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1. Towards a foundational perspective on places: the issue of habitation

Different disciplines and practices have tried to understand place(s) which have been conceptualised in many different ways, informed by various notions of scale, function and hierarchy. Urban planners have traditionally understood places with concepts of scale such as village, town, city or with concepts of function and hierarchy such as neighbourhood, suburb or region. The social sciences on their side have focused on institutional and organisational processes reflecting their disciplinary specialisation. Thus, anthropologists have primarily understood places through the notion of local culture, sociologist through that of community, political scientists have typically looked at local government and governance, while spatial economists and economic geographers have prioritized notions such as local economy or travel to work zone.

These concepts are practically inescapable bracketing devices in any discussion of place. And they are often critically helpful, but they come at a cost because all these concepts are about setting boundaries, creating classifications and lines which limit the field of the visible according to specific scholarly traditions. Concepts such as city, town or hinterland present places as specific material objects loaded with assumptions and imaginaries about how such places do and should function. While concepts such as the economy, mobility, government or food provisioning, focus on specific processes while leaving others invisible. As a result, all these concepts struggle to maintain an open and holistic view over the diversity and range of materialities, processes and institutions involved in the life of places.

Over past decades there has been a growing critique, by scholars of different fields, of the 'silo' approach implicit in such discipline-based approach to the study of places which has led to the emergence of the interdisciplinary field of urban and territorial studies. Building on this interdisciplinary approach we propose to open up the discussion of places through the broad and open notion of **'habitation'**. We define habitation following the double meaning of the term as outlined on the Oxford English Dictionary (OED). Here habitation is both fixity defined by built structures at a site and a dynamic process involving occupiers and actions.

Habitation is fixed in one OED definition as a "settlement" and or "a site of settlement". Settlement here means built structures on a site which are inhabited in one period and can long afterwards be excavated by archaeologists. But habitation is also a process involving occupiers because in the first of several OED definitions, habitation is "the action of dwelling

[1] This working paper is based on research by the authors working as Foundational Economy Research Ltd (FERL) on a project funded by Welsh Government which published the findings in a report titled *Small Towns, Big Issues, https://www.gov.wales/small-towns-big-issues-independent-research-report*. While this report has influenced subsequent Welsh Government policy, the authors are solely responsible for the views expressed in their independent report and this working paper.

in or inhabiting as a place of residence; occupancy by inhabitants". Occupancy here involves activities around everyday living and working in a place.

From a foundational perspective we then add two assumptions which come from foundational understanding of the activity processes of living and working. These assumptions come out of our UK research but are empirically valid in all the high-income societies.

- The first assumption is that, when considering occupancy, the unit of analysis is the household (not the individual wage earner). This distinction is important because multi-person households are the norm so that, for example, 70% of UK citizens live in multi-person households. In such households expenditure is always shared and, with the rise in female workforce participation, incomes are pooled in the increasing number of two-income households. Both parents work in 75% of UK households with two adults and dependent children[2].

- The second assumption is that the pattern of living and working is determined by socio-technical reliance systems (material and providential[3]) which change and develop over time as we have seen with mobile telephony or the rise of mass automobility. This observation is important because the pattern of physical settlement can remain but the organisation of working and living environment can change radically. An obvious UK example would be the decentring of South Wales mining villages because pit closure was accompanied by a society wide shift in the mobility system so that 75% of village households owned cars which allowed commuting and retail park shopping.

If no concept can be innocent of assumptions, from a foundational perspective, habitation is attractive for conceptual and practical reasons because it is an open concept. Habitation allows us to explore what exists empirically and how things change without too much baggage about the boundaries of and relations between places; and the findings provide a basis for engaging the question of how places need to be adapted to be more ecologically, socially and economically sound. Habitation promotes a 360°degree view of places beyond disciplinary boundaries, while focusing the signature concerns of foundational research with the organisational processes, systems and infrastructures which interact and overlap to sustain social life. Through doing so, the analysis of habitation provides a platform for developing foundational thinking about how to combine liveability with sustainability.

In detail, the concept of habitation has four strengths from a foundational point of view:

- An open view of places and sensitivity to diversity

  Places are different and the notion of habitation opens up to the different ways places are inhabited. Looking at material infrastructures and systems, we can observe how

[2] Calafati, L., Froud, J., Haslam, C., Johal, S. and Williams, K. (2023), *When Nothing Works: from cost of living to foundational liveability*, Manchester University Press.
[3] For an explanation of these two categories and the Foundational Economy concept see https://foundationaleconomy.com/introduction/

for some places, private car-based mobility makes dispersed, low-density settlement in the countryside or suburbs liveable; while in large, high density cities variable combinations of active travel[4] and public transport make such places work. In both material and providential systems[5], we can observe the interdependence and cross subsidy between high- and low-density places. In many European countries, nationally funded and organised provision makes a variety of services (such as daily postal deliveries or rapid ambulance response) available in remote areas where low population density makes cost recovery unattainable. Looking at income, we can observe the development/decline of local industries and the spatial redistribution of work – with, for example, manufacturing decline and reorganisation of public services- supporting or undermining local liveability.

- Holistic/systemic view of places

  Intuitively, it is easy to understand that it is the overlapping of different systems – most obviously food, mobility, housing and energy systems- which makes safe and civilised life possible in a place. This perception is articulated in the three pillars "temple of liveability" diagram[6] through which foundational thinking insists that liveability depends on collective provision of essential services and social infrastructure as much as it does on residual income and some discretionary purchasing power after essentials (including food, housing, transport and utilities) have been paid for.[7] This holistic perspective on the ensemble of systems which sustain life is crucial in foundational analysis. Here the notion of habitation maintains this holistic view yet adds an explicit territorial grounding which is missing in existing foundational economy thinking. In this way the notion of habitation helps to focus how foundational systems 'come into place' in specific territories enabling or disabling social life.

- Processual view of places

  Notions such as city, town or housing inherently tend to objectify places into static 'things': a more or less large/small/complex collection of buildings and people which are then often defined by a set of outcome characteristics, as with the Index of Multiple Deprivation (IMD)[8] districts or the high per capita Gross Value Added (GVA)[9] region. The notion of habitation instead emphasises the act of inhabiting and links more directly to processes and infrastructures which sustain places through material

[4] Active travel is usually defined as short journeys of 5kms undertaken by walking or bike/scooter.
[5] See note 2.
[6] Calafati, L., Froud, J., Haslam, C., Johal, S. and Williams, K. (2023), *When Nothing Works: from cost of living to foundational liveability*, Manchester University Press.
[7] ibid.
[8] For an explanation of the term and use see, for example, Ministry of Housing, Communities & Local Government, (2019), 'The English Indices of Deprivation 2019: Frequently Asked Questions (FAQs). https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/853811/IoD2019_FAQ_v4.pdf
[9] For an explanation of the term and use see, for example, O'Farrell, L. (2019), 'What is Gross Value Added (GVA)?', City-REDI Blog, University of Birmingham. https://blog.bham.ac.uk/cityredi/what-is-gross-value-added-gva/

and immaterial flows of goods, services, materials, wastes and information. This is important because it opens up to a more dynamic perspective which is crucial to understanding how places work. Yet, as noted in the previous point, unlike notions such as local economy or local government, it does not privilege specific processes or one level at the expense of others but maintains an overview over the ensemble of processes and infrastructures which sustain places.

- Liveability and sustainability of places

  The word habitat leads very easily towards questions about good vs. bad habitats for living and to the processes which maintain or destroy habitats. Thus, more than notions such as city, community or the built environment, the concept of habitation semiautomatically leads to questions around the possibility and sustainability of habitation. Is habitation easy or difficult in a certain place? What resources are needed and at what cost? And then how does ease of habitation vary for households of different types with various levels of income and patterns of expenditure? How do changes in climate, geography, economy – e.g., rising sea levels, prolonged phases of drought or economic downturn/development – enhance or undermine habitation? Are certain modes of habitation, like the car-based countryside, sustainable in the long-term? In the context of climate and nature emergency, these questions should be the default when studying places and the concept of habitation helps to keep them in the field of the visible.

2. The 15-minute city as a model of sustainable habitation across different territories?

As established by the classic literature on central places[10] – and more recently by the literature on urban networks[11] and urban metabolism[12], modern settlements are nodes in complex networks of immaterial and material flows of information, goods, people, raw materials and wastes. These networks define different functional divisions – as, for example, some places become service centres for broader areas – which result in hierarchies among larger and smaller settlements. While depending on the specific material or immaterial flow, places become part of different geographies, some of which are typically fairly local as in travel to work, while others are much more dispersed, as in food or energy supply.

If networks and flows are central to modern habitation, in this paper we concentrate on one specific system of flows which underpins the modern settlement and is therefore crucial from a foundational perspective: the everyday mobility of people[13]. Despite sedentarism, modern settlements are characterised by everyday mass movements of people going to work, to shop, to access services and to socialise. Like many other foundational systems – food provision or housing – everyday mobility is in a social and environmental mess, as the sector is one of the main polluters while mobility disadvantages contribute to driving up social inequalities. In line with the habitation perspective, our analysis will look at everyday mobility not in a silo but in strict relation to the spatial organisation of settlements, while not neglecting social, economic and political factors.

From a policy perspective our concern is to critically engage the 15-minute city[14], a popular planning concept which emphasises the desirability of organising (and reorganising) settlements around short journeys to work, shop and socialise mainly done on foot or by bike, with public transport integrated for longer journeys and reliance on car use reduced. The 15-minute city is an ideal or an occupancy reform programme. This ideal has reinvigorated established ideas around people-centred urban design, and the 15-minute city concept has gained much attention over the past few years among policy makers because its advocates

[10] Christaller, W. (1966), *Central Places in Southern Germany*, Prentice Hall. (https://www.academia.edu/39738205/Central_Places_in_Southern_Germany

[11] Pflieger, G and Rozenblat, C. (2010), 'Introduction. Urban Networks and Network Theory: The City as the Connector of Multiple Networks', *Urban Studies*, 47:13, pp.2723-2735. https://www.jstor.org/stable/43079955?saml_data=eyJzYW1sVG9rZW4iOiI5NmE3YjZmOS0yMzc1LTQ3NWEtYmQwYi01M2NlZmE3ZjJmY2UiLCJlbWFpbCI6ImwuY2FsYWZhdGlAY2FtcHVzLnVuaW1pYi5pdCIsImluc3RpdHV0aW9uSWRzIjpbImYyNzcyMmI3LWY4ZTQtNDljYy1hMmRhLTMxY2ZlYmM1ODk3NyJdfQ

[12] Heynen, N., Kaika, M. and Swyngedouw, E. (eds), (2006), *In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism*, Routledge. https://www.routledge.com/In-the-Nature-of-Cities-Urban-Political-Ecology-and-the-Politics-of-Urban/Heynen-Kaika-Swyngedouw/p/book/9780415368285

[13] In this paper we don't look into the everyday movement of goods, materials and wastes flowing through cities. Including these processes would have opened the research project too much. Yet we underline how these processes are key aspects of the everyday mobility of cities and towns, which are often overlooked and would require more research.

[14] Moreno, C., Allam, Z., Chabaud, D., Gall, C. and Pratlong, F. (2021), Introducing the "15-Minute City": Sustainability, Resilience and Place Identity in Future Post-Pandemic Cities. *Smart Cities*, 4, 93–111. https://doi.org/10.3390/smartcities4010006

believe it has the potential to generate sustainability gains which help meet social and environmental objectives.

Supporters of the concept argue that 15-minute cities would have environmental benefits by reducing everyday car use and cutting back on the resource consumption and pollution embedded in automobility. At the same time, this kind of people-centred organisation of settlements would promote healthy lifestyles as physical exercise would become an integral part of more daily routines. And it could help reduce social inequalities because the expense of owning and running a car creates transport inequalities in car dependent settlements where high-income households can easily afford two or more cars while low-income households struggle to run one. By way of contrast, less costly mobilities such as active travel and public transport would substitute for the car journey in a 15-minute city,

The 15-minute city was thus originally presented as a win-win model of urban reorganisation which could deliver improvements in sustainability, public health and quality of life. But with implementation of restrictions on car use has come increasing political resistance and the concept has been denounced by the radical right and questioned by the egalitarian left.

(1) The radical right critique feeds off plans to restrict car use introduced in cities like Oxford. Here environmentally motivated proposals to restrict through traffic by cars at peak hours have provoked counter demonstrations and been denounced on GB News as "a dystopian plan" for "surveillance culture".[15] On the internet, radical right thinkers like Jordan Peterson represent all this as the first instalment of restrictions on freedom of movement which will divide cities into 15-minute zones where citizens would be confined. And in the most paranoid accounts, this will hasten "the great replacement" of Christian Europeans by Muslim immigrants[16].

(2) The egalitarian left argues rather differently that the concept of the 15-minute city – like concepts of sustainability or transition – is yet another 'empty container'[17] which at best leads to cosmetic improvements in how our cities and towns work and at worst masks and exacerbates existing spatial and social inequalities. As noted in an article published on Degrwoth.info[18], the 15-minute city could result in gentrification if

[15] For example, Dolan, M. (2023), 'These deeply illiberal, unBritish 15-minute cities are beyond the pale', GB News, February. https://www.gbnews.com/opinion/these-deeply-illiberal-unbritish-15-minute-cities-are-beyond-the-pale-mark-dolan/440998; Stanford, C. (2023), 'The 15-Minute City: Where Urban Planning Meets Conspiracy Theories', New York Times, 1st March. https://www.nytimes.com/2023/03/01/world/europe/15-minute-city-conspiracy.html; Wainwright, O. (2023), 'In praise of the '15-minute city' – the mundane planning theory terrifying conspiracists, The Gurdian, 16th February. https://www.theguardian.com/commentisfree/2023/feb/16/15-minute-city-planning-theory-conspiracists

[16] Petersen, J. (2022), 31st Dec https://twitter.com/jordanbpeterson/status/1609255646993457153?ref_src=twsrc%5Etfw%7Ctwcamp%5Etweetembed%7Ctwterm%5E1609255646993457153%7Ctwgr%5E3d16c081c1cb620c7dc3fe7ad5eadebb5a058e38%7Ctwcon%5Es1_&ref_url=https%3A%2F%2Finews.co.uk%2Fnews%2F15-minute-city-what-meaning-term-conspiracy-theories-explained-oxford-protests-2166033

[17] Herbert, J. (2021), 'Transformation or Gentrification? The Hazy Politics of the 15-Minute City', Degrowth, Cities blog, 26th August. https://degrowth.info/en/blog/transformation-or-gentrification-the-hazy-politics-of-the-15-minute-city

[18] *ibid*.

improvements in local services and amenities are allowed to drive up rents. And 15-minute policies could deepen not reduce territorial inequalities if they privilege wealthier inner-city neighbourhoods at the expense of peripheral social housing estates which are more difficult to convert for active travel and public transport.

Influenced by the egalitarian left critique, our foundational line is that the concept of the 15-minute city is indeed potentially ecological and egalitarian, but it will not automatically lead to progressive change. The direction and extent of progressive change will ultimately depend on the balance of political forces and the capability of public policy makers. And one major consideration here will be the capacity of those who make and influence policy to adapt the general idea of active travel- centred places to specific territorial contexts.

The 15-minute city presupposes certain material infrastructures, particularly in housing and mobility. It requires high density buildings and a mix of functions so that people can access most services and amenities with short journeys either on foot or by bike. It requires significant population densities so that public transportation becomes financially sustainable. And it requires a good endowment of bike lanes and pedestrian areas to enable safe active travel. Indeed, the concept of the 15-minute city has emerged in the context of European metropolises like Paris, Barcelona, Copenhagen and London which have a dense urban fabric and well-developed public transport infrastructures[19].

But most cities and towns in Europe (and beyond) are not like that. According to Eurostat in 2015 only 30% of Europeans lived in cities, defined as high-density (at least 1,500 inhabitants per km^2) settlements of minimum 50,000 inhabitants[20]. By way of contrast 20% of Europeans lived in rural areas and another 40% lived in places of intermediate density classified as towns and suburbs[21]. To make the vision of the 15-minute city work beyond the major capital of Europe it will be crucial to adapt it to local context. This adaptation has already begun in cities like Portland[22]and Melbourne[23] which have replaced the concept of the 15-minute city with that of the 20-minute neighbourhoods to account for the lower densities of their urban areas.

In this paper we empirically explore the question of how we can adapt the 15-minute vision to low density contexts by focusing on the case of Wales which signalled environmental

[19] Moreno, C. (2020), 'Droit de cite: De la ville-monde à la ville du quart d'heure, Éditions de l'Observatoire. https://www.leslibraires.fr/livre/17526473-droit-de-cite-de-la-ville-monde-a-la-ville-du--carlos-moreno-editions-de-l-observatoire
Young, P. (2021), 'How '15-minute cities' will change the way we socialise', WorkLife, BBC. https://www.bbc.com/worklife/article/20201214-how-15-minute-cities-will-change-the-way-we-socialise
C40 network: https://www.c40knowledgehub.org/s/topic/0TO1Q000000UEx5WAG/spotlight-on-15minute-cities?language=en_US
[20] Eurostat, (2018), 'Archive:Statistics on rural areas in the EU'. [Accessed 17th August 2023]. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Statistics_on_rural_areas_in_the_EU&oldid=391832#Population_distribution_by_degree_of_urbanisation
[21] *ibid.*
[22] Portland City Council, (2012), 'The Portland Plan'. https://www.portlandonline.com/portlandplan/index.cfm?a=288098&c=52256
[23] Victoria State Government, (undated), 'Plan Melbourne 2017-2050'. https://www.planning.vic.gov.au/guides-and-resources/strategies-and-initiatives/plan-melbourne/the-plan

commitment by passing the 2015 Wellbeing of Future Generations Act. Subsequently, the 15-minute city vision has influenced Welsh planning policy in ways which have been reinforced by the Welsh Government's commitment to active travel policies.

Future Wales in 2021 established a new national development framework for the next 20 years. The stated aim of spatial strategy was then, "building sustainable places that support active and healthy lives, with urban neighbourhoods that are compact and walkable, organised around mixed-use centres and public transport, and integrated with green infrastructure". Town centres would have a key role to play in realising this strategy by concentrating residency, employment, leisure and retail in compact, high-density zones connected to public transport and active travel infrastructures. In line with this, Welsh Government in 2020 had already strengthened its "town centres first" principle: If suitable sites could be found, "significant new commercial, retail, education, health, leisure and public service facilities must be located within town and city centres".[24]

All this brought planning policy into alignment with Welsh Government transport policy. In 2013 the National Assembly passed the Active Travel Act which required Welsh Ministers and local authorities to promote cycling and walking'[25]. These principles are reinstated in the latest Welsh Transport Strategy[26] published in 2021 which has the ambition of 'bringing services closer to people' and achieve a 'modal shift by displacing private car journeys with walking and cycling and public transport'[27]. Active travel, public transport, and mixed-use are keywords in the latest iteration of Planning Policy Wales (PPW), the official document which sets out the land use policies of the country[28].

Yet as we shall see in the next section, it is difficult to realise these commendable 15-minute city related policy objectives in the territory of Wales. As we shall see in the next section, Wales, like many other regions across Europe, has few large cities and many small towns and this pattern of settlement is associated with car dependent mobility.

[24] Welsh Government, (2021), 'Future Wales: The National Plan 2040', p.71.
https://www.gov.wales/sites/default/files/publications/2021-02/future-wales-the-national-plan-2040.pdf
[25] National Assembly for Wales, (2013), Active Travel (Wales) Act 2013.
https://www.legislation.gov.uk/anaw/2013/7/section/1/enacted
[26] Welsh Government, (2021), 'Llwybr Newydd – the Wales Transport Strategy 2021'.
https://www.gov.wales/sites/default/files/publications/2021-03/llwybr-newydd-wales-transport-strategy-2021-full-strategy_0.pdf
[27] Welsh Government, (2021), 'Active Travel Act Guidance, Policy & Strategy', p.14.
https://www.gov.wales/sites/default/files/publications/2022-01/active-travel-act-guidance.pdf
[28] Welsh Government, (2021), 'Planning Policy Wales' Edition 11, p.15.
https://www.gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11_0.pdf

3. How is Wales currently inhabited? The 25-minute drive to place

Located on the western side of the main British Isles, Wales is a place of over three million population and a country of small towns with a few large urban districts where the problems of realising the ideal are immediately apparent:

- On the small towns, 63% of the Welsh population lives in towns of 65,000 inhabitants or below with a long tail of small towns when 43% of the population lives in places of 20,000 inhabitants or below[29]. Our recent report for Welsh Government on towns points out[30] that the car is embedded in the way small settlements work because for the past 40 years town development has been geared towards low-density, edge of town developments like retail parks or owner occupier estates.

- As the Welsh Government planning strategy documents recognize, there are three main urban districts with substantial populations of more than 100,000 in Wales: Cardiff/ Newport and Swansea/ Llanelli (both on the southern Welsh urban corridor) with Wrexham/ Flint in the north of Wales[31]. But these are 15–20-mile diameter urban areas including district towns and green spaces, so they are much too large to become one 15-minute city and often do not easily divide into 15-minute districts.

Let us now consider the patterns of mobility in greater detail. In considering these patterns we will mainly use evidence from the 2011 census. Because the 2021 census was complicated by Covid disruption to established travel patterns. 2021 census results on travel to work can be adjusted by using late 2010s travel survey evidence. But it is not possible in 2022 or 2023 to be confident about whether and to what extent we have a new normal after Covid. Hence, at this point in time for working paper purposes, the most straightforward option is to use 2011 evidence with the caveat that this shows pre Covid patterns of mobility/ When post Covid patterns are clear, we would expect to review up to date evidence and revise the detail of the analysis as necessary.

If we look at the two largest urban settlements, Cardiff/ Newport and Swansea/Llanelli, a 15-minute city already exists in their city centres i.e., central Cardiff or Swansea. The exhibit below focuses on the MSOA[32] approximating the city centre of Cardiff, the capital of Wales. This area has a high mix of function (residential, retail, employment), high population density,

[29] This data is derived from 2011 Census data using the 'Local Area Report for areas in England and Wales' and cross referenced against data on Wikipedia derived from the 2011 Census. Note: overlap in populations areas is removed. https://www.nomisweb.co.uk/reports/localarea?compare=W37000384 and https://en.wikipedia.org/wiki/List_of_built-up_areas_in_Wales_by_population

[30] Calafati, L., Froud, J., Haslam, C., Johal, S. and Williams, K. (2021), 'Small Towns, Big Issues: aligning business models, organisation, imagination, Report by Foundational Economy Research for Yr Is-adran Cartrefi a Lleoedd / Homes and Places Division Llywodraeth Cymru / Welsh Government. https://www.gov.wales/small-towns-big-issues-independent-research-report

[31] See notes 28 and 29.

[32] Middle Layer Super Output Areas (MSOA) are a geographic hierarchy and are made up of groups of LSOAs (Lower Layer Super Output Areas), usually four or five. They comprise of between 2,000 and 6,000 households and have a resident population of between 5,000 and 15,000 persons. MSOAs fit within local authorities and are designed to improve the reporting of small area statistics. https://www.ons.gov.uk/methodology/geography/ukgeographies/censusgeographies/census2021geographies

pedestrian zones and major nodes of public transport. Here already 52% of total travel to work is performed via active travel which is by far the main mode of travelling to work, and this rises up to a stunning 68% in the case of movements below 10km. Public transport works as an important integration for long-distance movements, representing between 25% and 28% of movement over 10km. Nonetheless also in this area the car remains important, dominating long-distance movements over 10km and representing 25% of total movement.

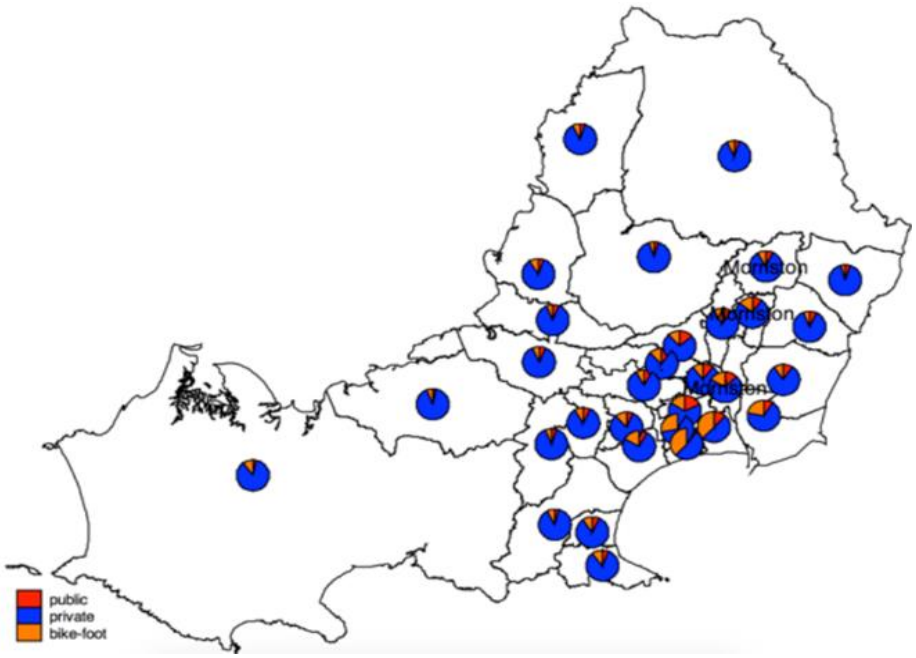
Exhibit 1: Methods of travel to work in Cardiff city centre in 2011[33]

	Public transport		Car or van (driving)		Active travel		Other methods		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Less than 10km	284	12%	422	17%	1,655	68%	60	2%	2,421	100%
10km to less than 30km	93	28%	188	57%	0	0%	51	15%	332	100%
30km and over	103	25%	174	42%	0	0%	135	33%	412	100%
Total	480	15%	784	25%	1,655	52%	246	8%	3,165	100%

Yet as we move form city centres to the edge of these urban settlements, the habitation mode increasingly becomes unlike the 15-minute city. In central Swansea, almost half of travel to work movements are by active travel and public transport. Yet as we move to the edge of the urban area the car progressively becomes the default means of travel to work. This is related to the fact that the urban fabric at edge of Swansea is organised for the car with large monofunctional zones, divisions between work-live-spend functions, low density of settlements and heavy road infrastructures which make walking and cycling to work, shop, play and socialise mostly unpleasant when not dangerous and arduous.

[33] Nomis, (2012), Census 2011, ONS. Note: See note 4 for a definition of active travel. https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?collapse=yes

Exhibit 2: Method of travel to work across Swansea urban area in 2011[34]



The car is so embedded in the way the edge of settlement works that in Swansea it dominates even in peripheral areas which do possess a 15-minute city infrastructure. A striking example is Morriston at the north edge of the Swansea built-up area. Morriston grew historically as a self-contained settlement and its legacy is a dense, mixed, urban infrastructure. Morriston has a long high street with shops and services, a good mix of live-work-shop functions, active travel on foot and relatively high building density in the core. Indeed, if we look at travel to work in 2011, we detect signs of a more urban, localised lifestyle in 'inner Morriston', the historical centre of the neighbourhood around Woodfield Street – the high street of the settlement – with 13% of residents reaching work by active travel. This is twice as much as in the adjacent outer Morriston suburb of Llansamlet which was designed from inception for the car and not surprisingly has only 6% of residents commuting by active travel.

[34] Note: the category 'private' includes car and vans, both as driver and passenger. The category 'public' includes tram, trains and busses. Other methods of travel to work are not includes, as the categories 'not in employment, residents working from home.
Source: Nomis, (2012), Census 2011, ONS.
https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?theme=75

Exhibit 3: Morriston town centre - Woodfield Street[35]

Exhibit 4: Morriston town centre – Side road leading into Woodfield Street

Yet the overwhelming majority of Morriston residents still commute to work by car. The percentage commuting by car range from 75% in the Woodfield Street area and up to a stunning 85% in the newer built settlements of Outer Morriston which was designed for the car. On the whole, despite having the basics of a 15-minute city infrastructure, inner Morriston is closer to a low-density outer suburb of Swansea than to the urban core of the city.

[35] All photos in this working paper are from Google Maps.

Exhibit 5: Method of travel to work in selected areas of Swansea in 2011[36]

	inner Morriston Swansea (008)		outer Morriston Swansea (003)		Llansamlet Swansea (010)		Swansea City Centre Swansea (025)	
	No.	%	No.	%	No.	%	No.	%
Public transport	315	9%	242	6%	188	6%	382	11%
Car (driving or passenger)	2,550	75%	3,551	85%	2,816	86%	1,695	50%
Active travel	456	13%	332	8%	204	6%	1,254	37%
Other methods	73	2%	77	2%	79	2%	91	3%
Total	3,394	100%	4,202	100%	3,287	100%	3,422	100%

If car use is at the core of habitation movement in Wales in the large urban districts, this is even more so in towns big and small. Contrary to what some would expect about towns in Wales and elsewhere, these are not self-contained, centred settlements defined by in-town movements. Instead, they are places of frequent, long-distance movements between towns and between towns and their rural hinterland.

Bangor in the Welsh-speaking north-west of Wales, Bridgend in the south-east urban corridor and Haverfordwest in the rural Southwest are three towns which have little in common beyond being administrative and/or economic centres of larger low-density territories surrounded with smaller towns and villages. Consider travel to work flows within these towns and then movement from and to their hinterland: a stunning 76% and up to 83% of movements are between towns and hinterland. Only a small minority of 17% to 24% of commuting movements are of town residents commuting to work in towns.

Exhibit 6: Resident workers and commuting movements in and out in Bangor, Bridgend and Haverfordwest in 2011[37]

	Resident workers: Live and work in area		Commuters out: Live in area and work elsewhere		Commuters in: Work in town and live elsewhere		Total daily work related movements	
	No.	%	No.	%	No.	%	No.	%
Bangor	1,982	18.0%	2,725	24.8%	6,289	57.2%	10,996	100.0%
Bridgend	9,802	23.2%	9,880	23.4%	22,599	53.4%	42,281	100.0%
Haverfordwest	3,012	23.8%	2,188	17.3%	7,455	58.9%	12,655	100.0%

[36] Source: Nomis, (2012), Census 2011, ONS. https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?theme=75 Note: Total excludes resident not in employment and residents working from home.
[37] Source: see note 36.

In such long-distance movements the car is absolutely central as we can see from the table below which shows travel to work within the counties to which Bangor (Gwynedd County), Bridgend (Bridgend County) and Haverfordwest (Pembroke County) belong. Travel to work by car in 2011 was completely dominant accounting for 75% of movements in Gwynedd, 80% in Pembrokeshire and 83% in Bridgend County. If long-distance, between-town movements are structural in the way these territories work, we can see how public transport at present is no alternative to the car in these low-density areas. Travel to work by public transport accounts for 4%-6% in these three counties. This is even lower than travel to work by active travel which ranges between 10% (Bridgend) and 17% (Gwynedd) suggesting that Welsh towns still maintain a base for active travel in and around town centres which have a legacy of 15-minute infrastructures.

Exhibit 7: Method of travel to work in county shires of Bridgend, Gwynedd and Pembrokeshire in 2011.

	Bridgend		Gwynedd		Pembrokeshire	
	No.	%	No.	%	No.	%
Active travel	6,008	10%	8,561	17%	6,902	14%
Public transport	3,699	6%	2,984	6%	2,102	4%
Car of van (driving or passenger)	48,875	83%	37,181	75%	39,083	80%
Other methods	653	1%	697	1%	870	2%
Total	59,235	100%	49,423	100%	48,957	100%

According to the ONS, the average travel to work trip in Wales by car lasts 23 minutes, which is in line with the comparable figures for Scotland and the UK. Walking to work takes 10 minutes on average, while those who commute to work by rail or bus face a longer trip of 40-50 minutes. Considering that over 70% of travel to work in Wales is by car, it is fair to describe Wales as one big 25-minute drive-to settlement with a dispersed population.

Exhibit 8: Average time taken to travel to work in 2021 by mode of travel[38]

	Walk Minutes	Bicycle Minutes	Bus or coach Minutes	Rail Minutes	Car Minutes	Motorcycle Minutes
England	16	22	40	57	25	21
Wales	10	[u]	41	53	23	[u]
Scotland	15	24	43	51	22	[u]

[38] Labour Force Survey, (2022), 'Average time taken to travel to work by region of workplace and usual method of travel in Great Britain', Department for Transport table code: TSGB0111, ONS. Notes: [u] refers to data of low quality, due to a lack of responses to draw reliable conclusions.
https://www.gov.uk/government/statistical-data-sets/tsgb01-modal-comparisons#travel-to-work

Retail and office park developers and operators have perfectly understood the centrality of long-distance, car-based movements and have located their major developments at car friendly sites. Systematically they have located retail and office parks on the edge of towns and cities, at junctions off motorways and improved A roads, in car-centred developments with free front-of-the-store/office parking and little concern for public transport and active travel accessibility. The retail parks now compete with town centres as shopping and office on locations taking advantage of the fact that the urban layout of town centres makes car movements in and out more difficult while limited parking options adds inconvenience to the trip.

Exhibit 9: 30-minute drive to Bridgend Designer Outlet catchment area in 2021[39]

Arguably one of the most spectacular cases is the Designer Outlet on the northern edge of Bridgend off junction 36 of the M4 motorway connecting Cardiff to Swansea. The Designer Outlet has a 30-minute drive to radius which includes a large population in a catchment area, which extends along the motorway from Swansea/ Llanelli in the west to Cardiff/Newport in the east. As a result, the designer outlet, only 2.5 miles away from the retail area of the town centre of Bridgend has 3 times the visitors and 5 times the non-food turnover of the entire town centre[40].

[39] Co-Star database

[40] Ellandi (Commissioned report on movements within Bridgend).
Note: This stark imbalance was already visible in 2012 in a report by Welsh Government, based on payment card data, which showed that the Designer Outlet alone had at that time a non-food turnover five times as large as the town centre as a whole. See Welsh Government (2014) *Town Centres and Retail Dynamics: Towards a Revised Retail Planning Policy for Wales.*

4. Why we need to go from the 25-minute drive-to region to post-car/people-centred/complete place?

The car is at the core of active habitation in Wales and there is a large discrepancy between the 15-minute city ideal of active-travel based places and the reality of how Wales works in terms of everyday mobility. As the analysis shows, outside the immediate centres of Cardiff and Swansea. most of Wales is primarily a 25-minute drive to region rather than a collection of 15-minute active travel cities. The question then, is why policy makers and ordinary citizens should commit to closing the gap between what is and what ought to be? The answer to that question is straightforward: against a dark background of cost-of-living and ecological crises, there are good environmental and social reasons for reducing car-dependence and making Wales less of a drive to place.

From an environmental perspective, the existing car fleet of mainly ICE (internal combustion engine) is a major source of emissions in the England and in Wales. In 2019, 22% of UK greenhouse gas emissions came from the transport sector, with cars accounting for 61% of the sector's emissions. The Climate Change Committee then observed that UK 'emissions from surface transport have largely been flat since 1990'.[41] A 2019 report from Welsh Government estimated that 14% of greenhouse gas emissions in Wales in 2016 came from the transport sector, with cars alone accounting for 55% of those emissions, that equates to 7.7% of total Welsh emissions.[42.] And this report concluded that the reduction in greenhouse gas emissions in Welsh transport was way too gentle to achieve 2050 targets.

As a report from the Institute of Public Policy Research[43] points out, the overall number of cars is still expanding in the UK and with no major changes the stock is projected to rise from 34 million in 2021 to 43.6 million in 2050. As the total number of cars grows, high-emission ICE SUVs have taken an increasing share of the car market ai that SUVs now account for nearly 50% of total new car sales. Of course, the Westminster government is now promising to ban sales of ICE cars by 2030. But that deadline may be postponed and in any case the Climate Change Committee argues that the shift to battery electric vehicle with zero tailpipe emissions is necessary but not sufficient because miles travelled also have to be reduced.

In 2020, the Climate Change Committee projected that, in the long run electric cars would be cheaper to own and operate so that, *ceteris paribus*, the shift to electric cars would produce a substantial rebound effect and miles travelled would actually increase by 10%-30%[44] when reduction was required. The extent of the required reduction in miles travelled by vehicles then depended on the actual reduction in emissions in other areas such as aviation and the

[41] Climate Change Committee, (2020), 'The Sixth Carbon Budget report: Surface Transport'. https://www.theccc.org.uk/wp-content/uploads/2020/12/Sector-summary-Surface-transport.pdf
[42] Welsh Government, (2023), '2020 Wales Greenhouse Gas Emissions'. https://www.gov.wales/sites/default/files/publications/2023-02/greenhouse-gas-emissions-infographic-2020.pdf
[43] Frost, S., Massey-Chase, B. and Murphy, L. (2021), 'All Aboard: A Plan for Fairly Decarbonising How People Travel', p.6, IPPR. https://www.ippr.org/files/2021-06/all-aboard-june21.pdf, p. 6.
[44] Climate Change Committee, (2020), 'The Sixth Carbon Budget report: Surface Transport', p.10. https://www.theccc.org.uk/wp-content/uploads/2020/12/Sector-summary-Surface-transport.pdf

benefits realised by reduced meat and dairy reduced meat and dairy consumption. The bottom line was that the Climate Change Committee calculated that a 12%-34% reduction in car miles travelled by 2050 was required[45]. The environmental challenge for UK and Welsh policy makers can then be put simply: if there are mediocre emission reductions in other areas then, with an electric car fleet, a one-third reduction in car miles travelled is required over the next generation when *ceteris paribus* rebound effects will produce an increase.

If reducing car use is crucial for environmental reasons, it is also highly relevant from a social justice perspective. Car-based modes of habitation reinforce social inequalities when the car is a necessity to reach many jobs and amenities, yet ownership is unevenly distributed across high- and low-income households. Upper income households can easily afford to run a car for every working member of the household, so the car is a tool that brings them opportunity and choice. By way of contrast for low-income households the expense of running one car is a financial burden and many households without cars find their work and leisure opportunities restricted.

Low-income households not located in areas with a functioning 15-minute city infrastructure will need at least one car to freely access work and amenities. Yet, in proportion to their income, buying and running a car places a major financial burden on low-income households and they will often have to economise on other basic expenses to own and operate one car. High cost and/or old age of the householder are the main reasons why in 2011, according to official statistics, one in every four Welsh households did not own a car or van[46] and, in Wales as it is, that drastically limits choices of work, shopping and leisure for low-income households.

The social distribution of car ownership amongst differently placed household income groups, can be observed in Bridgend by comparing high and low household income districts in central, semi-central and suburban areas. The table below presents car-ownership rates in a selection of districts of Bridgend, from the central low-income district of Morfa right in the town centre to the affluent suburb of Coity in the north of the city close to the Designer Outlet via the semi-central low-income area of Newcastle and the semi-central middle-income area of Brackla.

In Morfa one-third of households have no car, 44% have one car and 25% have two cars. In this area the 15-minute city infrastructure of the town centre offers active travel possibilities and public transport connections which mitigate the inconvenience of not having a car. Significantly, in the low-income households of Newcastle, which are outside the immediate town centre of Bridgend and have less of a 15-minute city infrastructure, car ownership is much higher and only 17% of households have no car, while 42% have one and a substantial

[45] *ibid*. p.10.

[46] Future Generations Commissioner for Wales, in partnership with the Centre for Transport and Society (CTS), University of the West of England, Sustrans and New Economics Foundation, (2018), 'Transport Fit for Future Generations', p.20. https://www.futuregenerations.wales/wp-content/uploads/2018/11/20180912-Transport-Fit-for-Future-Generations-C-1.pdf

41% have two. Car ownership rises again with higher incomes in the middle-income semi-central district of Brackla, where only 10% of households with no car and almost half of the households with 2 or more cars. The drive-to society ideal of one car for every working adult is then fully realised in in the high-income suburb of Coity, which is completely car based because only 5% of households have no car and 71% of households have two or more cars.

Exhibit 10: Car ownership in selected districts of Bridgend[47]

	Average household gross income	Area	Households with no car	Households with 1 car	Households with 2 or more cars
Morfa	£20,000-£30,000	Town centre	30%	44%	26%
Brackla	£30,000-£40,000	First ring	10%	41%	49%
Newcastle	£20,000-£30,000	First ring	17%	42%	41%
Coity	£50,000-£60,000	Suburb	5%	24%	71%

Car-based habitation is inherently problematic in the current environmental and socio-economic conjuncture but car dependence is structurally embedded in the current pattern of Welsh habitation. For this reason, it is unrealistic to hope that green technologies will semi automatically make car-based habitation more sustainable, And Wales will need to reconvert its cities and towns for active travel and public transport.

[47] Calafati, L., Froud, J., Haslam, C., Johal, S. and Williams, K. (2021), 'Small Towns, Big Issues: aligning business models, organisation, imagination'. Report by Foundational Economy Research for Yr Is-adran Cartrefi a Lleoedd / Homes and Places Division Llywodraeth Cymru / Welsh Government. https://www.gov.wales/sites/default/files/publications/2021-07/small-towns-big-issues-independent-research-report.pdf also available from https://foundationaleconomycom.files.wordpress.com/2021/08/small-towns-big-issues-report-june-2021.pdf

5. What we can/ must do and what we are doing

If Wales wants to transform itself from a 25-minute drive to place into a collection of active-travel based places, it needs to adapt the 15-minute vision to its peculiar territory. The pattern of habitation is defined by many small towns, few dense urban areas, many car-dependent, low-density suburbs, retail and office parks. This results in much longer-distance travel, often between settlements, where motorised transport is required to reconcile living and working.

Given the extent of car dependence, a substantial shift away from car dependency calls for a structural transformation of the mobility mode in Wales through co-ordinated and effective public policies across different areas – transport, food delivery, work-live patterns, urban fabric – so that patterns of settlement and mobility are changed. As will become clear below, this is a major challenge because it involves reversing the public policy and business model defaults of the past 40 years which have encouraged edge of town development and automobility. It also involves recognising limits set by public sector financial resources and private sector business model requirements for profit.

Issue 1: The need to change the pattern of settlement and recentre many small Welsh towns. And to do so after 40 years when public planning has allowed, and private business models have encouraged, edge of town and out of town retail and residential development.

Recentring Welsh towns means less retail on the high street and more residents living in and around town centres. This would be a smart move in a country with many small towns, because these small towns (like the centres of Swansea and Cardiff) already have a 15-minute city infrastructure with mix of functions, pedestrian friendly areas and public transport hubs. In this case, bringing more inhabitants to live in the town centre could reinforce active travel and public transport use at scale.

Since January 2020 Welsh Government has a *Town Centre First* policy which means locating services and buildings in town centres wherever possible[48] in support of its declared long term recentring ambition that 30 % of the Welsh population should work from or close to home. And this has been supported by more than £100 million in Welsh Government grants to support all kinds of redevelopment and reuse projects in town centres.

This Welsh Government Town Centre First policy is necessary but not sufficient for recentring. In the cases of major developments, like a housing estate or further education college, for profit developers and not for profit public bodies can usually get round the policy in its existing form by pleading that no suitable brown field site exists in the town centre. Town Centre First policy needs to be backed by long term plans for town centre relocations and by much stronger planning controls to block all kinds of edge of town development especially for new build residential estates. In the next generation, these controls should also limit the redevelopment of retail and office parks for new uses as many of these parks will become redundant as more retailing moves online and home working increases.

[48] Welsh Government (2020 press release) '£90 million program to transform Wales's towns'. https://www.gov.wales/90-million-programme-transform-wales-towns

Planning restrictions on edge town development would be very helpful, but any physical restrictions ned to be reinforced by measures which tilt the balance of advantage against the continued use of established edge town retail and business sites and the old edge use the balance of financial advantage needs to be tilted more radically in other ways against the use of existing edge town retail and office park sites and the development of new edge town residential sites. The difficulty is that this is not politically or technically easy.

In a car dependent society, abundant, free car parking for users is one of the key attractions of all kinds of edge town commercial developments (retail and office parks, industrial estates and super markets), The Sparks Review of town centres for Scottish Government therefore recommended not only a 5 year moratorium on such developments but also an "out of town parking space levy"[49]. But the Scottish Government has not acted on this recommendation measure where the cost of the charge would almost certainly be passed on to the user. And there is no evidence that Welsh Government is prepared to consider such measures.

More fundamentally, in the case of new developments, business model motives and for-profit incentives all encourage edge town development on green field sites rather than in town development on brown field sites. This Issue was highlighted in the *Small Towns, Big Issues* report[50] for Welsh Government and recognised by Welsh Government in its most recent 2023 position statement on town centres. As that official statement notes, the "business model issue "is that most development is by private developers for whom out of town development on green field sites is cheaper easier and more profitable". Welsh Government then recommended "consortia of private developers and social landlords to enable housing developments in appropriate locations"[51].

At this point we have reached the limits of top-down public policy. Because no such public/ private residential consortia exist and Welsh Government grants cannot easily bring them into existence. Community based not for profits have on a small scale increased the number of town centre residents and added new leisure and social infrastructure activities, This is what Galeri Caernarfon has done in Caernarfon or Coastal Housing has done on Swansea High Street. The open question is then about the public/private business models and the alliances of stakeholders which could In Wales replicate these achievements on a larger scale. And the issue here must be about social innovation as much as it is about business models.

[49] Town Centre Action Plan Review, (2021), 'A New Future for Scotland's Town Centres", Scottish Government. https://www.gov.scot/binaries/content/documents/govscot/publications/independent-report/2021/02/new-future-scotlands-town-centres/documents/new-future-scotlands-town-centres/new-future-scotlands-town-centres/govscot%3Adocument/new-future-scotlands-town-centres.pdf

[50] Calafati, L., Froud, J., Haslam, C., Johal, S. and Williams, K. (2021), 'Small Towns, Big Issues: aligning business models, organisation, imagination, Report by Foundational Economy Research for Yr Is-adran Cartrefi a Lleoedd / Homes and Places Division Llywodraeth Cymru / Welsh Government. https://www.gov.wales/small-towns-big-issues-independent-research-report

[51] Welsh Government, (2023), 'Town centres: position statement". https://www.gov.wales/sites/default/files/pdf-versions/2023/5/2/1683031874/town-centres-position-statement.pdf

Issue 2: The need to change mobility systems to reduce dependence on the private car. And to do so after 40 years of building roads for private car use with the Welsh alternative of mass public transport by bus in unsteady decline.

Welsh Government has shown it can take the politically difficult but financially easy decisions against building new roads which generate the motor traffic that quickly fills the newly created capacity and justifies building yet more roads. Thus, in 2019 it decided against spending £1.6 billion on the M4 relief road across the Newport levels[52]. More recently in 2021, Welsh Government paused road building before announcing criteria which effectively permanently blocked most new road building[53].

Such blocking policies are however likely to encounter increasing political resistance. Without the capacity to provide an integrated alternative to the car, "anti motorist measures" add problems to the daily life of many households. They might accept high level targets in carbon reductions by the 2030s or the 2050 but in the middle of a cost-of-living crisis in the early 2020s many householders are reluctant to cope with the hassles or extra cost created by attempts to manage down car use through low traffic neighbourhoods or low emission zones. The extent of long-term opposition is unclear but the extension of the London ULEZ zone and the banning of through traffic in Oxford city centre both provoked short-term resistance which was encouraged by irresponsible politicians.

The problem then is that, given the pattern of dispersed small settlements, it is practically difficult or impossible to develop the traditional kind of dense public transport network which could provide an alternative to the car both for car users and for those without cars. Given the dispersed pattern of habitation and the non-radial pattern of movement, the traditional solution would have to be a bus network. Bus usage has been in decline for decades, the existing bus network could and should be extended and the decline in bus use could be halted and possibly reversed by cheap fares. But large-scale extension of the Welsh bus network requires subsidy which is beyond the financial capacity of Welsh Government.

Welsh Government's financial resources are limited so that in 2023 an internal Welsh Government proposal for a £1 bus fare cap was ruled out because the Welsh Government did not have the funds to support an experiment of this kind. Financial and practical problems limit more radical policies to greatly extend the Welsh bus network which would require hugely increased subsidies. Cheap fares and frequent bus services on many more routes are required to get people out of cars and offer opportunity to those without cars. But, high capacity utilisation is impossible given the dispersed pattern of habitation, non-radial movement and a requirement for frequent services on many more routes, A large subsidy is then required because there will not be enough money in the fare box to cover the cost of operations leave alone the capital investment required to replace the existing diesel bus fleet.

[52] BBC News, (2019), 'M4 relief road: Newport motorway plans scrapped', BBC. https://www.bbc.co.uk/news/uk-wales-48512697

[53] Evans, T. (2023), 'Wales road-building plans have been 'simply unaffordable', according to deputy climate minister', Sky News. https://news.sky.com/story/wales-road-building-plans-have-been-simply-unaffordable-according-to-deputy-climate-minister-12810840

If we shift then to what can be done cheaply and quickly, there are real possibilities which could produce quick wins. As exhibit 11 below shows, long-distance journeys between towns and cities (which cannot be done by active travel) are the main component of daily mobility; here it is exceedingly difficult to displace the use of the car. The real opportunities are in (a) easier travel without car or bus in the under 5 kilometres active travel radius which covers 35% of all Welsh travel to work journeys and (b) reducing the need to travel by home working and home deliveries.

The first priority is making under 5km movements easy for every age without the requirement of fitness and tolerance for bad weather which is currently prerequisite for active travel on foot or by bike. If commutes of up to 5km are to be covered without car or bus, then light motorised vehicles like electric bikes and scooters have real possibilities. The potential is considerable if electric bike ownership is supplemented by app-based hire schemes and if electric bikes can be used by the young and old as well as adults without a driving licence. Here there could be quick improvement and a major shift to more flexible, inclusive motorised transportation.

Exhibit 11: Distance travelled to work in selected areas of Wales in 2011[54]

	Active travel distance (0-5 kms) %	Motorised transport distance (over 5kms) %	Work mainly at or from home %	No fixed place %	Total workday population which is in employment %
Bridgend	33%	52%	8%	7%	100%
Gwynedd	28%	49%	15%	8%	100%
Pembrokeshire	30%	43%	18%	9%	100%
Cardiff	39%	50%	6%	5%	100%
Swansea	39%	48%	7%	6%	100%
Wales	35%	47%	11%	7%	100%

The second priority is reducing the need to travel. Welsh Government policy has already identified the opportunity of remote working with a target of 30% of the workforce working remotely on a regular basis[55]. This is building on a base of existing homeworking which in

[54] Nomis, (2012), Census 2011, ONS. Note: See note 4 for a definition of active travel. https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?collapse=yes

[55] Business Wales, (2021), 'Remote working locations confirmed across Wales', Welsh Government. https://businesswales.gov.wales/news-and-blogs/news/remote-working-locations-confirmed-across-wales#:~:text=Welsh%20Government%20is%20encouraging%20an%20increase%20in%20remote,town%20centres%2C%20reduce%20congestion%20and%20cut%20carbon%20emissions and also Welsh Government, Welsh Government, (2022), 'Smarter working: a remote working strategy for Wales'.

2011 applied already to 11% of Welsh economically active and with Covid-19 has increased. Home working could be supplemented by near home working with remote working hubs on high streets, with the benefits of less mobility and more quality time extended by four-day week working. Meanwhile, policy has not yet focused on the opportunity of home delivery of food and everyday grocery. Travel for food and grocery, including the weekly shop, is a big source of everyday movement when many poorer areas are food deserts or offer limited shopping opportunities. Food delivery schemes could easily reduce these kind of frequent, everyday trips and improve quality of life.

Post-car recentring requires a major structural change in habitation in Wales, which can only proceed slowly and will proceed fitfully if political leadership is lacking. But there are smaller adjustments which could produce significant results and Welsh Government policy should immediately focus on these quick wins.

https://www.gov.wales/sites/default/files/pdf-versions/2022/3/5/1648198107/smarter-working-remote-working-strategy-wales.pdf