate their transport impacts or carry out works themselves under S278 Agreements with the Council.

Through this approach it is possible for developers to deliver infrastructure or contribute funding towards larger schemes. We will continue to work with developers to secure contributions which align with and help to deliver our aspirations.

Partnership working

Funding or delivery opportunities may also be available to our partners such as the Local Enterprise Partnership (LEP), District and City councils. We will continue to work with these partners to take account of the various funding sources available.

Charging schemes

We have proposed investigating charging schemes including road user charging and CAZs/ZEZs. These measures could provide a funding stream which can be used to deliver actions outlined in this strategy.

Enforcement revenues

Similarly, the enforcement of any freight vehicle restrictions could provide a funding stream from the payment of penalty fines. In the first instance this would be used to

cover the cost of enforcement, however it could also be used to deliver other actions in this strategy.

Implementation

We are committed to delivering the range of actions identified in this strategy, however it is necessary to prioritise them. This will help to guide future work on delivery of the strategy and make best of use of the resources available.

In order to do this, we have grouped the actions into those we anticipate delivering by 2025 and those that will be delivered between 2025 and 2030. As part of the LTCP review, we will review and update this section.

	Up to 2025	2025 - 2030
Appropriate movement	Action 1 – Promote considerations about reducing the need for freight movement	Action 4 – Conduct review of road classifications
	Action 2 – Develop appropriate HGV route map	Action 8 – Consider the establishment of area based weight restrictions
	Action 3 – Create a map of existing weight restrictions	Action 10 – Explore implementation of road user charging schemes to reduce commercial vehicle flows, emissions, and encourage use of the appropriate routes
	Action 5 – Promotion of HGV route map	Action 11 – Explore technology to aid enforcement
	Action 6 – Establish a clear process for how any action to address inappropriate HGV movement is decided and funded	
	Action 7 – Develop more detailed guidance for inappropriate HGV movement action request process	
	Action 9 – Lobby for enforcement of moving traffic offences under Traffic Management Act part 6	
	Action 12 – Review best practice	
	Action 13 – Seek to influence the location and design of new development	
	Action 14 – Ask developers of major sites to prepare Construction Logistics Plans	
Efficient movement	Action 16 – Promote rail freight	Action 15 – Monitor the use of water freight
	Action 17 – Support the provision of strategic rail freight interchanges	Action 18 – Work with stakeholders to increase rail network capacity
	Action 19 – Enhance network management	Action 20 – Improve data gathering and usage
	Action 22 – Review current rest stops and lorry parking facilities	Action 21 – Improve data sharing
		Action 23 – Promote the creation of rest stops and lorry park facilities

		Action 24 – Support the development and trialling of drone technology
		Action 25 – Monitor truck platooning progress and opportunities
		Action 26 – Consider future technology requirements
Zero-tailpipe emission, zero-carbon movement	Action 30 – Monitor electrified road systems study	Action 27 – Support battery electric vehicle charging infrastructure requirements
	Action 31 – Promote cycle freight in Oxford	Action 28 – Monitor alternative HGV fuel requirements and options
	Action 32 – Promote cycle freight across Oxfordshire	Action 29 – Strategically locate refuelling infrastructure
Reducing local air pollutants		Action 33 – Engagement around Clean Air and Zero Emission Zones
		Action 34 – Freight consolidation feasibility study
		Action 35 – Safeguard land for freight consolidation
Safe movement	Action 36 – Reduce conflicts between freight vehicles and people	
	Action 37 – Promote road safety education resources and campaigns	
	Action 38 – Support expansion of 20mph speed limits	
	Action 39 – Establish a code of conduct with food delivery operators	
Monitoring movement	Action 40 – Delivery of the LTCP monitoring policy	Action 41 – Analyse HGV data by axles and weight
	Action 42 – Analysis of freight data	Action 43 – Monitoring of freight schemes
Partnership working	Action 44 – Engagement, cocreation and problem solving	Action 47 – Work with stakeholders to reschedule journey times
	Action 45 – Cross boundary working	Action 48 – Work with stakeholders to encourage alternatives to road freight
	Action 46 – Explore establishment of freight steering group	

Glossary

B

Battery Electric Vehicles (BEVs): A vehicle that uses an electric motor with energy stored in rechargeable battery packs.

C

Clean Air Zones (CAZs): An area where vehicles with higher tailpipe pollutant emissions are restricted or charged for access.

Connected and Autonomous Vehicle (CAV): Vehicles equipped to exchange information with surrounding environment and can operate in a mode which is not being controlled by an individual⁶⁸.

Construction Logistics Plans (CLPs): Provide the framework for understanding and managing construction vehicle activity into and out of a proposed development⁶⁹.

COVID-19: An infectious disease caused by a newly discovered coronavirus. Responsible for a global pandemic in 2020-21.

D

Department for Transport (DfT): The government department responsible for the English transport network.

E

England's Economic Heartland (EEH): Partnership authority group, which functions as a non-statutory sub-national transport body.

Experimental traffic regulation order (ETRO): A temporary traffic regulation order which highway authorities have the power to impose without consultation.

G

Global Positioning System (GPS): A device that is capable of receiving information from satellites and then calculate the device's geographical position.

Gross Domestic Product (GDP): Monetary measure of the market value of all the final goods and services produced in a specific time period.

H

⁶⁸ Automated and Electric Vehicles Act 2018

⁶⁹ <https://www.arup.com/projects/construction-logistic-plan>

Heavy Goods Vehicles (HGV): Commercial trucks that feature a gross combination mass of over 3500kg.

Hydrogen Fuel-Cell Vehicles (FCEV): Electric vehicles with a hydrogen fuel cell system instead of a battery pack.

I

Internal combustion engine (ICE): Device where the ignition and combustion of the fuel occurs within the engine itself. Presently used in petrol and diesel vehicles.

Internet of Things (IoT): System of interrelated, internet-connected objects that are able to collect and transfer data over a wireless network without human intervention⁷⁰.

L

Light Goods Vehicles (LGV): Commercial trucks that feature a gross combination mass of under 3500kg.

Local Enterprise Partnership (LEP): Voluntary partnerships between local authorities and businesses.

Local Transport and Connectivity Plan (LTCP): Oxfordshire County Council's new Local Transport Plan.

Local Transport Plan 4 (LTP4): Oxfordshire County Council's previous Local Transport Plan (2015-2031).

London Lorry Control Scheme (LLCS): Controls the movement of heavy goods vehicles over 18 tonnes at night and at weekends on specific roads in London.

N

New Roads and Streetworks Act (NRSWA): Provides a legislative framework for street works by contractors and works for road purposes.

Nitrogen Dioxide (NO₂): Nitrogen Dioxide is one of a group of gases called nitrogen oxides (NOx). NO₂ primarily gets in the air from the burning of fuel⁷¹.

O

Office of Rail and Road (ORR): The independent safety and economic regulator for Britain's railways and monitor of Highways England⁷².

Oxfordshire County Council (OCC): The county council for Oxfordshire.

⁷⁰ <https://www.aeris.com/in/what-is-iot/>

⁷¹ <https://www.epa.gov/no2-pollution>

⁷² <https://www.gov.uk/government/organisations/office-of-rail-and-road>

Oxfordshire Electric Vehicle Infrastructure Strategy (OEVIS): Oxfordshire's electric vehicle charging strategy which sets out 17 policies and associated key actions for the short term (2020-2025).

P

Particulate Matter (PM): Term for a mixture of solid particles and liquid droplets found in the air⁷³.

R

Road Haulage Association (RHA): Road haulage trade association.

S

S278 Agreements: A section of the Highways Act that allows developers to enter into a legal agreement with the council to make permanent alterations or improvements to a public highway, as part of a planning approval.

Strategic rail freight interchanges (SRFI): A large rail served distribution and warehouse park linked into both rail and the strategic highway network.

T

Traffic Management Act (TMA): Act of UK Parliament that details the street works regulations. All the parties interested in occupying streets / highways need to follow the specified guidelines.

Traffic regulation order (TRO): A legal tool which allows a local authority to restrict, regulate or prevent the use of any named road.

U

Ultra-Low Emission Zone (ULEZ): The charging low emission zone in central London.

Unmanned Aerial Vehicles' (UAV): Remote-controlled aircraft or small aerial devices which do not have an on-board pilot.

Z

Zero Emission Vehicles (ZEV): A vehicle which emits 0g of carbon dioxide from the tailpipe per kilometre travelled.

Zero Emission Zones (ZEZs): An area where all vehicles except those with zero tailpipe emissions are restricted or charged.

⁷³ <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics>