Submission to:
Cambridgeshire & Peterborough Combined Authority

Comments re:
CPCA Local Transport Plan (2019)

Isabela Butnar
Tony Eva
Abhishek Shivakumar

September 2019

CNC Carbon Neutral Cambridge

Table of Contents

Executive Summary

The CPCA's Local Transport Plan (LTP) 2019 is the latest in a series of LTPs for the region. Reducing congestion and improving commuting remain the focus and it pays no more than lip service to the challenge of reducing carbon dioxide (CO_2) emissions from transport. Were it to do so it would recognise that all vehicles and all journey types contribute towards transport emissions. This in turn would encourage a less narrow approach than the one it has chosen.

The UK government passed an amendment to the *Climate Change Act 2008* in June this year which requires the UK to bring all greenhouse gases (GHGs) to net zero by 2050. It is best practise, and we believe a legal obligation, to demonstrate that LTPs are consistent with national legislation. No attempt has been made by the CPCA to demonstrate that their LTP is compatible with the *Climate Change Act 2008 (2050 Target Amendment) Order 2019,* which in itself is a serious shortcoming.

Historical transport emissions in the CPCA provide an important window into how past policy decisions have translated into changes in emissions. The contribution of the transport sector to the total CPCA CO_2 emissions increased from 32% in 2005 to 42% in 2017. Per capita transport emissions in the CPCA grew by 9% between 2012 and 2017, whilst over the same period those for England rose by 0.8%. These should have been wake-up calls for officers and planners involved with the LTP to look much more closely at how best to tackle CO_2 emissions from transport.

Since the LTP does not imodel future transport CO_2 emissions in the CPCA, we have been forced to made our own estimates. This work has been hindered by the vagueness of many proposed projects. There are few quantifiable targets and none that are directly related to emissions of CO_2.

Our analysis suggests that under the CPCA's LTP, road transport CO_2 emissions will continue to rise until ca. 2024 and won't drop below 2017 levels until 2029. Even under arguably optimistic assumptions (modest population growth; rapid grid decarbonisation; rapid expansion of e-vehicles availability and take-up; no delay to CAM Metro project) emissions from private cars precludes rapid road transport decarbonisation.

Our analysis indicates that petrol and diesel cars currently account for 96% of CO_2 emissions associated with passenger road transport in the CPCA. There needs to be a rapid modal shift away from ICE cars to active and public transport. We have developed our own scenario based partly on private cars being one third of their current number by 2030.

We suggest that this could be brought about by instigating:

- Car-free metropolitan areas by 2025
- No new road building or expansions
- No new Park & Ride facilities and phase-out of existing Park & Ride
- Rapid phase-out of city centre car parks
- Workplace levy
- Removal of all on-street parking

Such a dramatic reduction in car numbers and parked cars would free-up considerable roadspace. This would allow much more frequent bus services and a limited amount of new light rail systems to be installed. Together with a more extensive network of Greenways for active travel, these measures would negate the necessity of the CAM Metro scheme.

We are also calling on the CPCA to give much greater attention to emissions from freight. There needs to be a rapid and widespread introduction of new infrastructure such as Greenways, and urban consolidation centres.

Finally we recognise that achieving this level of change will require bold and radical action. Yet against the background of a climate emergency, isn't this preferable to the incremental greenwash nonsense that characterises this and previous LTPs?

1. Introduction

1.1 This report has been prepared by Carbon Neutral Cambridge (CNC) as our formal response to the Cambridgeshire & Peterborough Combined Authority (CPCA) Local Transport Plan (LTP) consultation[1].

1.2 Carbon Neutral Cambridge (CNC) is an unincorporated association and a membership organisation[2].

1.3 Our work has focused on the extent to which the LTP will reduce Greenhouse Gas (GHG) emissions in line with (1) the UK Net Zero Target[3] and (2) the stated climate and GHG reduction objectives of constituent councils.

1.4 In a recent report[4] the Royal Town Planning Institute noted that *"nothing should be planned without having successfully demonstrated that it is fit to take its place in a net-zero emissions future"*. The absence of quantitative modelling of GHG emissions in the CPCA's LTP means that no such demonstration has been made.

1.5 Hopkinson and Sloman (2019)[5] have suggested that all transport strategies should be subject to a carbon test. This would check *"(a) whether they include a carbon reduction target and pathway and (b) whether their carbon impacts have been audited to confirm they are consistent with this target and pathway."*

2. Local Transport Plans

2.1 The UK Government has issued "Guidance on Local Transport Plans"[6]. It makes clear that among the purposes of Local Transport Plans (LTPs) are to:

- Explain the problems and challenges
- Describe and appraise the various options to address these challenges
- Select the preferred options and explain how the strategy will be delivered.

The UK Government document also makes clear that LTPs carry certain statutory duties. Outside of statutory obligations It is also recommends that LTPs should follow certain elements of good practise.

2.2 The first Local Transport Plan for Cambridgeshire ("LTP1") was issued in 1999. This was followed by LTP2[7] in 2005 and LTP3 in 2011[8]. A revision of LTP3 was made in 2015 which we will refer to as LTP3A[9].

2.3 LTP Indicator AQ1 in LTP2 says *"Target: CO_2 equivalent emissions from road transport in Cambridgeshire to be no more than 1.747Mt in 2010."* The actual transport emissions for Cambridgeshire in 2010 were 1.84 Mt.

2.4 LTP3 stated *"we will reduce carbon dioxide emissions through a programme of smarter choices measures, improvements to sustainable travel options and the management of car use."* Between LTP3 publication (2011) and 2017, Cambridgeshire's transport emissions rose by 12%.

2.5 LTP3A has a target for Cambridgeshire's *"carbon dioxide emissions from road transport to drop by 20.1% in 2020"*. The transport emissions predicted for 2017 (1.625Mt) were exceeded by 25%. This is illustrated in Figure 2.1.

---

1 Local Transport Plan. https://www.cambridgeshirepeterborough-ca.gov.uk/about-us/programmes/transport/ltp/

2 https://carbonneutralcambridge.org/

3 Climate Change Act 2008 (2050 Target Amendment) Order 2019. https://www.legislation.gov.uk/ukdsi/2019/9780111187654/pdfs/ukdsi_9780111187654_en.pdf

4 "Planning for a smart energy future" https://www.rtpi.org.uk/media/3410158/smart_energy_future_report.pdf

5 https://policy.friendsoftheearth.uk/insight/getting-department-transport-right-track

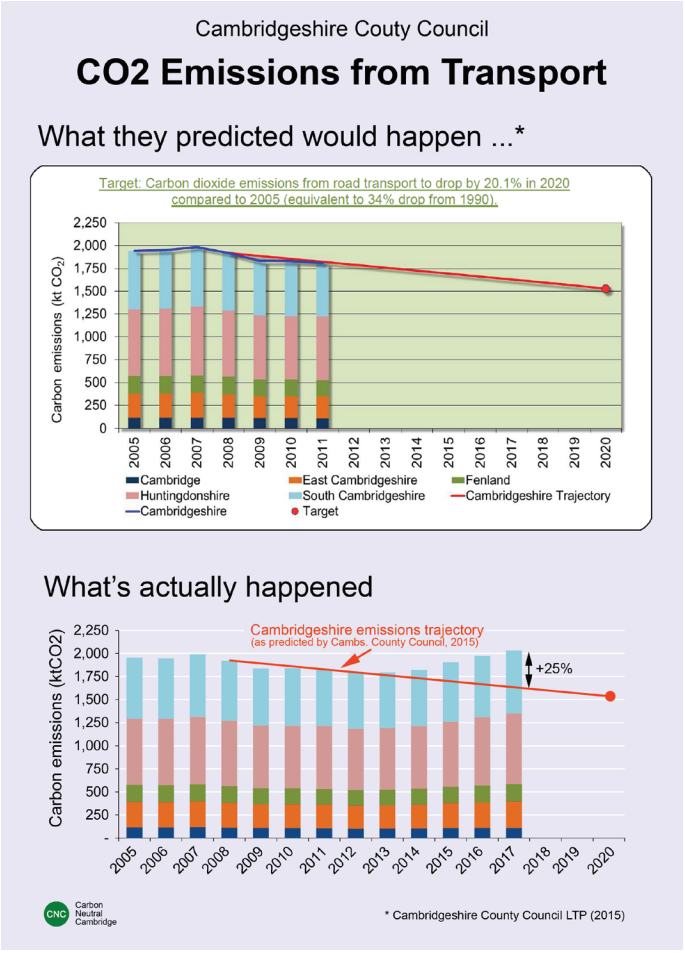
6 https://webarchive.nationalarchives.gov.uk/20110505104156/http://www.dft.gov.uk/adobepdf/165237/ltp-guidance.pdf

7 https://uk-air.defra.gov.uk/assets/documents/no2ten/Local_zone29_Cambridge_AQActionplan_1.pdf

8 https://files.cambridge.gov.uk/public/ldf/coredocs/RD-T/RD-T-090.pdf

9 https://www.eastcambs.gov.uk/sites/default/files/PE29%20Local%20Transport%20Plan%203.pdf

Figure 2.1: A comparison between the targeted CO_2 emissions from transport in Cambridgeshire as given in LTP3A and the emissions that have occurred up until 2017.



2.6 With respect to tackling climate change by reducing CO_2 emissions, Cambridgeshire LTPs to date have been abject failures. This ought to place extra responsibility on the CPCA to carefully demonstrate that the required CO_2 reductions will be delivered.

3. What the CPCA's LTP says about CO2 emissions

3.1 There are no carbon reduction targets or pathways in the CPCA's LTP, which is a serious omission. They state that metrics (undefined) for transport carbon emissions will be identified *"over the next few months"*.

3.2 The CPCA's LTP uses the same exact phrase *"Reduce emissions to as close to zero as possible to minimise the impact of transport and travel on climate change"* on 17 occasions. It even appears under the heading of "Wider Regional Objectives" with a timescale of pre-2021[10].

3.3 If and when the CPCA develops carbon reduction targets and pathways for their LTP, they will need to ensure that they are consistent with national and local legislation and objectives.

4. National Objectives & Legislation

4.1 On 1st May 2019 the UK government passed a motion declaring an environment and climate emergency.

4.2 On 12th June 2019 the UK government laid the draft *Climate Change Act 2008 (2050 Target Amendment) Order 2019*[11]. This was debated by both houses and came into force on 27th June 2019.

4.3 The main effect of the amendment was to commit the UK to net zero emissions by 2050. This was in line with advise the government received from the UK Committee on Climate Change (CCC).

4.4 There is an obligation on the part of local authorities to ensure that they put in place robust measures which are consistent with the UK government's new net zero legislation.

4.5 The Town and Country Planning Association (TCPA) has noted that local government needs to demonstrate how local plans contribute to meeting national targets set by the Climate Change Act[12].

10 CPCA Local Transport Plan (2019) p.159
11 https://www.legislation.gov.uk/ukdsi/2019/9780111187654/pdfs/ukdsi_9780111187654_en.pdf
12 TCPA (2018) Rising to the Climate Crisis: A Guide for Local Authorities on Planning for Climate Change. https://www.tcpa.org.uk/Handlers/Download.ashx?IDMF=fd66dbe5-2b88-4acf-b927-256a82db9abe

5. Local Objectives

5.1 South Cambridgeshire District Council announced on 29 Nov 2018 that the region should transition to zero carbon by 2050[13]. They declared a climate emergency on 23 Sept 2019.

5.2 On 21st February 2019 Cambridge City Council declared a climate emergency. The city council has the aspiration that Cambridge should reach net zero carbon by 2030[14].

5.3 St Neots Town Council declared a climate emergency on 26th February 2019 and resolved to work towards becoming carbon-neutral by 2030[15].

5.4 The Greater Cambridge Partnership acknowledged on 27 June 2019 that climate change is a key consideration in strategy development, "alongside tackling congestion"[16].

5.5 Peterborough City Council declared a climate emergency on 24th July 2019 and pledged that the council's activities would be net zero carbon by 2030[17].

5.6 Cambridgeshire County Council has committed to having officers produce a climate change and environmental report before December 2019. Cllr Steve Count (Leader, Cambridgeshire County Council) has said that he expects Cambridgeshire County Council "to adopt a net zero target of well before 2050"[18].

13 "Climate Emergency" as Council aims to make South Cambridgeshire zero carbon. https://www.scambs.gov.uk/climate-emergency-as-council-aims-to-make-south-cambridgeshire-zero-carbon/

14 Cambridge City Council declares a climate emergency. https://www.cambridge.gov.uk/news/2019/02/22/cambridge-city-council-declares-climate-emergency

15 https://www.stneots-tc.gov.uk/download/minutes-town-council/Town-Council-2019-02-26-Minutes-APPROVED.pdf

16 Greater Cambridge Partnership Executive Board Meeting, 27 June 2019.

17 Peterborough declares a climate emergency and commits to urgent action. https://www.peterborough.gov.uk/news/council/peterborough-declares-a-climate-emergency-and-commits-to-urgent-action/

18 Speech by Cllr Steve Count at Cleantech Futures, 10 July 2019.

6. CO2 Emission Trends in the CPCA

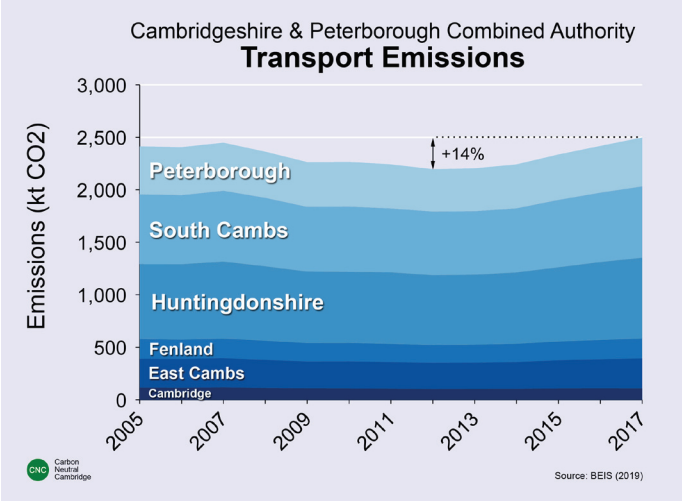
6.1 Carbon Dioxide (CO_2) emissions data by sector and by Local Authority is published annually by the UK Department of Business, Energy and Industrial Strategy (BEIS)[19]. These data are currently available for the period from 2005-2017. We have used these datasets to analyse emission trends in the CPCA. An overview of CO_2 emissions trends within the CPCA is shown in Figure 6.1.

6.2 Key points to note from Figure 6.1 include:

- CO_2 emissions from the Industry & Commercial and Domestic sectors have declined from 2005-2017 in each of the Local Authorities of the CPCA.
- By contrast, CO_2 emissions associated with transport have increased in each of the Local Authorities[20].
- The contribution of the transport sector to the total CPCA CO_2 emissions increased from 32% in 2005 to 42% in 2017.
- The transport sector is now the largest CO_2 emitting sector in the CPCA.

6.3 Transport emissions by Local Authority are shown in more detail in Figure 6.2.

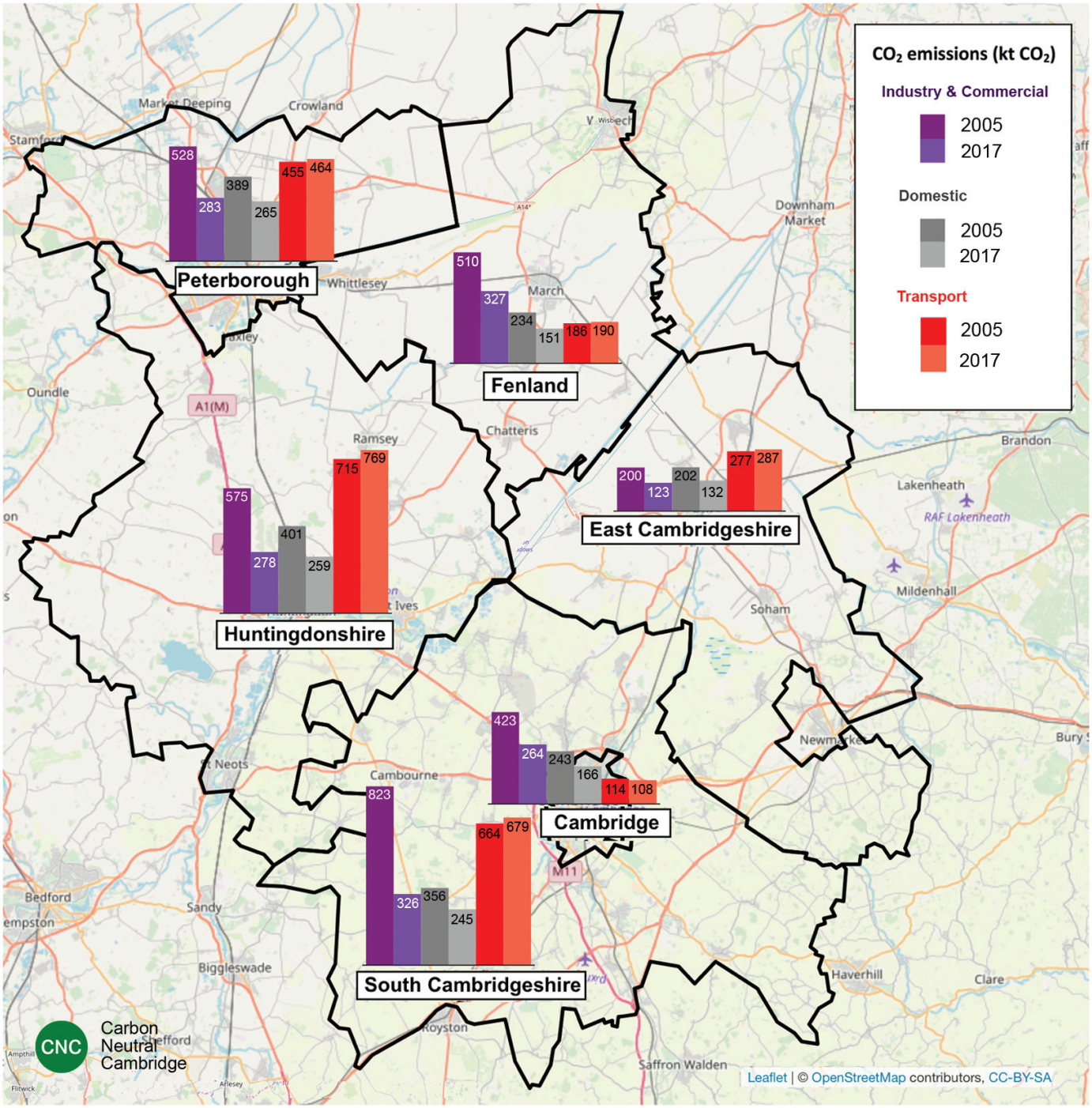
Figure 6.2: Transport Emissions in CPCA.



19 https://data.gov.uk/dataset/723c243d-2f1a-4d27-8b61-cdb93e5b10ff/emissions-of-carbon-dioxide-for-local-authority-areas

20 Cambridge City is an exception, but shows only a very small decrease.

Figure 6.1: Overview of CO_2 emissions by sector in the CPCA for the period 2005-2017.



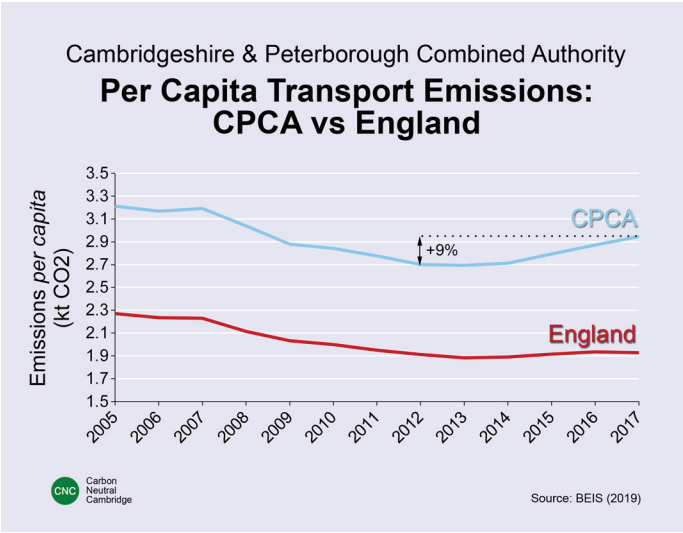
6.4 The main contributors to transport emissions within the CPCA are Huntingdonshire and South Cambridgeshire. Cambridge has the lowest transport emissions.

6.5 Figure 6.2 shows that after a period of declining transport emissions from 2007-2012, there has subsequently been a steep rise in transport emissions within the CPCA.

6.6 From 2012-2017 CO_2 emissions from transport rose by 14% within the CPCA. During this period emissions rose in every constituent local authority of the CPCA.

6.7 Transport emissions per capita for the CPCA and for England are shown in Figure 6.3.

Figure 6.3 Transport emissions per capita for the CPCA and for England

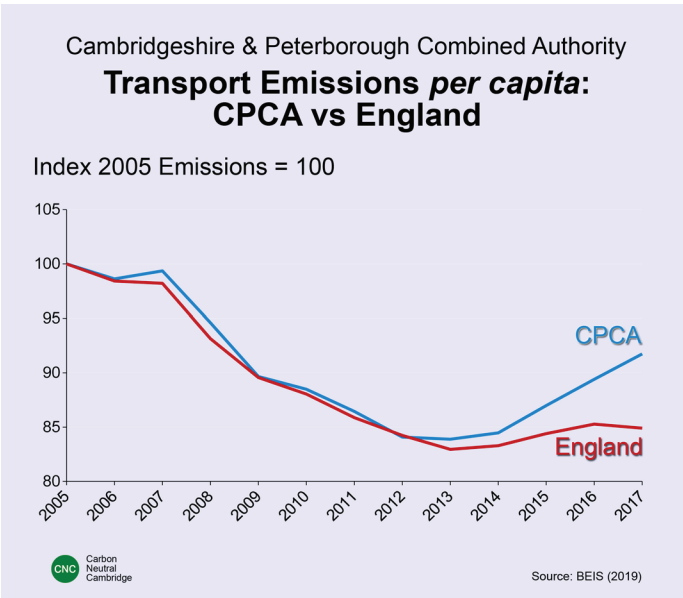


6.8 From Figure 6.3 it can be seen that:

- Per capita CO_2 transport emissions for the CPCA are significantly higher than the average for England.
- Per capita transport emissions in the CPCA grew by 9% between 2012 and 2017. Over the same period those for England rose by 0.8%.

6.9 The same per capita data has been reindexed to create Figure 6.4. The rapidly growing per capita transport emissions trend since 2012 should be a major concern for CPCA transport planners.

Figure 6.4 Reindexed per capita emissions

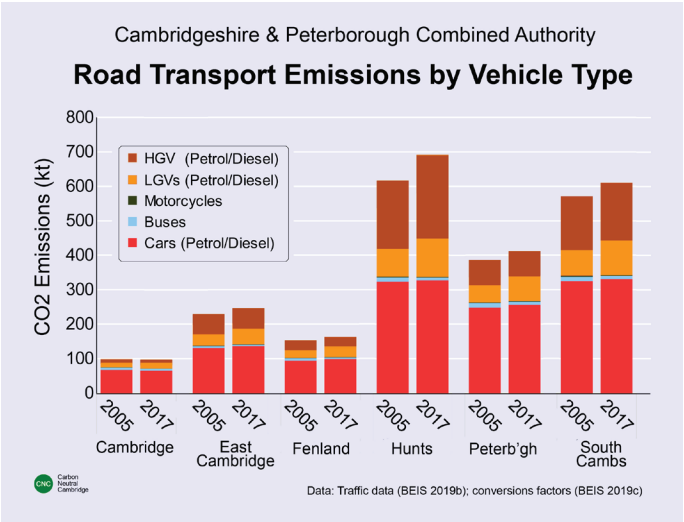


7. Road Transport CO_2 Emissions in the CPCA by Vehicle Type

7.1 There is a need to understand the size of CO_2 emissions by road vehicle type across the CPCA in order to best design targeted mitigation measures. We are not aware of any such analysis having been published previously.

7.2 The Department for Business Energy and Industry (BEIS) publishes consumption statistics on fuels used for road transport[21]. This includes annual data by local authority for the period from 2005-2017. Using greenhouse gas conversion factors recommended by BEIS[22], we have converted fuel consumption data into CO_2 emissions.

Figure 7.1: CO_2 emissions by road vehicle type and by local authorities within the CPCA



7.3 The results of this analysis are shown on Figure 7.1. This shows that

- Road transport CO_2 emissions in the CPCA are currently ca. 55% from passenger and 45% from freight traffic.
- In 2017, 96% of CO_2 emissions associated with passenger road transport in the CPCA was from petrol and diesel cars

21 https://www.gov.uk/government/statistical-data-sets/road-transport-energy-consumption-at-regional-and-local-authority-level

22 https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2019

- Between 2005-2017, CO_2 emissions from cars increased slightly in every local authority of the CPCA[23].
- CO_2 emissions associated with freight are increasing more rapidly than those due to passenger traffic.
- While LTPs in our region have traditionally focused on passenger movement, from a carbon reduction perspective equal attention needs to be given to freight.

8. Assumptions for Modelling Future Road Transport Emissions under the CPCA's LTP

In order to model the CPCA's future road transport emissions we have had to make numerical assessments based on the CPCA's LTP. We should stress at the outset that this work has been made difficult by he LTP being weak on specific project details, including timescales.

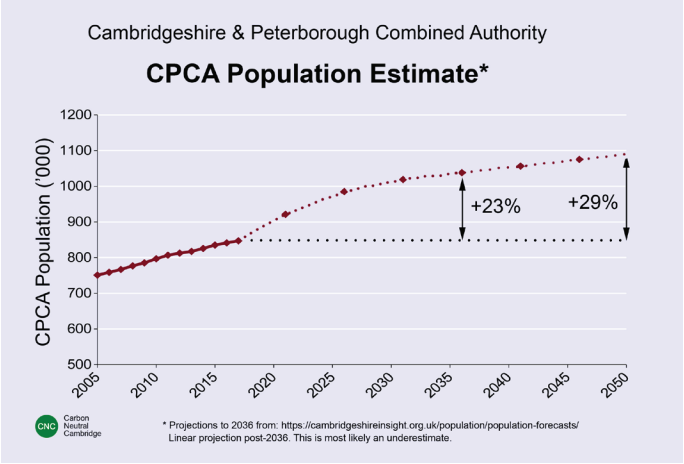
8.1 Population

8.1.1 The population of the CPCA in 2017 was 847,000. The CPCA in their LTP rely on projections made by Cambridgeshire Insights (see LTP Appendix D[24]). These forecasts suggest that the CPCA population will rise to 1,040,000 by 2036.

8.1.2 We are concerned that these projections could significantly underestimate the increase in population. For example, Cambridge Insights suggest that South Cambridgeshire will see an increase of 43,800 (156,700 to 200,500) between 2017 and 2036. However planned developments at Waterbeach New Town, Northstowe, Bourn Airfield, West Cambourne and the Genome Wellcome Campus are expected to add ca. 70,000 to the South Cambridgeshire population. Similarly Cambridge is projected to increase by 32,900 (from 124,900 in 2017 to 157,800 in 2036) in the LTP whereas developments at Cambridge Northern Fringe East, Darwin Green, Eddington Phase 2 and others could see the Cambridge population swell by 41,000 in this timeframe.

8.1.3 To maintain consistency we have utilised the same population projection estimates developed by Cambridgeshire Insights and used in the LTP. Their population projections currently end at 2036. We have extended these to 2050 by simple extrapolation. The results are illustrated in Figure 8.1. We are aware that additional population increases would make reducing transport emissions even more challenging.

Figure 8.1: Projected population of the CPCA.



8.2 Takeup of Electric Vehicles & Decarbonisation of the Grid

8.2.1 We have modelled to uptake of EVs as per the *Community Renewables* scenario of the National Grid[25] (75% of vehicles are electric by 2035 and by 2050 all cars are electric).

8.2.2 For the decarbonisation of the grid we have utilised the rates of decarbonisation listed in the Committee on Climate Change's 2018 *Progress Report to Parliament*[26], which were also used in their 2019 *Net Zero*[27] report.

23 With the exception of Cambridge which had a small decrease

24 https://cambridgeshirepeterborough-ca.gov.uk/assets/Transport/Appendix-D-Baseline-Review-rev-B.pdf

25 https://www.nationalgrideso.com/insights/future-energy-scenarios-fes

26 https://www.theccc.org.uk/publication/reducing-uk-emissions-2018-progress-report-to-parliament/

27 https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-The-UKs-contribution-to-stopping-global-warming.pdf

8.3 Car Demand

8.3.1 The only significant measure included in the LTP that would limit car demand is the Cambridge Rapid Mass Transit (see section 8.4).

8.3.2 The CPCA's LTP envisages a number of new road building schemes (e.g. Dualling the A10; Oxford to Cambridge Expressway). They are also proposing new Park & Ride sites. Each of these would be expected to increase car usage, but we have not attempted to model this effect.

8.4 Cambridge Rapid Mass Transit

8.4.1 We have taken at face value the forecasts of project completion (2031) and passenger numbers contained within the CAM Business Case report (2019).[28]

8.4.3 We are aware that major transport infrastructure projects such as the proposed CAM are often delayed and scaled back in scope (e.g. Edinburgh tram system[29]). Were this to happen, reducing CO_2 transport emissions would be delayed and the total emissions would be greater.

8.5. Road freight

8.5.1 Road freight traffic currently contributes 45% of the total road transport CO_2 emissions in the CPCA. There is no detail in the LTP of specific measures targeted at reducing emissions from LGVs and HGVs. Instead there is simply a mention of improving the logistics of HGVs and "promoting rail freight".

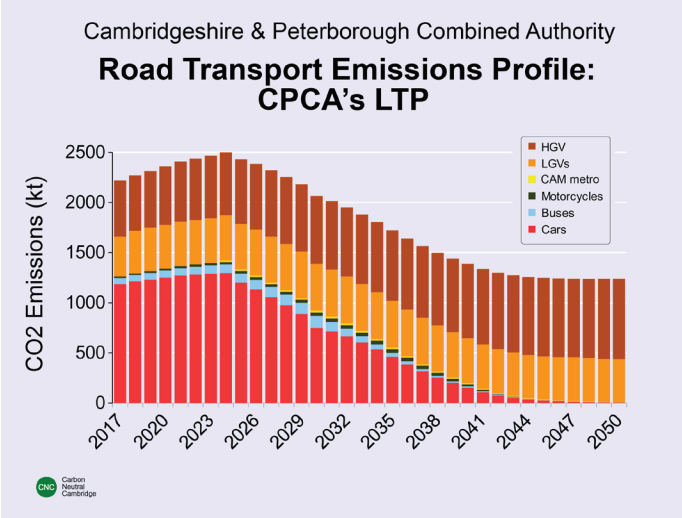
8.5.2 In the absence of targeted policy, we would expect emissions from LGVs to stay roughly constant (increased LGV traffic being compensated for by increased efficiency). HGV emissions would be expected to slowly increase due to an expected increase in freight demand overriding increases in efficiency.

28 https://cambridgeshirepeterborough-ca.gov.uk/assets/Uploads/CAM-SOBC-v2.1.pdf

29 https://www.theguardian.com/uk-news/2014/jun/01/edinburgh-tram-system-opens

9. Results from Modelling CO_2 Road Transport Emissions under the CPCA's LTP Scenario

Figure 9.1: Road Transport CO_2 emissions in the CPCA region under the CPCA's LTP scenario.



9.1 The modelling results for the CPCA's LTP scenario is shown in Figure 9.1. Some key points to note include

- Road transport CO_2 emissions continue to rise until 2024 and don't drop below 2017 levels until 2028..
- The emissions rise until 2024 is due to a combination of (a) population growth, (b) absence of significant measures to curb car usage until the arrival of CAM Phase 1, and (c) current low levels of EV vehicle penetration.
- The drop in transport emissions post-2024 is partly due to the arrival of the CAM, but also due to national policies which phase out ICE vehicles and increasingly decarbonise the electricity supply.
- Our modelling suggests that, with respect to transport emissions, the CPCA will be well short of meeting national and local 2050 targets. This is due in large part to an absence of policy initiatives which address freight emissions.

- Even under our arguably optimistic assumptions (modest population growth; rapid grid decarbonisation; rapid expansion of e-vehicles availability and take-up; no delay to CAM Metro project) emissions from cars precludes rapid road transport decarbonisation.

10. Assumptions for Modelling CO_2 Road Transport Emissions under the CNC Scenario

10.1 Population

We have made the same population assumptions as used for the CPCA Scenario (Section 8.1)

10.2 Takeup of Electric Vehicles & Decarbonisation of the Grid

We have made the same assumptions as used for the CPCA Scenario (Section 10.2)

10.3 Car Demand

10.3.1 A rapid reduction in road transport emissions requires there to be a rapid modal shift away from ICE cars to active and public transport. We have based our scenario on private cars being one third of their current number by 2030.

10.3.2 Achieving this level of change will require bold and radical action. We believe it could be brought about by instigating:

- Car-free metropolitan areas by 2025 (Cambridge, Peterborough, Ely, Huntingdon, St Neots)
- No new road building or expansions
- No new Park & Ride facilities and phase-out of existing Park & Ride
- Rapid phase-out of city centre car parks
- Workplace levy
- Removal of all on-street parking

10.3.3 A dramatic reduction in car numbers would allow roadspace for a greatly increased bus service (four times current numbers by 2030) to operate efficiently. This would negate the necessity of the CAM Metro scheme.

10.3.4 Some of the shift away from private cars needs to be taken up by active travel, especially e-bikes. Our modelling assumes that current mileage by bicycles / e-bikes across the CPCA doubles by 2025 and doubles again by 2030. Achieving these targets would require a massive expansion of the Greenways project[30] to be extended throughout the CPCA.

10.3.5 An expansion of the Greenways project would also greatly facilitate the use of next generation electric cargo bikes such as those being trialled by Royal Mail[31].

10.4 Rapid Mass Transit

10.4.1 The removal of on-street parking from metropolitan areas would allow space for proven light rail systems to be installed. This would not need to be as extensive (in the Greater Cambridge region) as that envisaged by Cambridge Connect[32]. Light rail should also link station(s), business/shopping centres and dense housing in Peterborough and Huntingdon.

10.5 Light Goods Deliveries

10.5.1 We have assumed that by 2030, all new vans in the CPCA will be electric, resulting in an entirely electric fleet by 2040. This is slightly more ambitious than figures used the Committee on Climate Change for the entire country in their *Net Zero*[33] report.

10.5.2 We include the use of large electric cargo bikes, based on the rollout of the Greenways project to all metropolitan areas of the CPCA.

30 https://www.greatercambridge.org.uk/transport/transport-projects/greenways/

31 https://www.bikebiz.com/royal-mail-to-trial-e-trikes-for-letter-and-parcel-deliveries/

32 http://www.cambridge-connect.uk/

33 https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-The-UKs-contribution-to-stopping-global-warming.pdf

10.5.3 We would like to see Urban Consolidation Centres introduced on the periphery of all metropolitan regions of the CPCA. These could dramatically reduce the number of freight trips in metropolitan areas and make an easier transition to greener local distribution.

10.5.4 Additionally we would like to see the CPCA urgently investigate the viability of (a) "Logistics Hotels" where local authorities work with industrial partners and business to create multi-user logistics depots in central urban areas; (b) "mobile city hubs" and "micro-consolidation centres" where smaller couriers collect their parcels from mobile hubs and then make deliveries using bicycles, or on foot[34].

10.6 Heavy Goods Deliveries

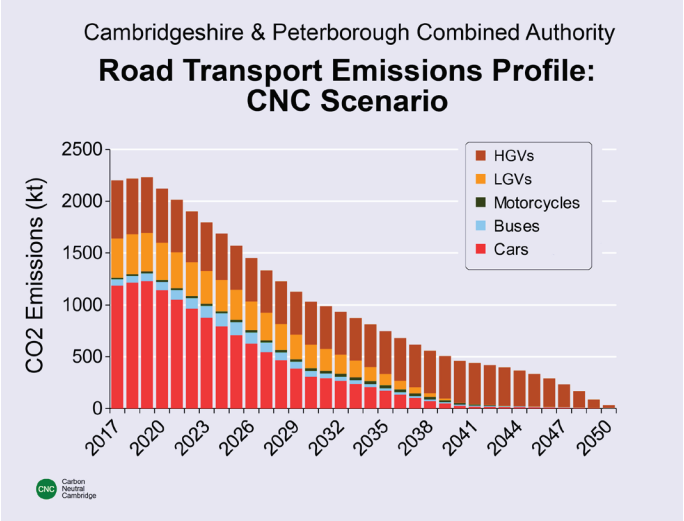
10.6.1 We recognise that the transition to low or zero carbon is more difficult for HGVs than for LGVs. We have modelled a 20% shift of HGV deliveries to rail / light rail by 2030 based on the provision of new distribution centres, better connections to the rail network and improved freight logistics.

10.6.2 We have also allowed for emissions reductions through the introduction of hydrogen refuelling stations for hydrogen fuel cell electric vehicles.

11. Results from Modelling CO_2 Transport Emissions under the CNC Scenario

Figure 11.1: Road Transport CO_2 emissions in the CPCA region under the CNC scenario.

11.1 The modelling results for the CNC scenario is shown in Figure 11.1. Some key points to note include



- Road transport CO_2 emissions peak in 2019. This would be a consequence of rapid and widespread introduction of car reduction measures.
- Our modelling suggests that zero transport emissions for the CPCA can (just) be reached under the CNC scenario by 2050. Emissions in 2030 are ca. half those of peak emissions.

12. Concluding Remarks

Our current transport situation has come about through decades of car-centric policy decisions. Despite their undoubted convenience, filling our roads and metropolitan areas with two tonne wheeled metal boxes powered by fossil fuels always presented severe safety, air quality and environmental risks.

In order to tackle the climate emergency, we need to have a modal shift to public and active transport alongside e-vehicles for essential services and users. Emissions from freight transport need to be tackled by the rapid and widespread introduction of new infrastructure, including Greenways and urban consolidation centres.

We'll leave the last word with Professor Tim Schwanen of Oxford University, "*A large shift away from motorised vehicles is the only way to fundamentally reduce transport's contribution to climate change, however hard and politically unpalatable that may be".*

34 See Cherrett, T., & Allen, J. (2018). Last mile urban freight in the UK how and why is it changing? Review report for the UK government's Foresight Future of Mobility project. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/777682/fom_last_mile_road_freight.pdf