Dorset Council

TRANSPORT

Detailed Technical Paper

15 July 2021

TRANSPORT

1. CONTEXT

National Context

Key Issues:

- Decarbonising of our transport and logistics fleets
- Breaking the dominant car-based culture
- Making active travel and public transport the first mode of choice for the movement of people
- Reducing the volume of goods moved by road
- Achieving zero carbon from transport infrastructure construction and maintenance activities
- Minimising the impact of climate change on the operation of our transport networks.

Transport is a vital sector that enables the movement of people and goods. As a result, people and businesses rely heavily on the country's transport and logistics networks. However, due to a dependency on fossil fuels amongst the road transport, aviation, and shipping industries, transport produces a large carbon footprint. A key challenge is the decarbonisation of our transport and logistics networks in order to move towards a zero-carbon future.

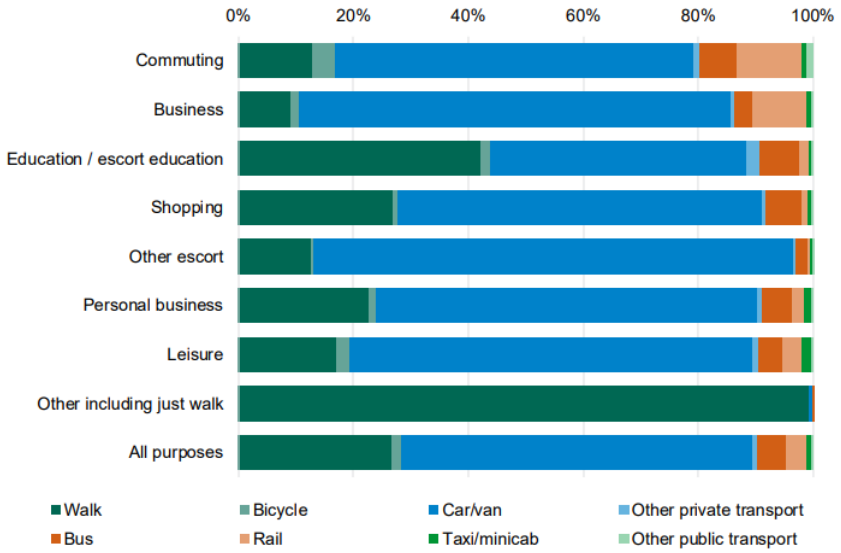
Sustainable transport can be defined as any efficient, safe, and accessible means of transport, with overall low impact on the environment. Sustainable transport places importance on holistic, accessible, integrated, efficient, safe, equitable, healthy, comfortable, participative, and environmentally friendly approaches. There is a focus on policies to promote alternatives to the car, including walking, cycling, and public transport to minimise the impacts of car travel. A key challenge is to make active travel and public transport the first mode of choice for the movement of people.

In 2018, 808 billion passenger kilometres were travelled in the UK, with 83% of passenger kilometres made by cars, vans, and taxis, and approximately 1% made on public transport. Across Great Britain, 68% of workers typically travelled to work by car, though this varied by region with London having a substantially lower proportion (27%)[1]. Breaking the dominant car-based culture that exists requires action to reduce the need to travel and achieve long term mode shift.

The transport sector is estimated to have been responsible for around 28% of UK greenhouse gas emissions in 2018, the main source of emissions being the use of petrol and diesel in road transport.

[1] Transport Statistics Great Britain 2019, Department for Transport, 2019

Figure 1: Trips by Mode, England 2018



In 2018, most of the freight moved domestically was by road (79%) and goods moved by rail have increased, while waterborne freight continues its steady decrease since 2000[2].

In addition to the carbon emissions from the use of vehicles, there are carbon emissions associated with creating and maintaining our transport infrastructure. In 2014, a report from Highways England projected a doubling of carbon emissions from highways maintenance and construction from the 2014 baseline of 0.5 $MtCO_2e$ to over 1.2 $MtCO_2e$ by 2020[3].

Network Rail has aligned to the UK Government commitment to achieve net zero carbon emissions by 2050. In 2018/19, Network Rail reduced carbon emissions by 8% compared to the previous year. Achieving zero carbon from construction and maintenance activities will be a challenge at a national and local level and will be an important action for Dorset Council within the highways service.

Day-to-day weather conditions affect all types of transport, with weather-related disruption most often caused by wind, rain, snow, and ice. Climate change will exacerbate these issues with expected increases in the magnitude, duration, and frequency of these weather conditions, especially the expected increases in summer temperatures and incidence of heavy rainfall.

Because transport networks are closely interlinked, climate related disruption affecting one form of transport can have knock-on effects on others. Similarly, the overall level of risk facing the sector may be intensified by its interdependencies with other sectors (e.g. damage to the energy infrastructure caused by extreme weather events can disrupt rail, road, port, and airport networks and operations).

[2] Transport Statistics Great Britain 2019, Department for Transport, 2019
[3] Highways Agency Carbon Routemap: Opportunities for a national low carbon system; REP03, 28/08/14

Dorset Context

Key Issues:

- Transport is the biggest emitting sector, contributing 44% of the total carbon emissions or an estimated 765 kt CO_2[4]
- In rural areas, there is a greater need to travel for work, education, training, and access to other essential services as these services are not available locally
- The growing car culture is a vicious cycle. Public transport services are cut back as a result of reduced demand
- Reduction in central government bus support funding
- The low frequency and lengthy journey times on the Heart of Wessex line make this service less appealing for commuter journeys.

The Local Transport Plan 3 (LTP3) 2011-26 sets out a strategy to deliver a first class transport infrastructure and help to deliver:

- Economic growth
- A reduction in carbon emissions
- Equality of opportunity
- Improved safety, security, and health
- Improved quality of life for residents.

A number of transport challenges were identified in the LTP. These included:

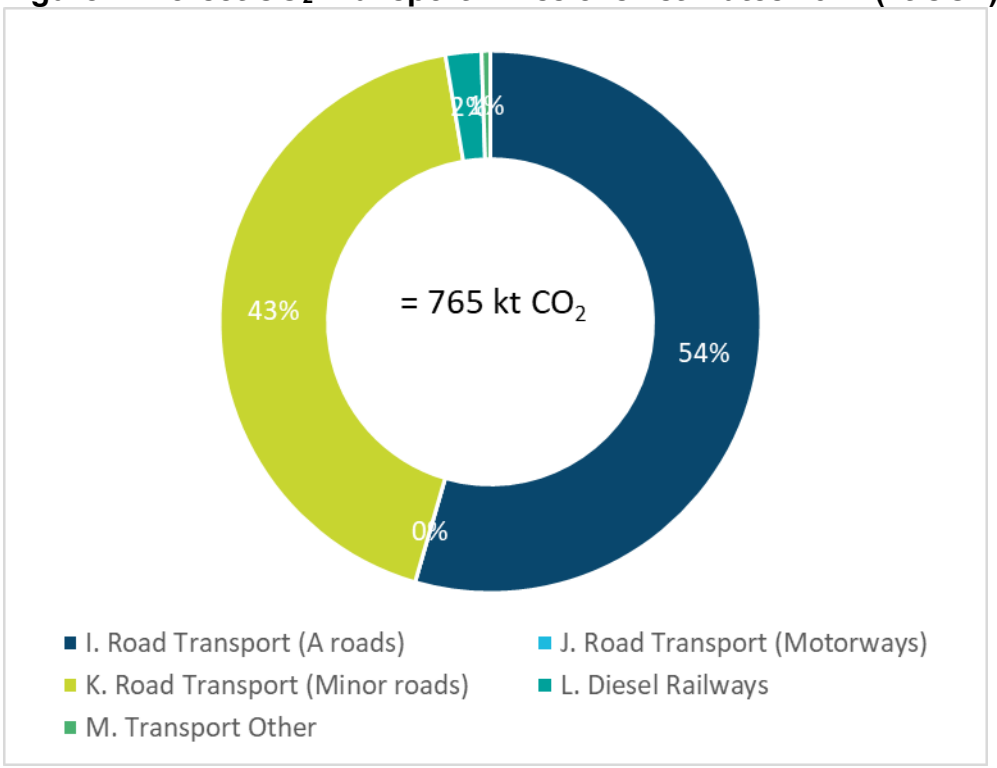
- Population growth and the cumulative impact of new development adding pressure to the existing network.
- Traffic growth and key routes and junctions exceeding capacity, resulting in an increase in delays and a fall in average traffic speeds.
- Visitor traffic results in significant peak seasonal increases in traffic and congestion, particularly on coastal routes.
- Car ownership in rural areas is amongst the highest in the country and consequently car dependency is high. Car based commuting in both DCC Dorset and Poole is higher than the England average.
- In rural areas, average journey lengths are longer due to the need to travel to access key services which are not available locally and, often without access to public transport links, this therefore increases dependence on the car.
- The vast majority of freight is transported by road, and this trend is expected to continue due to rail infrastructure constraints. Road freight causes local issues of noise, vibration, and pollution, particularly on routes that pass through settlements.

[4] Department for Business, Energy & Industrial Strategy. 2019. UK local authority and regional carbon dioxide emissions national statistics: 2005-2017. https://www.gov.uk/government/collections/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics

Transport is the biggest emitting sector in Dorset. In 2017, transport contributed 44% of the total carbon emissions or an estimated 765 kt CO_2[5]. The transport proportion of total emissions in Dorset matches the South West regional average, although this is higher than the national proportion for transport emissions, which is 37%.

Road traffic is the biggest transport producer of carbon emissions, accountable for 97% of all transport emissions. In 2018, there were 4,102 million vehicle kilometres travelled in the Dorset Council Area[6]. In rural areas across Dorset, there is a greater need to travel for work, education, training, and access to other essential services, as these services are not available locally.

Figure 2: Dorset CO_2 Transport Emissions Estimates 2017 (kt CO2)



In 2019, there were 283,450 vehicles registered in the Dorset Council area. Cars make up the majority, representing 79% of all vehicles registered. The growing car culture is a vicious cycle. Public transport services are cut back as a result of reduced demand, making car use more attractive and locking people into car dependency (Lucas and Jones, 2009). However, there are significant opportunities to reduce dependency on cars to help tackle congestion and reduce carbon emissions by achieving a modal shift to public transport and active travel modes.

Car use continues to account for a significant proportion of commuter journeys and journeys from home to school. In 2015/16, 35%[7] of all pupil journeys to school were made by car for the Dorset Council

[5] Department for Business, Energy & Industrial Strategy. 2019. UK local authority and regional carbon dioxide emissions national statistics: 2005-2017. https://www.gov.uk/government/collections/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics

[6] Department for Transport. 2019. Road traffic estimates in Great Britain: 2018. https://www.gov.uk/government/statistics/road-traffic-estimates-in-great-britain-2018. Pre LGR, includes Christchurch

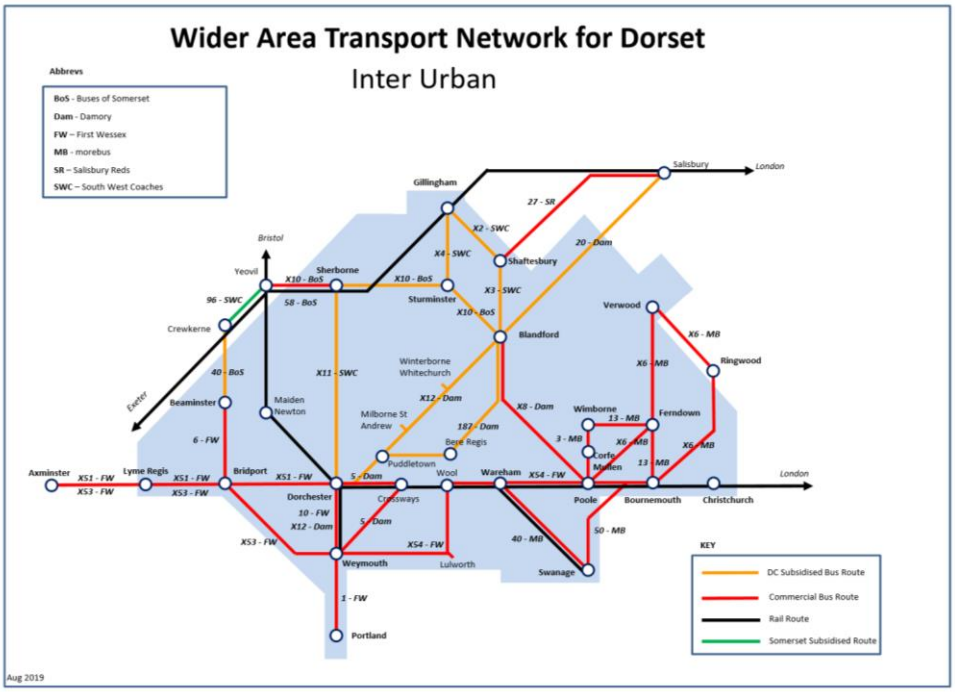
[7] School Travel Health Check 2015-16 School Year Report

area. Car travel to schools causes a number of associated issues. Congestion on the roads outside schools is unfortunately a common problem and vehicle emissions result in local air quality issues, which is known to have serious impacts on public health. In addition, the policy of parental choice to send a child to a school that isn't the closest to where they live has led to an increase in vehicle miles travelled by car from home to school.

The DfT bus statistics shows that in 2018/19 there were an estimated 4.7 million bus service miles in Dorset[8]. Only 9% of the bus network is authority supported. The core bus network is built around commercial services that connect the main settlements operating along the primary transport corridors, and there are a small number of subsidised routes serving other key settlements. The bus network was restructured in 2016 due to a reduction in central government funding.

Future government funding is subject to competitive bidding which means there is no guaranteed source of additional income to develop and support new services. There is 100% coverage of the Dorset Council area by public or community transport. However, provision does not meet all transport needs at all times of day or day of the week, especially in rural areas away from the core network.

Figure 3: Existing Public Transport Network



Dorset is served by two rail lines, London to Weymouth South coast mainline and the Weymouth to Bristol Heart of Wessex line. This forms a critical part of the strategic public transport network. In 2018, the Office of Rail and Road (ORR) estimates that there were 5.66 million passenger journeys between Dorset, Somerset to / from another region, and 5.47 million passenger journeys made within the South West region. The low frequency and lengthy journey times on the Heart of Wessex line make this service less appealing for commuter journeys.

Walking and cycling can replace shorter car trips and significantly improve health. Data from the 2011 census reveals that there were 4,351 cycle commuter trips within the Dorset area. It has been calculated that this avoided 4.5 million kilometres of car journeys and saved 821 t CO_2.

[8] DfT. 2019. Vehicle miles on local bus services by local authority. Table BUS0208a. https://www.gov.uk/government/collections/bus-statistics

Dorset Council

Key Issues:

- Changing the commuter travel behaviour of staff and achieving mode shift
- Reducing the 4.3 million business miles undertaken by staff in their own vehicles
- Decarbonising the Dorset Council vehicle fleet of more than 700 vehicles
- Decarbonising contracted home to school transport, SEN, Adult Social Care (ASC), and supported bus services
- Reducing carbon emissions associated with the construction and maintenance of transport infrastructure.

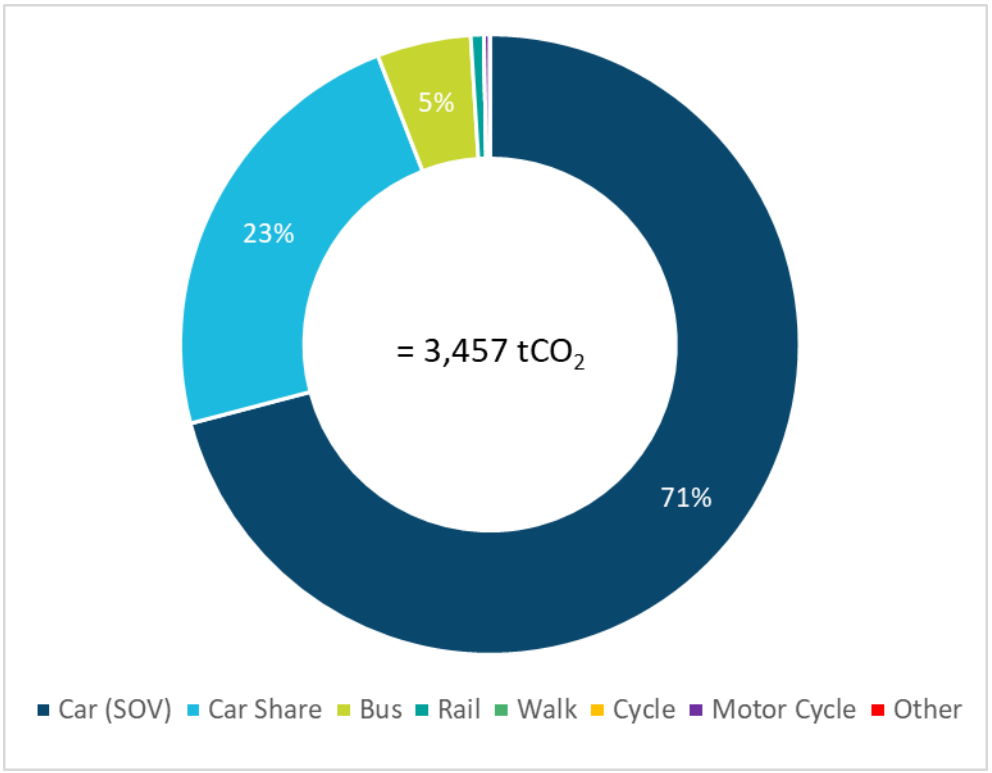
Dorset council creates carbon emissions from vehicle use, as staff commute to and from work and undertake the Council's operations, such as highways management or waste collection.

With over 9,000 employees, Dorset Council staff produce significant carbon emissions. It is estimated that staff commuting produces approximately 3,457 t CO29. Travel surveys have shown that, on average, 55% of Dorset Council staff commute alone by car. Changing the commuter travel behaviour of staff and achieving a mode shift from car to sustainable modes will be a major challenge to be addressed in a new workplace travel plan. A staff travel survey, the first to take place since local government reorganisation, planned for spring 2020 has been postponed due to the COVID-19 outbreak.

An analysis of the home location of Council employees shows that over 1,500 staff live within five miles of their place of work. For such short distances, walking and cycling should be encouraged. The introduction of positive travel plan measures through the updated Council Travel Plan will encourage the use of sustainable modes by staff and lead to a reduction in carbon emissions.

Figure 4: Dorset Council Staff Commuting Emissions Estimate

[9] Best estimate calculated from mode split data from previous staff travel surveys, staff headcount, average commute distance based on crow flies distance between home and work location, and national statistics on propulsion type of the GB vehicle fleet. It is recommended that this figure is recalculated upon completion of an up to date staff travel survey

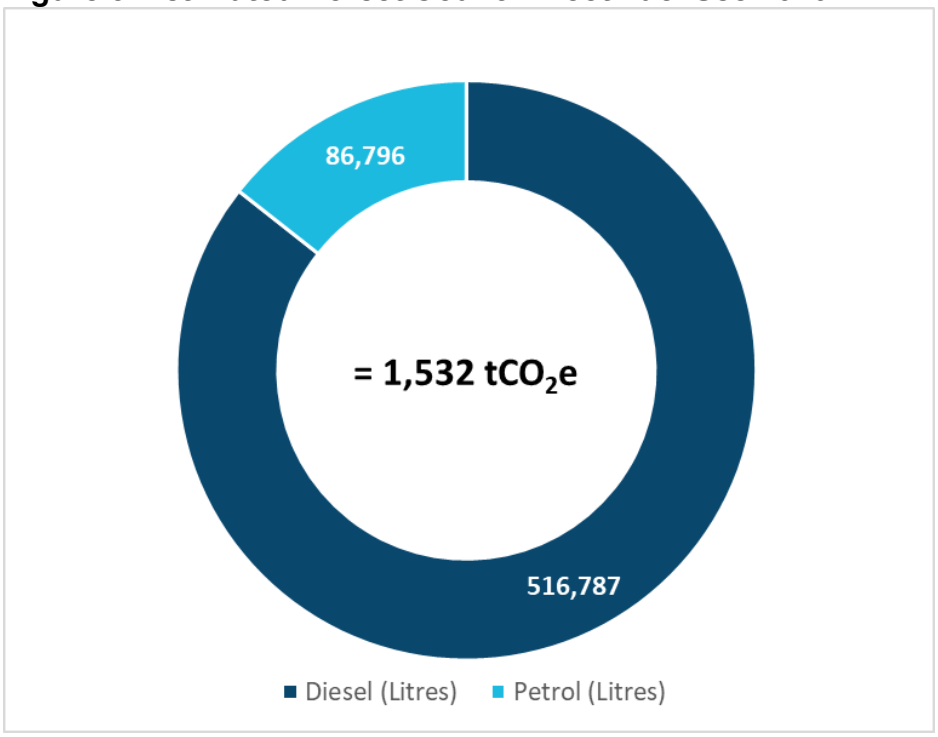


Analysis of data held in the DES system shows that in 2019 4.3 million miles were undertaken by Dorset Council staff on work business[10]. In 2019, business mileage claims cost Dorset Council £1.9 million. Most business miles are undertaken by staff in their own vehicles, despite the encouragement of using available pool cars and pool bikes for staff and public transport use. It is estimated that 1,219 t CO2 is produced annually as a result of Council business travel. Therefore, working practices will need to change to alter this pattern of business travel and eliminate carbon emissions.

Dorset Council operates a large vehicle fleet of more than 700 vehicles to deliver its services. This includes pool cars, works vans, 4x4's, buses, and mini buses, as well as gritters, refuse collection trucks, HGV's, plant equipment, and other specialist vehicles. Dorset Waste Partnership and the Highways Service operate the largest departmental fleets, both with more than 200 vehicles. The Coast and Countryside service and Dorset Travel also operate sizeable vehicle fleets. Analysis of fuel data, from the bunkered fuel issued and fuel card receipts, show that in total 608,047 litres of fuel were used in 2019. Therefore, it is estimated that fleet operations in 2019 generated 1,532 t CO_2.

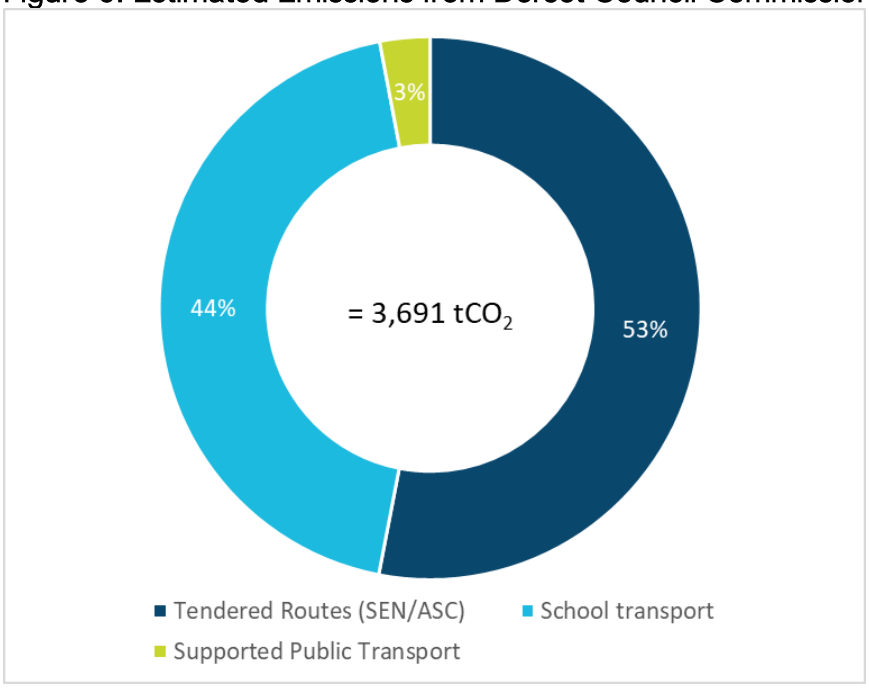
[10] There is no data for the whole authority as the former districts have only recently started using DES to record mileage.

Figure 5: Estimated Dorset Council Fleet Fuel Use 2019



Dorset Council is also responsible for commissioning services, such as contracted home to school transport, SEN, Adult Social Care (ASC), and supported bus services. It is estimated that there are approximately 500 services being contracted to transport providers, with their carbon emissions estimated to be at 3,691 t CO_2.

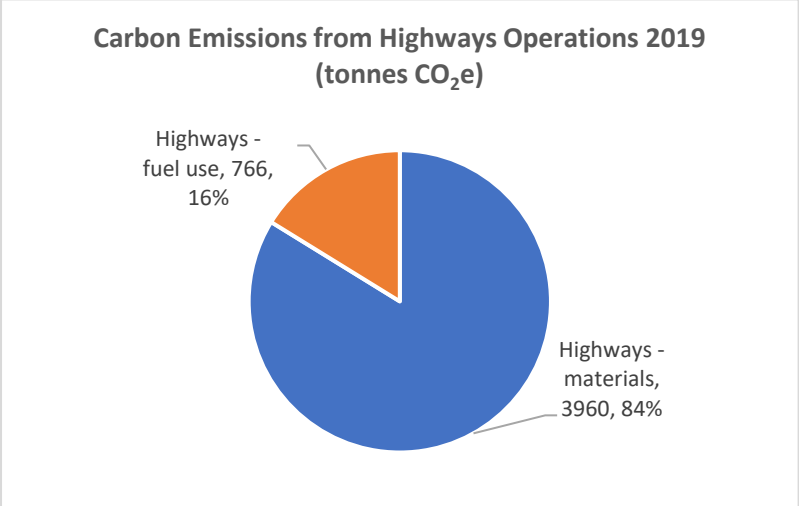
Figure 6: Estimated Emissions from Dorset Council Commissioned Transport Services



There are also carbon emissions associated with the construction and maintenance of transport infrastructure from the vehicles used in construction and emissions from creating the materials used. In 2019, Dorset Council highways operations emitted 4,726 t CO_2.

Dorset Council has been working with the supplier of our road surfacing materials to reduce the carbon emissions from the process. The Council has made the move to Low Energy Asphalts (LEAs), which reduces the energy used to heat our hot coated materials (tarmac) from 180 degrees by between 30 and 40 degrees. This will substantially lower carbon emissions estimated to achieve savings of approximately 30%.

Figure 7: Carbon Emissions from Highways Operations 2019



The Council also have a County Farm Estate, which host 63 km of public rights of way and can help local people become more active and provide direct access to Dorset's unique countryside. This can help improve both public health and wellbeing.

2. PROGRESS / CURRENT SITUATION

National

Opportunities:

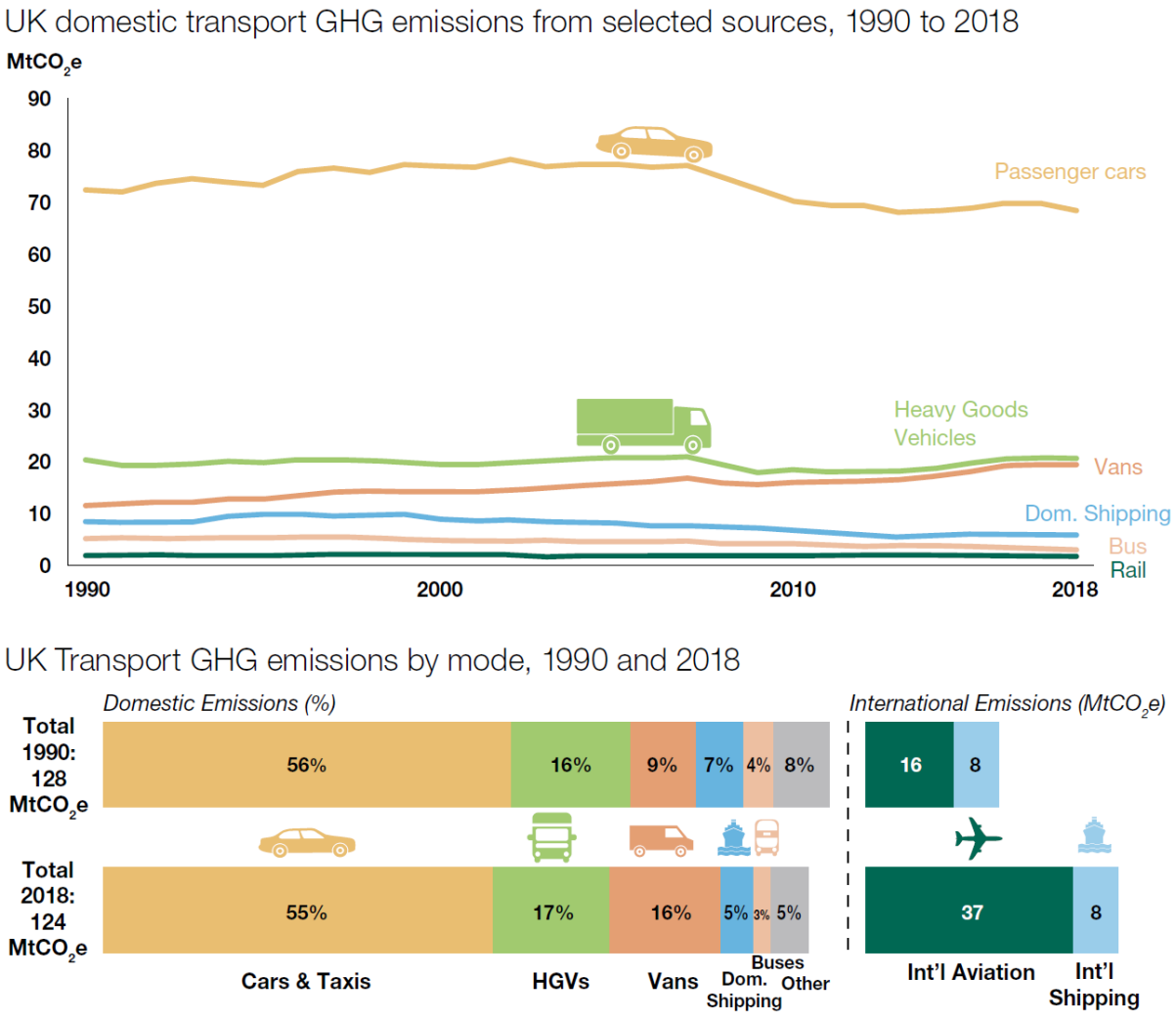
- The ban on the sale of new petrol and diesel cars by 2040, government consulting on earlier 2035 ban
- Rapid growth of the public electric vehicle charging network and large scale investment from the private sector
- New funding opportunities for local bus services and active travel infrastructure
- Continued government grants schemes for ULEV purchase and chargepoint installation.

Between 1990 and 2018, there has been relatively little change in the level of greenhouse gas emissions from the transport sector. Between 1990 and 2007 (when emissions peaked), there was a general increasing trend, with some fluctuations year to year. After this peak, emissions started falling in 2008

at around the time of the recession, until 2013, at which point this trend reversed to show small increases most years.

Emissions from transport fell by 1.4% in 2018, their first fall since 2013. Despite this, transport remains the largest emitting sector, with emissions only 3% lower than in 1990, as increased road traffic has largely offset improvements in vehicle fuel efficiency. While road improvement schemes that improve the flow of traffic and reduce congestion can lead to a short term reduction in pollutants being emitted, over time these will be eroded and exceeded by additional emissions from induced traffic associated with increased capacity and improved journey times. The overall effect of these fluctuations over time means emissions are estimated to have been around 3% lower in 2018 than in 1990[11].

Figure 8: UK domestic carbon emissions by mode[12]



Source: 2018 UK greenhouse gas emissions[12]

The Government's 2018 Road to Zero Strategy outlines how it will support the transition to zero emission road transport. It sets a target for ultra-low emission vehicles (ULEVs) to account for 50% - 70% of new

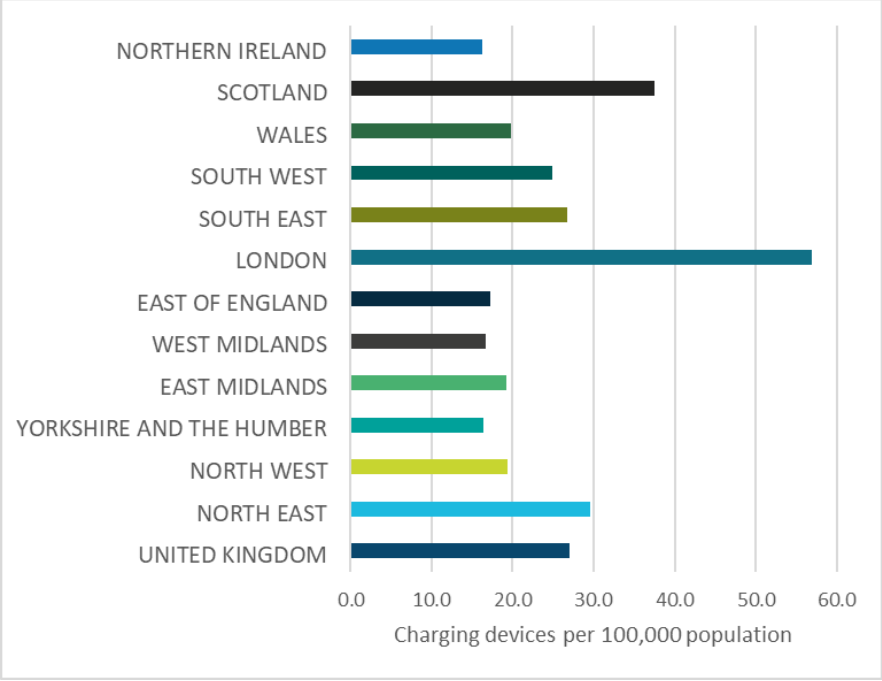
[11] 2018 UK Greenhouse Gas Emissions, Final figures, DBEIS, 4 Feb 2020
[12] Sourced in DfT, 2020, Decarbonising Transport Plan: Setting the Challenge

car sales by 2030. Projections by National Grid suggest that the UK stock of EVs could reach between 2.7 and 10.6 million by 2030 and could rise as high as 36 million by 2040. In 2020, the Government consulted on introducing an earlier ban, proposed as 2035, on the sale of new petrol and diesel cars.

Providing the electric vehicle charging infrastructure to enable this rapid shift from fossil fuels requires significant action from public and private sectors to ensure that a public on street and off street network is provided and removes a barrier to widespread EV adoption. At the end of 2019, there were over 250,000 plug-in electric vehicles in the UK[13]. By 1st April 2020, there were 17,947 public electric vehicle charging devices available in the UK, with 3,107 being rapid devices[14].

The Government is supporting the move to ULEVs through grants to reduce the initial purchase cost of eligible plug-in vehicles and the cost and installation of chargepoints. Local authorities can apply to the On-street Residential Chargepoint Scheme (ORCS), to increase the availability of plug-in vehicle charging infrastructure for residents who do not have access to off-street parking. The geographical distribution of charging points is uneven, with more devices per person in London and Scotland than in other regions.

Figure 9: Electric Vehicle charging devices per 100,000 people, April 2020[15]



In February 2020, the Prime Minister announced £5 billion funding for investment in local buses, cycling, and walking infrastructure. The announcement set out a vision to make every day journeys easier, greener, and more convenient. A package of investment to boost bus services included:

[13] Department for Transport. 2020. Vehicle Licensing Statistics table VEH0131 plug-in cars and light goods vehicles licensed by local authority https://www.gov.uk/government/collections/vehicles-statistics
[14] Department for Transport. 2020. Electric Vehicle Charging Device Statistics EVCD_01 Publicly available electric vehicle charging devices by local authority https://www.gov.uk/government/statistics/electric-vehicle-charging-device-statistics-april-2020
[15] DfT. 2020. Electric Vehicle Charging Device Statistics: April 2020. http://maps.dft.gov.uk/ev-charging-map/

- Higher frequency services to make it easier and less restrictive for people to get around at any time of day
- More 'turn up and go' routes where people won't have to rely on timetables to plan journeys
- New priority schemes will make routes more efficient
- More affordable, simpler fares
- At least 4,000 new Zero Emission Buses.

The details of these programmes will be announced in the upcoming National Bus Strategy. The Chancellor announced over £200 million to transform bus services in the Spending Round for 2020 to 2021 through the creation of the all electric bus town fund, rural mobility fund[16], and supported bus services fund.

Cycle funding is also set for a major boost. The Government announcement included a vision to create a long-term cycling programme and budget for over 250 miles of new, high-quality separated cycle routes. This is as well as safe junctions, dozens of new 'Mini-Holland' schemes, and the introduction of tough new design standards, ensuring more people can cycle safely and get around by bike more conveniently.

Dorset

Opportunities:

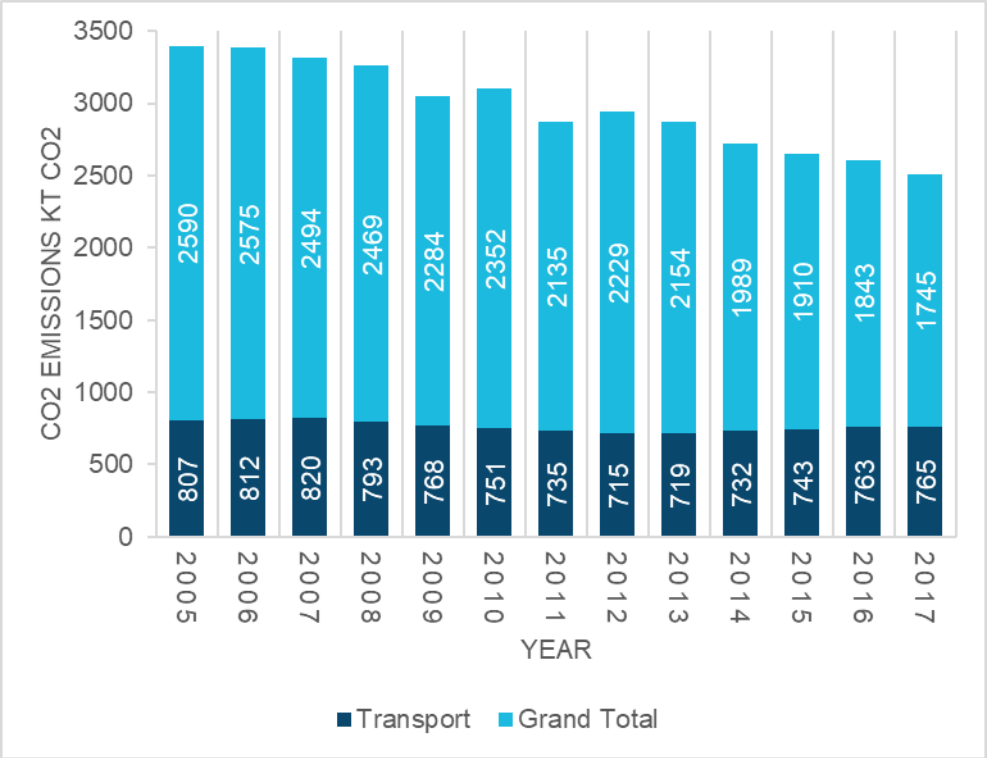
- The LTP is a statutory planning document and already demonstrates a strong commitment to sustainable transport policies and carbon reduction. An LTP refresh offers further opportunity to embed carbon reduction policy.
- The rapid growth in electric vehicle ownership that is predicted creates a strong business case for private investment in the public charging point network.
- CarshareDorset is a well established platform for reducing the impact of single occupancy car travel.
- Capitalise on regional growth in rail travel to lobby for improved rail services
- Local cycling and walking investment plans will identify active travel investment priorities.
- TCF programme will deliver a step change in active travel network infrastructure in South East Dorset and provide stimulus for long lasting behaviour change.

LTP3 sets out a number of sustainable transport policies aimed at reducing the need to travel, enhancing choices for active travel and "greener" travel, and providing realistic public transport alternatives to the private car. LTP3 set a target to reduce carbon emissions from the transport sector by 30% on 2005 levels by 2020. Total emissions in Dorset from transport have fallen by 5% from 807 $ktCO_2$ in 2005 to 765 $ktCO_2$ in 2017. The Dorset council area reduction is higher than for the South West region (3%) but lower than the average reduction in England (7%). The LTP reduction target has not been met. However, this demonstrates the importance of action at a national level alongside local action to achieve the big emissions reduction needed.

[16] Dorset Council submitted an expression of interest in June 2020 to develop a 3 year pilot rural flexible bus service, seeking funding up to £1.5.

Transports share of total CO_2 emissions in Dorset has increased from 31% in 2005 to 44% in 2017. Reductions from industrial, commercial, and domestic sources have far exceeded those achieved by the transport sector. As a result, transports share of total CO_2 emissions has increased despite the overall reduction achieved by the sector.

Figure 10: Dorset transport carbon dioxide emissions 2005-2017[17]

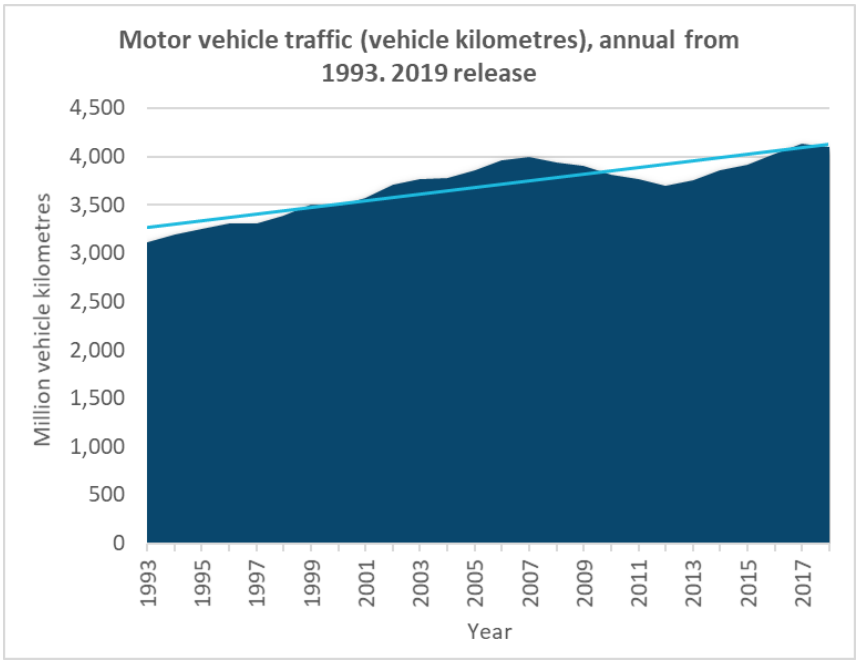


There has been continued growth in vehicle travel on Dorset's roads. Since 1993, the volume of vehicle kilometres in the Dorset Council area has risen by 32%. Across the South West region, vehicle kilometres travelled has increased by 39%, compared to 27% across England.

Figure 11: Total annual vehicle kilometres travelled in the Dorset Council area[18]

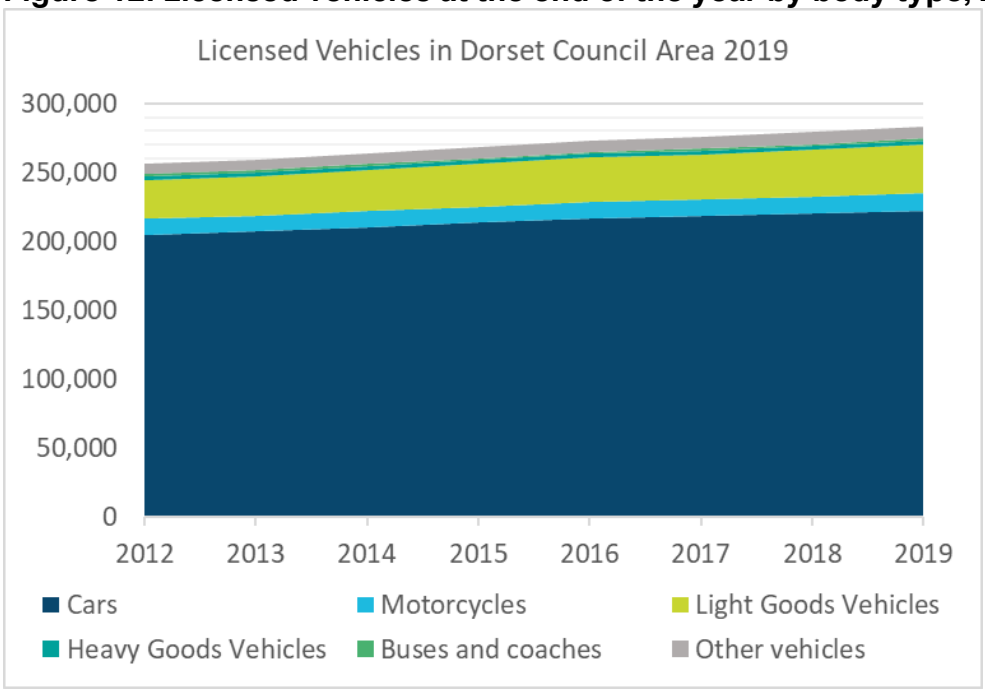
[17] BEIS. 2019. UK local authority and regional carbon dioxide emissions national statistics https://www.gov.uk/government/collections/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics

[18] DfT 2020. Road traffic statistics. https://www.gov.uk/government/collections/road-traffic-statistics



The number of Light Goods Vehicles (LGVs) registered in Dorset has increased significantly (26%) since 2012, and now represent 12.6% of all vehicles. This trend is likely to continue with the growth of online retailing and parcel deliveries.

Figure 12: Licensed vehicles at the end of the year by body type, 2019[19]



In 2019, there were 1,255 registered Ultra Low Emission Vehicles (ULEVs) in the Dorset council area. However, just 0.5% of the of all cars and LGV's in Dorset were plug in electric.

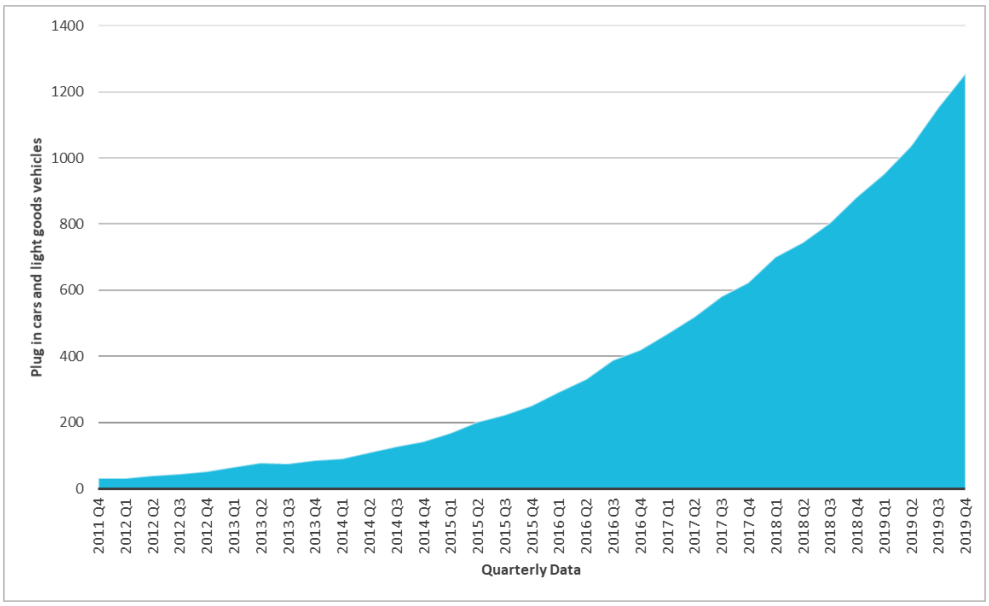
[19] DfT. 2020. Vehicle Licensing Statistics. https://www.gov.uk/government/collections/vehicles-statistics

By April 2020, the number of publicly available charging points in Dorset has reached 80 devices (DfT, April 2020). The UK average is 27 charging devices per 100,000 population. In Dorset, there are currently 21 charging devices per 100,000 population. However, a Council programme of charging point installations commencing in 2020 will expand the public off street network significantly over coming years.

Publicly available electric vehicle charging devices April 2020[20]

Total public charging devices	Total public rapid charging devices	Charging devices per 100,000 population
80	12	21.2

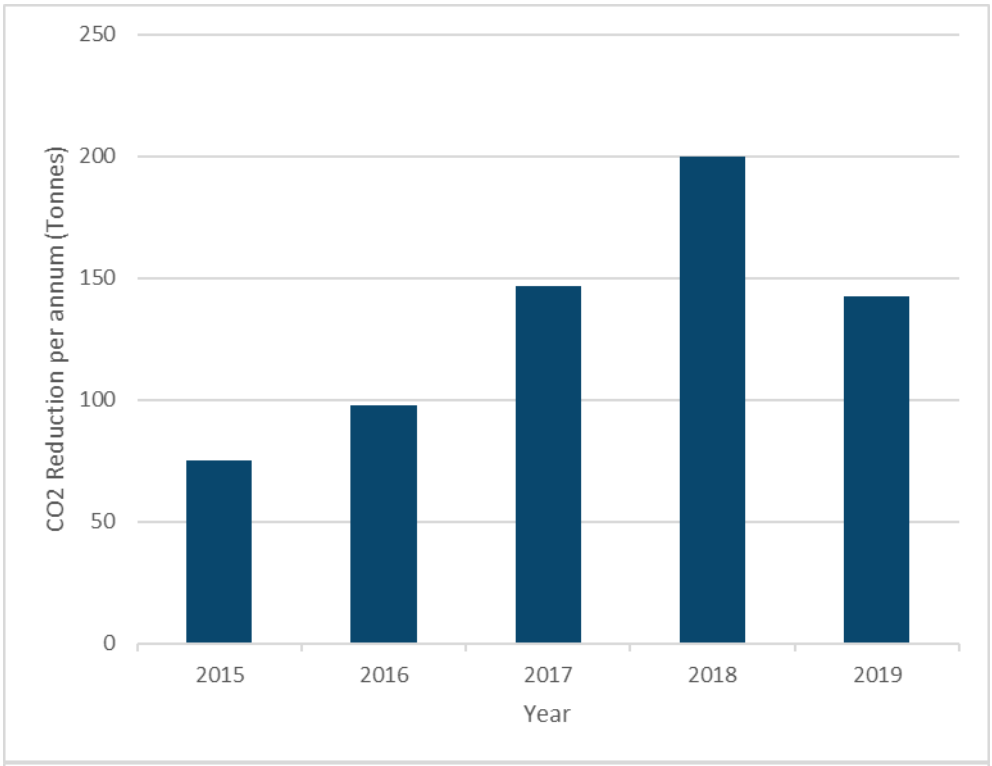
Figure 13: Plug-in cars and light goods vehicles licensed at the end of quarter in Dorset 2011-2019[21]

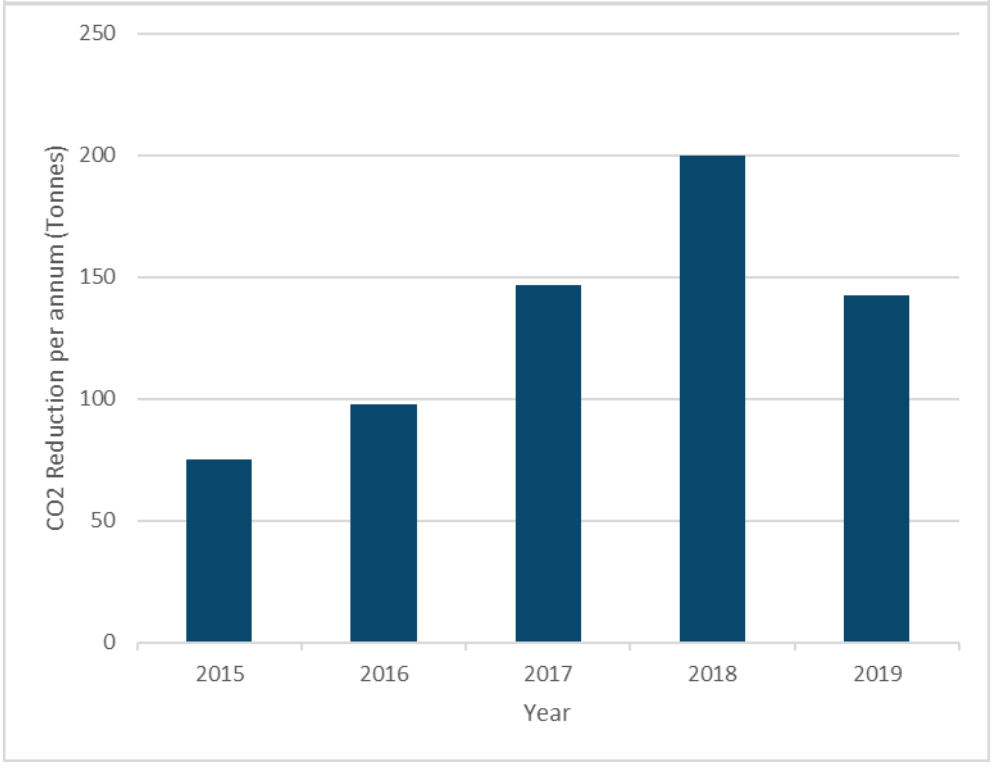


CarshareDorset.com is an area wide car sharing platform provided by liftshare.com. There are currently 4,592 members signed up to car share Dorset, although the number of active members is much smaller. In 2019, Carshare Dorset saved over 48,000 trips being made, saving 725,000 vehicle miles and 142 t CO_2. As a result of car sharing since 2015, a reduction of 662 t CO_2 has been achieved.

Figure 14: CarshareDorset.com Statistics – CO_2 Reduction per Annum

[20] DfT, 2020. Electric Vehicle Charging Device Statistics. http://maps.dft.gov.uk/ev-charging-map/
[21] DfT. 2020. Vehicle Licensing Statistics. https://www.gov.uk/government/collections/vehicles-statistics

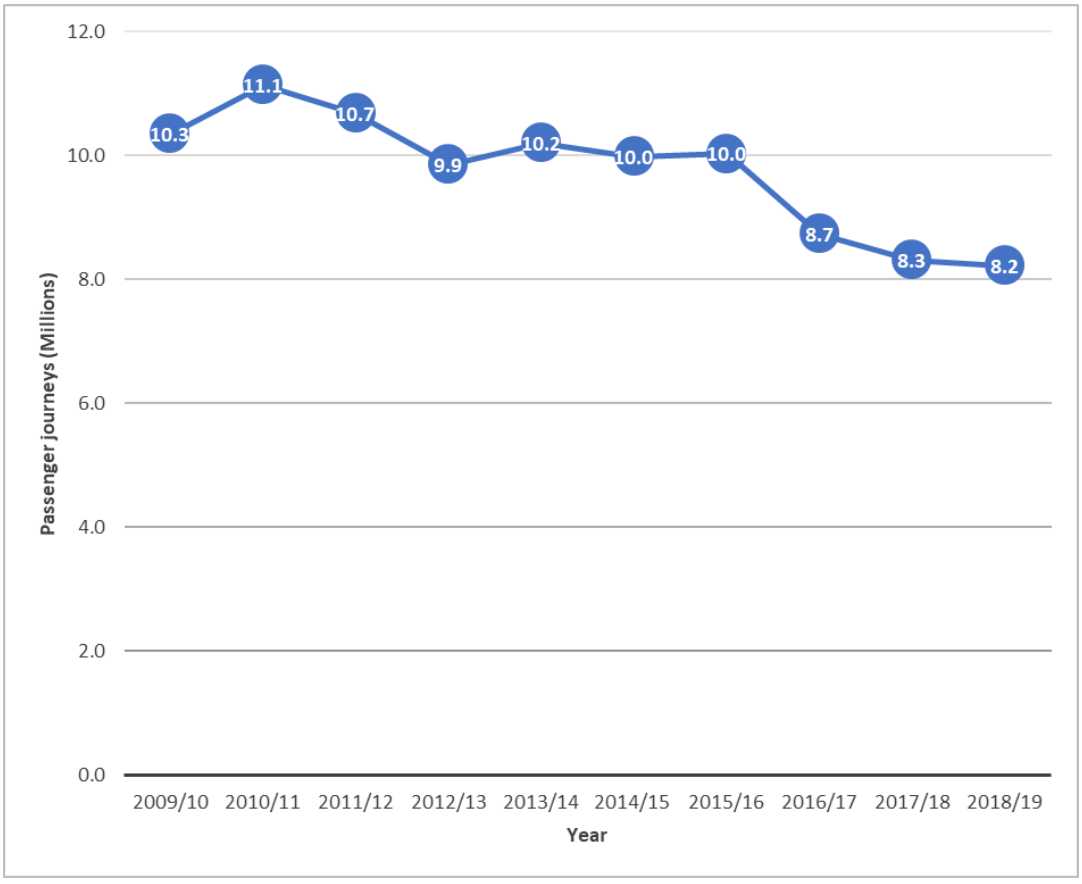




Over the past 10 years, Dorset has seen a significant reduction in passenger journeys on local bus services. There has been a reduction of 2.12 million passenger journeys between 2009/10 to 2018/19, a decrease of 21%. While the general trend in England and the South West region has also been for a reduction in passenger journeys, the decrease in Dorset has been significantly higher than the regional average which only decreased by 8%. The decline in Dorset is partly due to a network restructure driven by a reduction in central government funding for local authority bus services.

Dorset Travel achieved savings of over £2 million by retendering all school and supported public routes using a one school one operator model (OSOO). This also involved much greater integration of schools and public transport services. There were cuts to some rural public services, but spending was refocussed on the core inter-urban network where 80% of journeys take place. The role of community transport was expanded to help fill in the gaps. All changes were created in consultation with Dorset residents.

Figure 15: Passenger journeys on local bus services in Dorset[22]

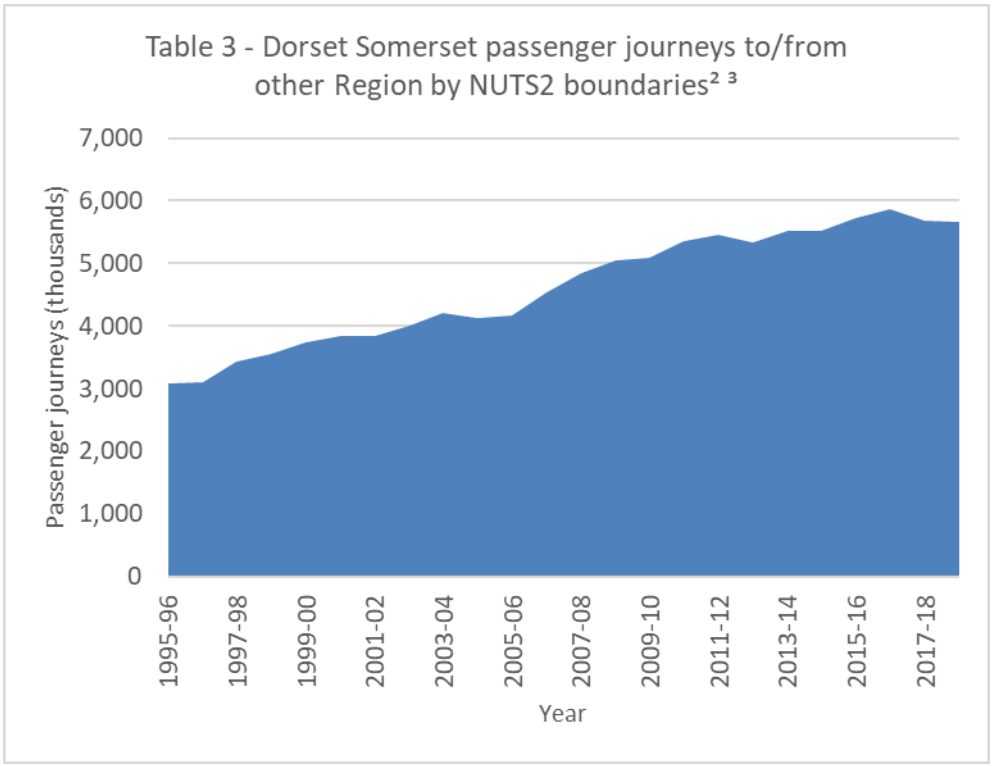


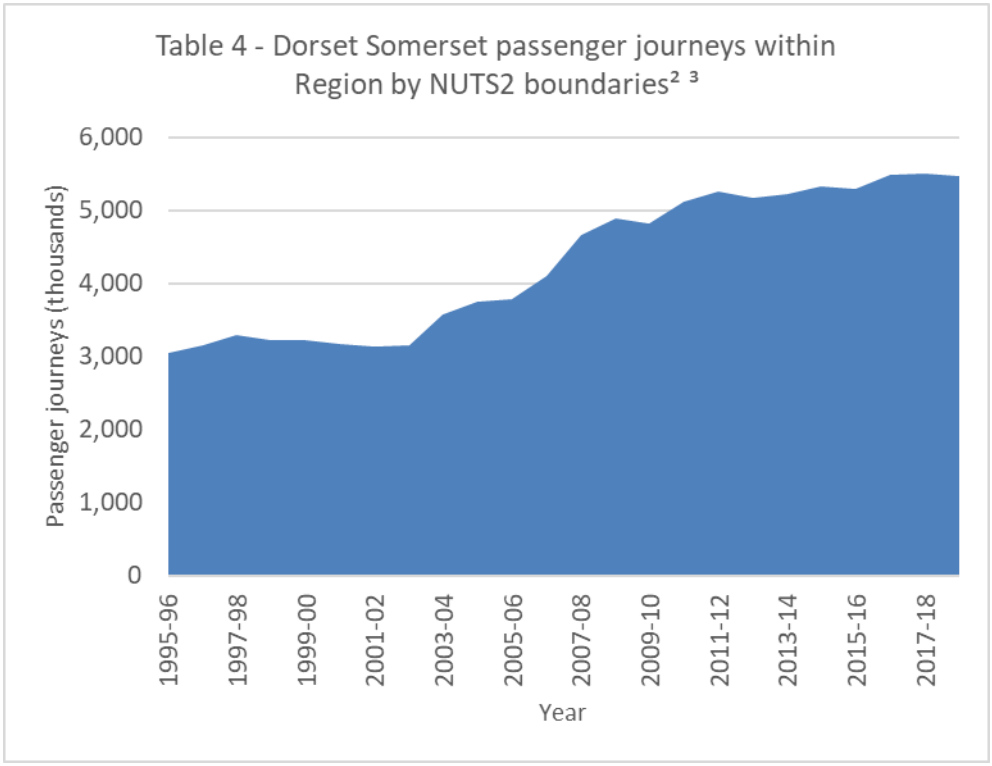
The number of rail journeys to / from and within the Dorset, Somerset[23] area has grown steadily for several years, increasing by an average of between 1.1. – 1.3% per annum.

Figure 16: Dorset, Somerset Rail passenger journeys

[22] DfT. 2019. Bus Statistics. www.gov.uk/government/collections/bus-statistics

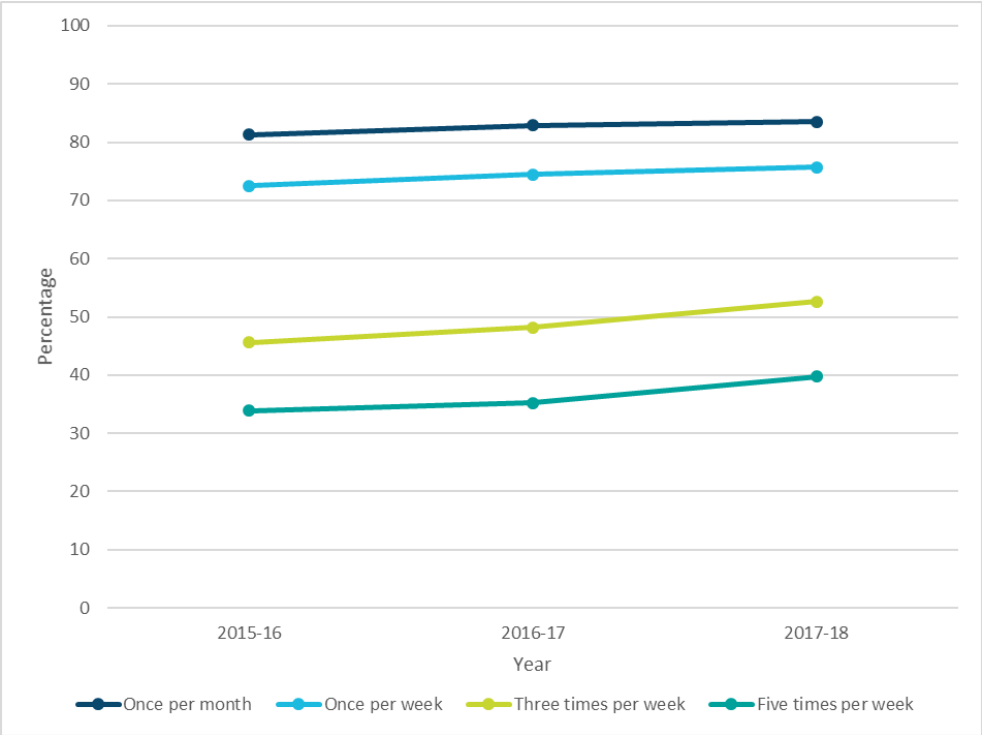
[23] The Office of Rail and Road annual statistics providing passenger journeys data for each Region of Great Britain, including journeys between Regions, and within is only available at the Dorset, Somerset sub area, rather than for the Dorset Council area.





The proportion of adults participating in walking or cycling has increased in recent years. The DfT statistics table CW0301 shows that walking and cycling three times a week has increased by 7% in Dorset, and walking and cycling five times a week has increased by 6%. However, the absolute number of people cycling has shown a slight decline. Work is underway on the production of Local Cycling and Walking Investment Plans that will prioritise a programme of active travel network infrastructure improvements.

Figure 17: Proportion of adults who do any walking or cycling, for any purpose, by frequency in Dorset 2017-2018 [24]



In February 2020, it was announced that a joint bid by Bournemouth, Christchurch, and Poole Council (BCP Council) and Dorset Council had been awarded £79 million by the Department for Transport's Transforming Cities Fund (TCF). The programme will deliver a large sustainable transport network, helping to transform local transport options, and connecting local people and local jobs and education. Working together, the transport partnership will:

- Create a series of local transport corridors with improvements to bus, cycle, and walking routes
- Create a larger and improved network of cycle routes
- See the expansion of a local community bike share scheme
- Enable access to grant funding for businesses and organisations to create workplace facilities, to encourage sustainable commuting
- Look at congestion hotspots to see how they can be reconfigured in order to speed up journey times, decrease time spent in traffic queues, and improve air quality in the locality.

Dorset Council

Opportunities:

[24] DfT. 2019. Walking and Cycling Statistics. https://www.gov.uk/government/collections/walking-and-cycling-statistics

- Use of procurement as a means of reducing carbon emissions
- Existing fleet vehicle replacement programme provides mechanism to electrify the fleet
- An electric pool car fleet to reduce business miles undertaken in staff own vehicles
- Expanding electric vehicle charging capacity across the Dorset Council estate.

The impact our services have on the environment has long been recognised and action is being taken to manage and mitigate these impacts. There are a wide range of current transport carbon reduction initiatives being undertaken, which include, but are not limited to, the activities described in the table below.

Current Dorset Council Carbon Reduction Initiatives

Action		Progress
Network Operations	Environmental impact of contracts	KPI to incentivise desirable behaviours Pass / fail
	Procurement exercises to encourage reduced carbon activities	Qualitative submissions on pollution prevention, vehicle specs, EMS and QMS, accreditations
	Policy, prioritisation, and best practice	Rural road protocol encourages reduced verge maintenance. No conflict with safety.
	Carbon assessment for major projects	Carbon calculations for specific schemes
Fleet	Fleet review	Electric cars and small vans are being sourced for trials across Dorset Council where existing charging points are available. Additional charging point locations are being progressed to expand provision across the estate. Energy Savings Trust completing fleet review and due to report options to reduce carbon emissions and costs.
	Vehicle tracking and telemetry	Telematics across Dorset Council fleet is being monitored for speeding and idling
Public and Schools Transport	Core public transport network	Maintaining business as usual
	Promoting localised transport solutions to school transport	Operated by the schools themselves – reduces dead mileage and cost and improves flexibility
	Promoting cycling and	Delivering the Bike It Programme and Bikeability training

	walking to school	
	Promoting use of cleaner vehicles	Most school buses are euro 6.2 compliant and so are low emission
Street Lighting	Transforming street lighting by replacing existing lanterns with LED bulbs	Ongoing - additional funding being sought
Transport Planning	Delivery of travel planning work internal and through Business Travel Network	Ongoing
	Delivering Electric Vehicle Charging Point Installation Programme	Five public rapid chargers in place. Charging facilities at County Hall, Southwalks House, and Weymouth Office to support existing electric pool cars and staff charging. Feasibility work completed for our public car parks and for our Dorset Council estate sites. Installation of EVCPs in phase one expansion of public network expected in 2020
	Delivering Walking and Cycling Infrastructure	Annual Local Transport Plan programme plus development and other externally funded schemes, including Transforming Cities Fund in south east Dorset
	Supporting Car Share Dorset	778.2 t CO_2 saved since 2010 (Source Liftshare.com)
	Local Transport Plan	Carbon reduction is a key theme, and a performance indicator. However carbon emissions from transport per capita are increasing from 1.95 in 2013 to 2.04 in 2017 (latest available data)
Planning	Local Plan	Adopted Local Plans in the Dorset Council area guide new development and determine planning applications, setting out policies to protect and enhance our natural environment and achieve a sustainable pattern of development. Previously adopted plans remain relevant until the new Dorset Local Plan is adopted in 2023

3. THE FUTURE DIRECTION – SCALE OF THE CHALLENGE

National

Areas for Action

- Lobby the Government e.g. for rail improvements
- Respond to government calls and submit high quality grant applications
- Redirect investment from strategic road schemes to low carbon transport (Work with Subnational Transport Body and Local Enterprise Partnership).

To reach zero carbon, fossil fuel use in the transport sector needs to be eliminated. This is not a simple technical matter of switching to different fuels or energy sources. It requires significant changes in attitudes, planning, and infrastructure, as well as economic incentives and political and institutional changes. Achieving zero carbon will deliver economic, environmental, and improved health benefits, and also help address inequalities.

The Government is currently developing a plan to decarbonise transport. The Transport Decarbonisation Plan (TDP) will set out in detail what the Government, businesses, and society will need to do to deliver the significant reduction of emissions needed across all modes of transport, to achieve net zero emissions across every single mode of transport by 2050. The TDP will take a coordinated, cross-modal approach to deliver the transport sector's contribution to both carbon budgets and net zero. The Government is expected to publish the final TDP in Autumn 2020.

In March 2020, the DfT released its Decarbonising Transport – Setting the Challenge 2020 report. The report establishes six strategic priorities for the TDP, to deliver a vision of a net zero transport system. The six strategic priorities are:

To reduce emissions from transport, low carbon travel must be a genuine, viable, and attractive option. In 2009, the Government agreed a framework for reducing carbon dioxide emissions from new cars, supporting the development, manufacture, and purchase of ultra-low carbon vehicles, promoting sustainable biofuels, electrifying the rail system, and helping drivers make better-informed decisions about the carbon impact of the vehicles they purchase[25].

[25] Low Carbon Transport: A Greener Future, Department of Transport, July 2009

Emissions from transport can also be reduced by:

- Promoting compact urban form to reduce the need to move
- Behaviour change to more active forms of travel
- Reducing the need to travel e.g. homeworking.

Transport networks can be made more resilient to climate change by:

- Increasing choice of modes of travel, to keeping people mobile if one mode is malfunctioning or damaged
- Providing shading for active travel routes (and possibly other routes too)
- Using heat resistant materials for road surfacing
- Identifying infrastructure at risk and take action to increase resilience
- Review drainage maintenance schedule.

Dorset

Areas for Action:

- Prioritise low carbon policies within the refreshed LTP
- Refresh the Low Carbon Travel Strategy to support the main LTP
- Prioritise sustainable development and carbon reduction policies in the new Dorset Local Plan
- Expand and maintain public electric vehicle charging network
- Encourage behaviour change
- Reduce the need to travel.

The Dorset Local Transport Plan 3 2011-26 will be refreshed over the coming year. It is expected that the existing sections on reducing carbon emissions will be further developed and prioritised, acknowledging the increasing awareness and urgency of this issue.

Alongside this will be a refresh of the Low Carbon Travel Strategy, a supporting document to the LTP which sets out the approach to reducing carbon emissions from transport and adapting to climate change.

Dorset Council is preparing a new local plan for the whole area. The new local plan will cover a 15 year period and will need to balance how to grow our population, help our communities thrive, and ensure that we have the skilled workforce to ensure our economy grows, while promoting sustainable development and enabling carbon reduction targets to be met.
The following principles will be enshrined within the plan:

- Ensuring as far as possible that development is located in sustainable locations where key services are nearby and the need to travel by car is reduced. This will be governed by the settlement hierarchy defined for the local plan. Tier one settlements will be the focus for growth, with further growth proposed at the second tier (the main towns). This should manage development in a way that reduces the reliance on car travel and promotes walking, cycling, and public transport use. The policies being developed for the local plan will reinforce this approach.

- Development layouts that provide high quality spaces and routes for pedestrians, cyclists, and other car-free modes, as well as facilities such as EV charging and quality cycle parking. Local plan design policies will seek to promote active travel above car travel. A new policy on electric vehicle charging points will be included in the plan. Another element of this would be ensuring high speed broadband connections to all homes to enable working from home.

- Developments should provide the best quality facilities, or contributions towards facilities, for pedestrians, cyclists, and public transport users to access key services. This will ensure connections from the site to the cycle / foot network.

A significant consumer shift to electric powered private vehicles is anticipated over the coming years. By 2030, it is estimated that up to 25% of cars and LGV's registered in Dorset could be electric. To support the switch to electric vehicles, Dorset Council will need to improve the network of electric vehicle charging points available for the public to use across Dorset.

There is a significant need for home, public, and work chargers required, with equal importance on there being sufficient infrastructure in all three locations. A public network will be vital to support residents without off street charging facilities at home, businesses without changing facilities at their premises, and tourists visiting the area in their electric vehicles.

It is important to have enough coverage of charging infrastructure to prevent range anxiety, but if the number of charging points is too high compared to the number of EVs, there will not be a good business case for the investment.

The Council will not be the only provider of public charging infrastructure. Supermarkets, visitor attractions, and land owners such as the National Trust, will also be delivering their own charging infrastructure. It is therefore important that the Council continues to monitor what investments other providers are making to ensure that overall provision caters for current and future demand, and that any investments made by the Council offers good value for money and are targeted where most needed.

Dorset Council

Areas for Action

- Maximise ultra-low-carbon vehicle replacement within the Dorset Council fleet
- Reduce carbon emissions from transport infrastructure construction and maintenance
- Encourage behavioural change in the way staff commute to work and travel for business
- Reduce the need for staff to travel to and for work
- Provide electric vehicle charging points and other ultra-low emission fuel alternatives across the Council property estate.

Dorset Council has an important role in leading by example and reaching zero carbon from its own activities and public services. Change will be required in the way staff commute to work, as well as changes to workplace practices, fleet operations, and business travel.

Work has begun on a new Dorset Council workplace travel plan 2020-2025. Whilst workplace travel plans exist among the former councils, they have become outdated and no longer reflect the aspirations of the newly formed Council. It is an appropriate time to be rethinking the way we travel, following local government reorganisation. Such factors to consider include the declaration of a climate emergency, along with the aspiration to be carbon neutral by 2030. This is as well as taking advantage of the new technological innovations within the transport and travel sector.

The workplace travel plan will encourage efficient and environmentally friendly methods for travelling to work and at work by implementing measures that significantly reduce the Council's carbon footprint. This will be achieved by changing behaviour and culture, and developing new or improving existing infrastructure and support mechanisms to support behaviour change. The scope of the plan will be the areas which we can influence and have the biggest impact. This includes:

- Grey fleet (business travel)
- Travel to / from work
- Travel in work to carry out the Council's business
- Travel by external suppliers to Council sites
- Infrastructure and facilities associated with workplace travel e.g. parking, pool vehicles, bikes.

A package of measures will be developed and will include:

- Adopting a sustainable travel hierarchy
- Making changes to policies and procedures to encourage sustainable travel
- Incentivising staff to make sustainable travel choices
- Actively encouraging the use of sustainable travel methods, in particular cycling and walking

- Developing and improving the Council's communication infrastructure to further enhance the availability and use of digital solutions (Skype, MS Teams, and other conference call facilities)
- Developing the fleet infrastructure to make business travel by car, where it is absolutely necessary, simple to use and sustainable.

To reduce Dorset Council fleet vehicle emissions, it will be necessary to undertake a vehicle renewal programme to replace the existing fleet with electric or the best possible alternative. This requirement will be built into the five year rolling vehicle replacement programme. With rapidly increasing numbers of electric and other ultra-low emission vehicles on the market, falling purchase costs and increased battery ranges, the replacement of a significant number of vehicles will be increasingly possible.

However, it is important to recognise that at the current time there are not suitable replacement vehicles or cost-effective alternatives available to replace some of the specialist vehicles operated by the Council. Therefore, the replacement of fleet vehicles will need to be staged depending on the type of vehicles and their typical usage, and the availability of electric or other ultra-low emission alternatives.

The decarbonisation of the Council fleet of 700 plus vehicles will require increased provision of electric vehicle charging points and possible provision of other ultra-low emission fuel alternatives across the Council property estate. This will include office and depot locations. As the fleet vehicle replacement programme progresses, it will be necessary to closely monitor the need for additional charging points to keep pace with demand and furthermore expand provision accordingly.

4. KEY ISSUES

National

- Lack of national direction and strategy, although this will improve with the publication of the decarbonisation plan and bus strategy.

Dorset

- Inherited infrastructure network built around private vehicle usage, which has led to the car being the first choice of travel
- Culture of commuting to work with car being the default mode of travel
- School choice contributes to transport issues
- Rural nature of parts of Dorset means that accessing employment, training, and other essential services requires increased travel
- Quality of digital infrastructure in rural areas to support home working, online learning, and e-commerce

- Low carbon active travel infrastructure not sufficiently developed to complete area wide networks
- Lack of funding to upgrade bus infrastructure and support rural services
- Lack of service frequency on some rail corridors, not suitable for commuting.

Dorset Council

- Conflicting demands on limited financial resources and priorities with other council areas of work
- Need to change the way Dorset Council operations and services are considered and procured.

5. OPPORTUNITIES

Dorset

- Responding to opportunities at a National level
- To secure additional funding from central government (Better deal for buses funding, EV charging, active travel)
- Further embed the transition required to meet the Climate and Ecological emergency within statutory planning documents including the Local Plan and LTP
- Capitalise on private sector investment to expand the public electric vehicle charging network
- Current strong partnerships working across Dorset and BCP
- Build upon TCF programme in South East Dorset
- COVID-19 – lock in increased active travel to sustain lasting behaviour change.

Dorset Council

- To lead by example
- COVID-19 – showing what can be done with home working / testing technology
- Greening the Council fleet utilising replacement programme to transition to ULEVs
- To embed sustainable travel practices within the way we work as an organisation
- Review of procurement procedures

These opportunities could provide a range of additional benefits such as:

- Economic benefits including reduced costs of car travel to society, including road casualties, air pollution, and noise, as well as the investment in zero carbon will also create jobs in the green economy
- Reduced air pollution from transport
- Increased health benefits from active travel with resulting impacts on wellbeing.

6. OBJECTIVES

National

- Influence national government to secure additional funding.

Dorset

- Improve low carbon transport infrastructure
- Encourage decarbonisation of road transport
- Encourage travel behaviour change
- Reduce the need to travel
- Increase climate resilience of transport infrastructure.

Dorset Council

- To lead by example
- To green the Council fleet
- To challenge business as usual

Case Study 1: Greener Highways in 2020

Dorset's highway fixers are back in action and now producing 15% less emissions.

For the first time, this year will see Dorset Council using low energy asphalt (LEA) on all resurfacing schemes, and as a surface course on new construction projects such as cycleways.

The material is produced 30 to 40 degrees lower than conventional material, which is usually produced at 180 degrees. This reduced heat results in 15% less carbon emissions during the production process.

Although widely used in America and France, low energy asphalt is much less common in the UK.

Councillor Ray Bryan, Portfolio Holder for Highways, Travel and Environment, said:

"Following two successful resurfacing schemes trialing LEA here in Dorset, we've been very keen for mass-production of the material at the regional quarry, Whatley. While working closely with our private sector partner Hanson UK, this has become a reality. The quality of the lower energy material is not affected, it helps reduce our carbon footprint, and it's actually easier to keep at temperature during transport due to the lower production temperature."

Dorset Highways currently uses LEA in the lower and middle layers (base and binder) of road construction, with these containing 30% recycled material. From July, low energy material will also be used for the top layer too. To find out more, please click on the link to the left.

Case Study 2: Electric Pool Cars

On average, Dorset Council pool cars undertake approximately 5,000 – 6000 miles per annum. The standard diesel pool cars are estimated to produce 1.4 – 1.7 t CO_2 per annum per vehicle.

As part of the Dorset Council pool vehicle fleet, staff have access to three electric cars bookable for business travel. Introduced in 201, the three Nissan Leaf's have been based at sites in Dorchester. Electric vehicles produce no carbon emissions in use, but unless the electricity to recharge them comes from renewable sources, electric vehicle use is still associated with a degree of carbon production.

Compared to a standard diesel pool car travelling 5000 – 6000 miles, an electric pool car produces an estimated 0.5-0.6 t CO_2 per annum. The three electric pool cars are estimated to save up to 3.3 t CO_2 per annum and therefore in total are estimated to have saved up to 10.5 t CO_2 since 2013. There are opportunities to reduce carbon further by using only renewable energy sources of electricity and by increasing the number of electric pool cars within the fleet.