A Green Investment Plan for Cumbria – Transport Overview for Cumbria

The Challenge

Transport accounts for 28% of Cumbria's territorial carbon dioxide emissions[1]. On a per capita basis Cumbria's transport emissions are 22% higher than the UK national average.[2] Almost all of this is due to road transport. However, on a consumption basis the biggest contribution to the greenhouse gas footprint is air travel by visitors to Cumbria (17% of the total). Visitor road travel by private vehicles to and within Cumbria makes up a further 15%.[3]

What needs to happen:

1. Switch to electric vehicles (or hydrogen if batteries not feasible, such as for HGVs)
2. Reduce travel and car use by
   a) Reducing miles travelled (working for home, local provision of services, etc.)
   b) Switching journeys to public transport (which itself needs to be electrified or use hydrogen)
   c) Switching journeys to active modes (walking and cycling)

Number 2 above is more environmentally sustainable that 1, as it reduces the huge energy cost of manufacturing cars and their batteries, but is more complex and difficult politically. As well as contributing to climate change the current level of use of private cars results in congestion and air pollution (which will not all be removed by a switch to EVs, as there will still be particulates from the wear of tyres). Cars also take up a lot of public space which could be put to better use.

2.b) and 2c) are complimentary: walking and cycling can be used for short journeys and public transport for longer ones, or for when the weather is bad. The ability to put bikes on trains means these two can be combined. The availability of public transport and safe walking/cycling routes, and access to hire cars or car club cars such as provided by Co-Wheels,[4] means people can have a reasonable quality of life without owning a car. Not everyone is able to drive and a quarter of households in England do not have access to a car. Among low income households this rises to 45%.[5] So 2. is more equitable than 1. Enabling people to live without owning a car is a good way to get them not to use cars for journeys that could be made by other means: organising a car for a journey becomes a hassle and expense.

Enabling people to travel around by public transport when they get to Cumbria would also facilitate visitors using public transport to get there, so reducing the 'visitor travel to Cumbria'

[1] See p.15 of Small World Consulting, 2020.
[2] Ibid, p.15.
[3] Ibid, p.21
[4] https://www.co-wheels.org.uk/
[5] https://www.gov.uk/government/statistical-data-sets/nts07-car-ownership-and-access

element of Cumbria's carbon footprint and enhancing the attractiveness of Cumbria as a destination for those without a car. The provision of Co-Wheels car club cars[6] in key tourist destinations would also facilitate this: people staying in those destination would then have the option to use a car for one or two days during their stay, rather than having one available the whole time. If you travel to Cumbria by public transport, you are likely to spend more in local shops when you are there, as you are not able to bring all your food with you in the back of a car.

Barriers to take up of EVs

1. Cost
2. Confidence that charge points will be available when needed.

Possible solutions:
- finance packages to enable purchase/lease of EVs, perhaps through employers. For example: https://on.to/ offers a car subscription service where you can get an EV from £330 /month.
- EV chargepoints being subsidised by government grants through OLEV (Office for Low Emission Vehicles). Charge My Street (a community benefit society) working with Cumbrian Local authorities is installing chargepoints funded by OLEV. Uncertainty about future technology and charging behaviour make it difficult to predict the number of chargepoints that will be needed, but it is likely to be in the order of 2-10,000 public chargepoints.[7] Plus workplaces and properties with their own off-street parking are likely to want chargepoints. See Supporting information for an estimate of how many are needed.

Although there will be jobs in installing EV chargepoints (I have estimated 130 on average over 15 years) in the longer term the move to EVs will result in a loss of jobs within Cumbria as EVs require less maintenance than internal combustion engine vehicles.

Barriers to improving rail services

A major barrier is the priority (or lack of) given by Network Rail (or the UK government) to the various lines – for example the electrification of the Oxenholme-Windermere line, approved in 2014 was cancelled in 2017.

The only electrified railway line is the West Coast mainline that goes through East Cumbria, with stops in Oxenholme (just outside Kendal) Penrith and Carlisle. The usefulness of this for local travel is hampered by the demands of long distance trains: many trains for example do not stop at either Oxenholme or Penrith so the service between these two stations is very poor at some times of the day.[8]

Other railway lines are:

- Oxenholme – Windermere;
- the Settle – Carlisle line which runs through the Eden Valley to Carlisle;

[6] There are currently cars at the stations in Penrith, Windermere and Oxenholme.
[7] See study by CAfS - https://cafs.org.uk/2021/06/29/over-9000-new-chargepoints-may-be-needed-for-cumbria-by-2030/
[8] For example there are no direct services between the two between 7.33 and 11.09 am.

- the Furness line which runs from Lancaster (with trains often starting in Manchester Airport) around the edge of Morecambe Bay to Barrow;
- the Cumbria Coast line, from Barrow up to Carlisle (some but not all trains on the Furness line go from Lancaster through Barrow to Carlisle); and
- the Carlisle – Newcastle line.

All these services still use diesel trains, which are often of very poor quality. Services are mostly hourly, but less frequent on the Settle-Carlisle line.

The Cumbria Coast line was built to carry the output of West Cumbrian mines and probably is only still in existence because it takes nuclear waste to Sellafield. It is only in recent years that the signal boxes were upgraded and a Sunday service introduced. The line forms the sea wall at several points, so is vulnerable to storm surges and rising sea levels. In places it is frequently blocked by landslips and there are sections of single track. The former make the service unreliable and the latter is a barrier to increasing the frequency of services. The slow speed of the trains means travelling by car is often quicker. The advantage of cars over the train will be increased if planned improvements to the A595 go ahead. Because of this the railway tends to be used mainly by those who do not have the option of using a car. For such people the Cumbria Coast line is a vital transport link, particularly in the southern part of Copeland where there is no bus service.

The Furness line has the advantage of running on viaducts across several estuaries, so provides a much shorter link between Lancaster, Grange-over-Sands and Ulverston than the road network which goes further inland.

Barriers to improving bus services

Almost all the bus services in Cumbria are run by Stagecoach, which has depots in Barrow, Carlisle, Kendal and Workington. Stagecoach Cumbria and North Lancashire (they also operate in the Lancaster District where they have a depot in Morecambe) employs 600 drivers, 106 maintenance staff and cleaners and 63 supervisors and managers running 11.9 million miles of bus services a year.[9] Walk on ticket prices are high, particularly in the Lake District National Park[10] where many users are visitors, many of whom have concessionary bus passes. This means there is little pressure on Stagecoach to reduce their prices to attract local, repeat custom and the reimbursement they receive depends in part on the fares they charge. Cumbria County Council does not provide any funding to support non-commercial bus routes[11] and some parts of the County, such as the southern part of Copeland, have no bus services at all.

Bus services in Cumbria firstly need to be made more affordable and probably the only way to do this is through the local authority being given the power to franchise services and control routes and fares. The bus fleet then needs to be converted to electric or hydrogen. If the annual bus miles were doubled this could create around 450 jobs across Cumbria.

[9] Stagecoach Cumbria and North Lancashire, 2019.
[10] For example the 4.5 mile, 15 minute bus journey from Windermere to Ambleside costs a family of four £17 (see https://www.stagecoachbus.com/plan-a-journey) compared to the £3 (£1.50 per adult) that journey would cost in London, where any bus journey is just £1.50 per adult.
[11] https://www.in-cumbria.com/news/17246264.cumbria-transport-funding-shrinks-2m-zero-10-years/

Barriers to active travel

Many residents of Cumbria are there because they want an active, outdoor lifestyle. Cumbria should therefore have a population receptive to walking and cycling. Capitalising on this, and make cycling something people do to get to where they need to go, rather than just for leisure, requires a major investment in safe cycling and walking infrastructure, including segregated cycle paths. These should not be confined to urban areas: cycling also needs to be safe in rural areas. In particular, attention should be paid to creating segregated cycle paths where a busy main road is currently the only option.

Cumbria has a cycling strategy and a bicycle mayor. However, the latter is a voluntary role and it is not clear if the post-holder, Richard Ingham from Barrow,[12] has any resources at his disposal. Cycle infrastructure should not be an add on but a major part of the business and expenditure of Cumbria Highways department.

The provision of cycling and walking infrastructure clearly needs public sector investment, with support perhaps from organisations like Sustrans. However, an increase in cycling has the potential to support an increase in cycle shops selling and repairing bikes (the latter, unlike the former, cannot be done via the internet). Cycle tourism could also form a major part of Cumbria's visitor economy, with cyclists more likely to spend money in local shops in rural areas than car-borne visitors.

[12] https://www.barrowbc.gov.uk/news/bicycle-mayor-of-cumbria-elected/

Other information from Appendix 2 of 'The Potential for Green Jobs in Cumbria', March 2021

Method of travel to work in 2011

	Car/van/ motorbike	Bus	Train	Bicycle	On foot	Other
Allerdale	77%	4%	1.0%	1.6%	15%	0.7%
Barrow	68%	5%	1.8%	5.4%	18%	0.8%
Carlisle	71%	7%	0.7%	2.8%	17%	0.6%
Copeland	80%	5%	1.7%	1.8%	11%	0.6%
Eden	75%	2%	1.0%	1.4%	19%	0.9%
South Lakeland	72%	2%	1.7%	3.0%	20%	0.9%
Cumbria	**74%**	**5%**	**1.3%**	**2.7%**	**17%**	**0.7%**
North West	73%	9%	3.6%	2.3%	11%	0.6%
England	67%	8%	10.0%	3.1%	11%	0.7%

Source: Table QS701EW, Method of Travel to Work, Local Authorities in England and Wales, ONS, 2011 Census.

More people than nationally walk to work, suggesting that more people live within walking distance of where they work. Cycling is particularly high in Barrow, perhaps because of a long standing culture of cycling to work in the shipyards(??). Commuting by car was highest and cycling and walking lowest in Allerdale and Copeland. This may reflect the extent of commuting to concentrations of employment outside urban centres, such as Sellafield and West Lakes Science Park. Use of public transport is low. The main places where trains were used for travel to work are Barrow, South Lakeland and Copeland. For Copeland this may reflect rail travel to Sellafield. This has a station on the Cumbria Coastline and the timetable takes account of the shift changes at Sellafield.

Chargepoints

There are currently around 130 charge points in Cumbria that are available for public use.[13] Barrow-in-Furness is particularly poorly served with only 5 public charge points (see Table 5.4). A report on the need for EV charge points in the UK published in August 2020 considered that the number of charge points in 2019 is just 5% of what will be needed in 2030, assuming that by then EVs are 70% of new vehicle sales (Nicholas and Lutsey, 2020). Since that report was written the government has said it will ban the sale of petrol or diesel cars (other than hybrids) from 2030. In calculating the number of charge points needed by 2037 we have therefore multiplied the current number of charge points by 30. This may overestimate the number needed in areas that currently have quite a few charge points but underestimate the numbers in places that have very few.

[13] From National Chargepoint Registry (www.gov.uk/guidance/find-and-use-data-on-public-electric-vehicle-chargepoints) and www.zap-map.com. Some of those on Zap map may be workplace chargepoints or only for use by customers of businesses.

In addition, we have assumed that of the number of cars driven to work will be 60% of those who drove to work in the 2011 census, partly because of increased home working and partly because of a modal shift away from private cars. We have assumed that 20% of these will need to be charged at work on any one day, so this number of workplace charge points will be needed. Plus, we have assumed that domestic charge points will be installed at 50% of domestic properties that are bungalows, semi-detached or detached (and therefore probably have off-street parking).

Table 5.4 Estimate of number of charge points needed

	Public chargepoints		Workplace chargepoints		Home chargepoints	
District	Estimated number of Chargepoints 2020 [1]	Additional number needed [2]	Number driving to work [3]	Number needed for 20% to be charged at work	Number of properties [4]	Chargepoints for 28% of properties [5]
Allerdale	12	360	17,599	3,520	49,721	13,673
Copeland	16	480	13,012	2,602	37,222	10,236
Barrow-in-Furness	5	150	10,485	2,097	34,576	9,508
Carlisle	21	630	19,474	3,895	52,745	14,505
Eden	30	900	9,998	2,000	28,012	7,703
South Lakeland	52	1560	18,417	3,683	55,598	15,289
Cumbria Total	136	4080	88,985	17,797	257,874	70,915

[1] from National Chargepoint Registry (www.gov.uk/guidance/find-and-use-data-on-public-electric-vehicle-chargepoints) and www.zap-map.com. Some of those on Zap map may be workplace chargepoints or only for use by customers of particular businesses.

[2] 30 times existing number

[3] 60% of numbers in Table QS701EW, ONS 2011 Census data

[4] total from Table 4.3

[5] 55% of dwellings in Cumbria are detached, semi-detached or bungalows (see https://www.cumbriaobservatory.org.uk/housing/) . It is assumed that half of these will have domestic chargepoints

In work carried out for the TUC, Transition Economics have estimated employment creation from a clean infrastructure stimulus.[14] This included upgrading and expanding the rail network and building cycle lanes and pedestrianisation. Scaling down their estimates for the Northwest as a whole to Cumbria according to relative population[15] would result in 908 jobs in upgrading the railways and 532 jobs in building cycling and walking facilities.

Here we have estimated the jobs involved in the installation of electric vehicle charging points using information obtained by Charge My Street, a local community benefit society engaged in installing charge points in Cumbria and Lancashire (see Appendix 3). Installing the number of charge points in Table 5.4 would create, on average around 130 jobs in the county over the 15-year transition period. These are shown in Figure 5.1.

[14] Appendix 2 of TUC, 2020.

[15] The population of Cumbria is just under 7% of the 7.3 million in the North West.

Figure 5.1 Transition jobs in installing EV chargepoints