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# Briefing

## Transforming transport funding to meet our climate targets

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### Summary

Transforming transport to meet climate targets will cost money. It will also save money through improving health by reducing air pollution and increasing active travel. This paper identifies the numerous ways that money can be raised for sustainable transport, including through adopting tax raising approaches used very successfully by other European countries and through scrapping spending on roads that will exacerbate climate change. A lack of money is not the reason the UK is doing so poorly on trains, trams, buses and bikes – the problem is the lack of political will to prioritise sustainable transport and put in place the funding streams to make it happen.

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## 1. Introduction

This is the seventh in a series of eight papers commissioned by Friends of the Earth on the transport policies that are needed to cut carbon emissions in line with the Paris Agreement.

In previous papers, we argued that a strategy focussed purely on electrifying the vehicle fleet (while allowing traffic volumes to grow) does not achieve a sufficiently rapid reduction in carbon emissions to limit global warming to 1.5°C above pre-industrial levels. The carbon arithmetic means that we also need to reduce traffic volumes significantly, and this must happen within the next 10-12 years. This implies a very different approach to the one we have at present. It means that we must instigate a rapid transformation of our transport system to offer excellent low-carbon alternatives to driving and to discourage car use, as well as achieving a faster transition from petrol and diesel to electric cars. This will require major capital investment in sustainable transport infrastructure (e.g. tram networks and cycleways) and low-carbon buses, and increased funding for operation of a Swiss-style comprehensive public transport network.

This paper looks at how the transformation of our transport system described in previous papers can be funded.

## 2. Principles for reform of transport funding

Three simple principles underlie our suggested approach:

PRINCIPLE 1: Transport budgets should be re-allocated from climate (and other environmental) 'bads' to climate 'goods'

PRINCIPLE 2: Local authorities should have powers to raise their own funds for sustainable transport

PRINCIPLE 3: Increased funding for sustainable transport should be drawn from all the beneficiaries of better transport services, not just passengers and tax-payers.

Sections 3 – 5 describe how each of these three principles should be applied. Section 6 looks at how politicians can achieve wide buy-in for a change from our current unsustainable funding arrangements to a new approach that would be fairer, more effective, and would result in a better transport system for all.

## 3. Principle 1: Reallocate transport budgets from climate 'bads' to climate 'goods'

A large proportion of capital expenditure on transport is for projects that make carbon emissions and other environmental impacts worse, not better. The biggest problem is the amount of money which is being spent on road-building. This will generate increases in traffic and in some cases vehicle speeds, in a period when most cars are still petrol- or diesel-powered, and hence will increase carbon emissions and health-damaging air pollution.

In 2013, the Treasury signalled the government's intention to "commit to the biggest programme of investment in roads since the 1970s" and said that "the government will treble annual investment in major road schemes by 2020-21"<sup>1</sup>. The Department for Transport subsequently allocated more than £15 billion to Highways England for a massive national road-building programme (Road Investment Strategy 1, RIS1) between 2015 and 2020<sup>2</sup>.

In the autumn 2018 budget, the Chancellor went further, announcing that the government would deliver "the *largest ever* strategic roads investment package worth £28.8 billion from 2020-2025"<sup>3</sup> [our italics]. Income from Vehicle Excise Duty in England (about £6 -7 billion per year) has been ring-fenced to form a National Roads Fund to pay for this<sup>4</sup>.

It is worth taking stock of the likely carbon impact of this huge expansion of road building. Using Highways England's own figures for increased carbon emissions from road schemes built in the eight years from 2002 to 2010, we estimate that those schemes caused an increase in annual carbon emissions from the trunk road and motorway network of at least 3%<sup>5</sup>. The significantly greater expenditure on the strategic roads network between 2015 and 2025 (RIS1 in the five years to 2020 and Road Investment Strategy 2, RIS2, from 2020 to 2025) means that schemes to be built in that period will cause an even bigger increase in annual carbon emissions. We estimate that this could be as much as **17%** of current carbon emissions from trunk roads and motorways. In other words, the national roads investment strategy is very bad indeed in its carbon impact<sup>6</sup>.

Other government funding streams are also being used to increase road capacity. The Housing Infrastructure Fund is being used to fund road schemes to open up land for new (car-dependent) housing development, and extrapolating from the HIF funding that has been allocated so far we estimate that this could result in additional funding for road schemes of about £1.8 billion over six years<sup>7</sup>. The National Productivity Investment Fund (NPIF) includes £1.4 billion from 2017-18 to 2020-21 for roads and local transport, of which the majority is for road schemes<sup>8</sup>.

It isn't just national government that has its priorities upside down. Local transport investment is also strongly skewed towards road schemes. For example, about two-thirds of transport capital spending by Local Enterprise Partnerships is allocated to local road schemes, and we estimate that this was about £2.6 billion over the last four years<sup>9</sup>. Total capital expenditure on local roads (ranging from structural maintenance to construction of new roads), by all parts of the public sector, is considerably larger than this: government accounts show a total of £20.6 billion capital expenditure on local roads between 2013/14 and 2017/18<sup>10</sup>.

The amount of capital expenditure on roads dwarfs capital expenditure on buses, trams, cycling and walking<sup>11</sup>. Government accounts show that in the last five years, capital spending on roads by all parts of the public sector was nearly 30 times bigger than capital spending on these sustainable modes: £34 billion compared to £1.2 billion. Given the government's current plans, this proportion will almost certainly worsen over the next five years.

There is thus a great deal of potential to increase investment in local sustainable transport, simply by reallocating money that is currently being spent on *unsustainable* transport. Diversion of capital currently allocated to roads could provide capital (and extra revenue funding) for buses, trams, cycling and walking of at least an extra £7 billion per year (based on past spending<sup>12</sup>), and up to an **extra £10 billion per year** (based on planned future spending<sup>13</sup>), while still staying within the existing transport capital budget. This would be transformative. It would enable a major programme of construction of tram systems powered by green electricity in urban areas; rapid conversion of the bus fleet to clean electric buses; redesign of roads to provide comprehensive networks of cycleways and safe streets for pedestrians; and increased revenue funding that could be used to improve services.

This increase in funding for local sustainable transport would need to be accompanied by action to build local capacity in order to spend the money wisely. Local authorities have been cut back to the bone and many do not have the staff and expertise to manage a substantially larger sustainable transport budget. As argued in previous papers, changes to local transport governance will be needed, including re-regulation of bus services (which will itself achieve savings that can be reinvested), and adoption of legally enforceable regional and local carbon budgets. There should be long term 15-year funding deals between government and local authorities, conditional upon developing local transport plans that are compliant with carbon budgets, to enable local authorities to plan properly. We will need new bodies to provide training, advice and support to local authorities while they build their expertise (which we called ‘Local Public Transport for England’ and ‘Walking and Cycling for England’ in previous papers).

#### 4. Principle 2: Local authorities could have powers to raise their own funds for sustainable transport

Transport funding is strongly centralised in the UK, and local authorities are heavily dependent on decisions made in Whitehall. In other countries, local authorities have more freedom to raise income from local sources, and this is used to fund both capital investment in new transport infrastructure and ongoing operating costs.

Table 1 summarises 16 local funding sources that are used by local authorities around the world to pay for their public transport systems. Only three of these are widely used in the UK: development charges, parking charges and council tax.

**Table 1: Possible local funding sources for sustainable and local public transport, from international examples<sup>14</sup>**

Type of funding source	Examples
<b>WIDELY USED IN UK</b>	
<b>Development charges</b>	Widely used. In Britain, the Community Infrastructure Levy and Section 106 agreements can fund public transport capital upgrades and walking/cycling infrastructure, but offer little for subsequent operating costs. CIL and S106 capture only a small proportion of landowners' windfall profits from development.
<b>Charges for parking on-street and on public land</b>	A widespread source of income in UK and elsewhere, some of which is used for public transport.
<b>Residential property tax</b>	Widely used to support public transport in USA. Being used to expand the Metro in Paris. A small proportion of council tax in UK is used for public transport.
<b>USED IN A FEW PLACES IN UK</b>	
<b>Business property tax</b>	Widely used to support public transport in USA. Being used to expand the Metro in Paris. The Crossrail project in London raised £4 billion from a temporary supplement to business rates.
<b>Levy on workplace parking</b>	Nottingham has introduced a workplace parking levy, which it uses to help fund its tram. Melbourne, Perth and Sydney also use workplace parking levies to fund public transport.
<b>Road user charges</b>	London, Singapore, Stockholm and Gothenburg apply congestion charges. London and Milan apply local air pollution charges. San Francisco is using bridge tolls for public transport improvements. Lorries in Germany pay a fee per km, but this is not locally controlled.
<b>NOT USED IN UK</b>	
<b>Local payroll levy</b>	Widespread in France (Versement Transport). In Oregon, the cities of Portland and Eugene levy 0.6% for public transport. New York levies 0.34% for public transport.
<b>Visitor lodging levy</b>	Local authorities throughout Switzerland levy charges at various rates for each night of accommodation, with funds partly used to support public transport, on which visitors get free local travel. Paris also has a visitor levy to support public transport improvements. Local authorities in many other countries (including Austria, Belgium, Germany, Italy, the Netherlands and Spain) also use visitor lodging levies to raise income for local services, although not always for local transport.

Type of funding source	Examples
<b>Land value uplift levy</b>	A land value uplift levy is an additional tax levied on residential and/or commercial sites when they benefit from major public transport upgrades. Miami, Los Angeles, and Denver defined ‘transit benefit districts’ to capture property value uplift. Tax Increment Financing borrows to build public transport on the basis of future increases in property taxes (Atlanta is an example).
<b>Land value capture</b>	Public authorities in France, Germany and the Netherlands are able to acquire undeveloped or derelict land for development at close to its ‘existing use value’, then develop it themselves or sell in parcels to developers. Around 90% of the resulting uplift in land value is captured to fund infrastructure and affordable housing.
<b>Local income tax</b>	Cincinnati levies 0.3% local income tax to support public transport.
<b>Local corporation tax</b>	New York partly funds public transport from a local surcharge on corporation tax.
<b>Local sales tax</b>	The most common dedicated source of public transport funding in USA. Los Angeles levies 0.5% for public transport and some road schemes; Seattle levies 1.4% for public transport.
<b>Property sales tax</b>	New York partly funds public transport from a local tax on property transactions.
<b>Levy on commercial car parks</b>	Chicago levies \$0.75-\$2.00 per day as a surcharge on parking.
<b>Local vehicle tax</b>	33 states and 27 local governments in USA use a vehicle tax to fund public transport. Toronto collects \$60/vehicle/yr.
<b>Local fuel tax</b>	Vancouver levies 15c/litre for public transport.

The three funding sources that are widely used in the UK (development charges, parking charges and council tax) provide very limited amounts of income for public transport. Development charges, in the form of Section 106 agreements, currently generate only about £130 million per year for transport schemes<sup>15</sup>. Parking charges generated net income of £870 million in England in 2017/18<sup>16</sup>. Only about 2 pence in every £1 raised from council tax is spent on public transport<sup>17</sup>.

By contrast, the amount of additional funding that *could* be generated from some of the sources listed in Table 1 is substantial. For example:

- **Road user charges:** We estimate that a road user charge or Eco Levy on driving in urban areas could raise around **£8 billion per year** in Britain (if applied to cars and vans at a rate of 6 pence per km<sup>18</sup>), while also reducing car traffic in these areas by more than a quarter. In addition, an Eco Levy on driving on the Strategic Road Network (motorways and trunk A roads) could raise around **£5 billion per year**, which we have suggested in an earlier paper could be used to substantially reduce rail fares<sup>19</sup>. A distance based HGV charge designed to recoup the full costs HGVs impose on society could raise around **£7 billion per year**, which could be used to increase rail capacity for freight, electrify the rail network, connect freight sites to the rail network and develop new types of rail freight services<sup>20</sup>.
- **Land value capture:** more effective capture of landowners' windfall profits from housing development could provide around **£11 billion per year** in England<sup>21</sup>. This could be achieved by changing the law so that public authorities leading a land assembly process were only required to pay land-owners an amount close to the 'existing use value' of the land (rather than an amount reflecting the much higher value of the land once developed).
- **Payroll levy:** A local payroll levy could raise up to **£7 billion per year** (if widely applied so that it generated comparable income to the French public transport payroll levy, Versement Transport, VT<sup>22</sup>).
- **Visitor lodging levy:** A visitor lodging levy could raise around **£1 billion per year** in Britain (if applied at a flat rate of £2 per overnight stay to all visitors<sup>23</sup>).
- **Land value uplift levy:** Research commissioned by Transport for London found that a sample of eight proposed transport schemes in London with a total capital cost of £36 billion (including a proposed new rail line, extension of an Underground line, and upgrade of an Underground station) could potentially increase the value of *existing* property and land nearby by **£63 billion**, and could unlock land for development with a value of **£24 billion**<sup>24</sup>. These are absolute increases in value (not annual revenue flows), but tax reform to capture some of this windfall could generate significant future income, against which a local authority could borrow money for major sustainable transport infrastructure schemes. TfL concluded that "the scale of the opportunity to use land value capture as a method of funding transport investment is vast". There is similar evidence from outside London: for example, a survey by Nationwide building society found that proximity to a Metrolink stop in Manchester or a rail station in Glasgow adds 5-6% to the value of a house<sup>25</sup>. The potential of a land value uplift levy is likely to be greater in larger cities.

For some of these funding sources (land value capture and a visitor lodging levy), only a proportion would be likely to be available for transport schemes, as local authorities would also wish to use the income for other purposes: in particular, land value capture could pay for

increases in the amount of genuinely affordable housing that is built, and a visitor lodging levy could be used in part for public realm improvement, street cleaning, and tourism services. Nevertheless, there is significant potential to generate increased local funding for transport.

The most appropriate funding sources are also likely to vary from area to area. For example, rural areas will have less capacity to raise significant funds from a payroll levy, but some (such as National Parks, Areas of Outstanding Natural Beauty and seaside areas) will be well-placed to apply a visitor lodging levy.

Local fund-raising powers would not remove the need for central government funding, particularly for economically disadvantaged areas where the ability to raise local funds might be less. Government could incentivise local authorities to take advantage of new fund-raising powers by offering matched funding, with a higher 'gearing' in more deprived areas – for example, Tees Valley might receive 90% match, while London might only receive 5%, reflecting these areas' different abilities to raise money from sources such as a payroll levy. However, powers to raise local funding to improve local transport could command local support, and this would increase the total amount of investment available. Greater local control over income would give local authorities more freedom to address local priorities and fund what was most needed, rather than having to rely on ring-fenced funds for specific purposes. It would also reduce the large amount of wasted effort that goes into bidding competitively for government funding.

Seattle provides a good example of the way in which local revenue-raising powers can be used to improve local public transport. The Central Puget Sound Regional Transit Authority (which covers Seattle and surrounding areas, a region with a population of about 3.1 million people<sup>26</sup>) has repeatedly received voter backing for increases in local taxation to enable major expansion of the public transport network. Just over half of the transport authority's funding comes from a local vehicle tax, property taxes and sales taxes. Most recently, in 2016, voters supported an increase in the local vehicle tax from 0.3% to 1.1% of vehicle value (paid on purchase and then annually); a new annual property tax of \$0.25 per \$1000 of property value (i.e. \$100 per year for a \$400,000 house); and an increase in a sales tax hypothecated to transport from 0.9% to 1.4%<sup>27</sup>. The additional funding will enable the transport authority to build 62 miles of new light rail lines; build a bus rapid transit system on major highways; extend railway platforms to increase rail capacity; and provide funding for operation of the increased services<sup>28</sup>. The total cost of the expansion programme between 2017 and 2041 is \$54 billion, of which slightly over half of the funding will come from the new taxes (\$28 billion), with the rest coming from bonds, existing funds, and federal grants<sup>29</sup>. This scale of expansion of public transport is what we need to be doing in Britain, too, in order to tackle climate change. Enabling local authorities to raise funds (with matched increases in government funding) could unlock a similar ambition here.

## 5. PRINCIPLE 3: Increased funding for sustainable transport should be drawn from all beneficiaries

The UK approach to funding public transport investment and operations is very narrow: politicians argue that funding must come either from fares paid by passengers, or from (national) tax-payers, as though there were no other options. For most of the last four decades, governments have taken the view that tax-payers should pay less, and fare-payers correspondingly more.

This binary choice is a major barrier to sustainable transport improvements. Local authorities that want to expand their public transport network are reliant on securing funding from national government, and if that is not available, they are powerless to act. For example, Leeds, one of the fastest growing cities with chronic road congestion, has twice had bids for funding for a tram system turned down by the government<sup>30</sup>.

There are a number of beneficiaries of an efficient public transport system, in addition to existing fare-payers, and there is a logic that *all* the beneficiaries of such a system should make a contribution to the costs. For example:

- **Employers** benefit, because a good public transport system (and good cycleways etc.) enable their staff to travel to work, and increase the catchment area from which they can recruit employees;
- **Tourists** benefit, because a good public transport system enables them to explore the city or countryside they are visiting;
- **Land and property owners** benefit, because public transport improvements increase the value of their asset;
- **Car-users** benefit, because an efficient public transport system reduces congestion. A majority of drivers would actually prefer to swap their cars for public transport if services were better<sup>31</sup>.

A new approach to transport funding, in which local authorities designed ambitious sustainable transport investment packages which drew on contributions from all local beneficiaries, backed up by a contribution from national government, could unlock substantially more funding than the current approach.

Four **funding reforms** would make this new approach possible.

First, **local transport authorities should be given the power to introduce a local public transport payroll levy**. Employers would contribute towards the cost of a city's public transport system in proportion to the size of their workforce. As described in an earlier paper<sup>32</sup>, the French public transport payroll levy (Versement Transport, or VT) is used by more than 80% of France's 300+ urban transport authorities, and funds more than half of their public transport infrastructure investment and operational subsidy. It pays for cities to build

or extend their tram networks, funds major improvements to bus networks (including new routes and construction of dedicated bus ways); and enables public transport fares to be kept low or even removed altogether (as in Dunkerque and elsewhere).

Second, **local authorities should be given the power to introduce a visitor lodging levy**, using some of the resulting income for local transport (and, as in Switzerland, giving visitors a ‘guest card’ which entitles them to free use of local public transport). The Scottish Government has committed to introduce legislation to allow local authorities to implement a visitor lodging levy, and the proposal has cross-party support<sup>33</sup>. Edinburgh may be the first local authority to bring in a levy: the council anticipates that a ‘transient visitor levy’ of £2 per night would raise £15 million per year, and the levy is supported by 85% of Edinburgh residents and a majority of businesses and accommodation providers. Consultation suggested that the priorities for use of the levy are street cleaning, transport, parks and policing of tourist areas<sup>34</sup>.

Third, the law should be changed to **enable local authorities to buy or assemble land for development at close to its ‘existing use value’** (in particular, for housing), and to capture the increase in value that results from planning permission being granted<sup>35</sup>. This would provide funding for construction of sustainable transport infrastructure to and within new developments, including new tram and rail lines and cycleways. It would enable an excellent sustainable transport network to be built before new residents move in. This approach is the norm in France, Germany and the Netherlands, where about 90% of the increase in land value as a result of a change of use is captured by public authorities (compared to only about 27% here, captured via development charges)<sup>36</sup>.

Fourth, current **property taxes** (council tax for residential property, and business rates for commercial property) **should be reformed so that they capture increases in the value of existing property that occur because of public investment in infrastructure, such as tram lines or railway stations**. This has recently been recommended by the House of Commons Housing, Communities and Local Government Select Committee<sup>37</sup>.

In addition to these changes, the government should encourage local authorities to take advantage of the powers they already have to introduce an **Eco Levy for driving** (a road user charge) or a **workplace parking levy**. We argued in a previous paper<sup>38</sup> that the government should make introduction of a distance-based Eco Levy in urban areas obligatory within five years, as a means of achieving carbon budgets, and that it should provide up-front funding immediately to enable sustainable transport alternatives to be improved in preparation for the Eco Levy.

## 6. Making it happen

There is no shortage of potential funding sources to create and operate a low-carbon sustainable transport system in our towns and cities. But there are two problems: money is being spent on the wrong things, making carbon emissions worse, not better; and we don’t have the right mechanisms to secure contributions from all those who would benefit from a better transport system.

If government gave local authorities the powers to raise funding from employers, visitors, and land and property owners, and at the same time offered matched funding for sustainable transport schemes (re-purposing money that until now has been spent on road-building), it could unlock a wave of ambition for clean, green, affordable, connected transport systems.

As in Seattle, towns and cities would be able to decide whether it made sense for all the beneficiaries of such a transport system to make a contribution to help make it happen. Because everyone would be contributing, it would feel fair; and because everyone would be better off, it would feel attractive. There is evidence from America that people *do* vote to pay more tax if they can see it will benefit them directly. Seattle is exceptional in the scale of its ambition, but across the USA, around 70% of referendums about increasing taxes to fund transport projects receive the support of voters. In 2018, 34 out of 39 public transport ballot measures received voter approval, and 13 out of 16 cycle and pedestrian ballot measures<sup>39</sup>. Most of these were at regional, county or municipal level – that is, people were voting to pay more sales or property tax to enable a transport project in a place that was local to them. It would not be necessary to introduce ballots like this here (public consultation can establish whether there is local support), but the American system of referenda provides evidence that people are willing to pay more tax if it will lead to a better local transport system.

Similarly, evidence from Edinburgh shows that residents, businesses and accommodation providers all support introduction of a transient visitor levy to improve facilities and services related to tourism<sup>40</sup>. Surveys (in London) and referenda (in Stockholm and Milan) show people support road user charges aimed at cutting congestion and air pollution<sup>41</sup>. In France, local employers have supported introduction of and increases in the public transport payroll levy to pay for tram systems and, in some cases, fare-free transport<sup>42</sup>.

More than anything, we need a sense of vision to create public transport systems that are fit for a low-carbon future. But knowing that the funding is there to make the vision happen could unlock our collective civic imagination. In France, the renaissance of tram systems and associated public realm enhancements over the last few decades owes a lot to the introduction of the public transport payroll levy.

As noted in an earlier paper, transport is now the rogue sector in our efforts to tackle the climate emergency. Business-as-usual on transport policy and funding has brought us to an ecological tipping point. In order for us not to tip the world into catastrophic climate impacts, we need a political tipping point. The large-scale changes in funding for transport that are proposed in this paper may sound unlikely. But we live in extraordinary political times, in more ways than one. Our proposals offer a practical means for politicians to start dealing with climate change, while also stimulating investment across the country, creating places that have clean air, healthy streets, and efficient economies, and where everyone – residents, businesses, visitors and land and property owners – is better off.

## 8. Conclusions

The following are 'must do' actions to provide the funding for a low-carbon transport system:

- Cancel the £28.8 billion National Roads Fund and reallocate all national and local government funding that is currently earmarked for road schemes to sustainable local transport, generating a fund of **£7-10 billion per year**.
- Give local authorities the power to introduce a public transport payroll levy, generating up to **£7 billion per year**.
- Give local authorities the power to introduce a visitor lodging levy, providing up to **£1 billion per year**.
- Change the law on land compensation so that local authorities can buy or assemble land for development at close to its existing use value, freeing up to **£11 billion per year** for construction of sustainable transport infrastructure.
- Reform property taxation to capture increases in the value of existing property and land that occur when tram lines and railway stations are built with public money.
- Require urban local authorities to bring in an Eco Levy for driving, generating about **£8 billion per year**.
- Introduce an Eco Levy on the Strategic Road Network, generating about **£5 billion per year**, and a distance-based HGV charge, generating about **£7 billion per year**.

Taken together, these funding sources have the potential to generate locally-controlled income of £27 billion per year, of which a significant proportion – perhaps around **£21 billion per year** – might be spent by local authorities on sustainable transport. In addition, there could be **£7-10 billion per year** in government grants to local authorities for sustainable transport, and **£12 billion per year** that could be used by national government to reduce rail fares and shift freight from road to rail.

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<sup>1</sup> HM Treasury (2013) [Investing in Britain's Future](#)

<sup>2</sup> The Road Investment Strategy (RIS). RIS 1 covers 2015-2020; while RIS 2 covers 2020-2025. See: <https://www.gov.uk/government/collections/road-investment-strategy>

<sup>3</sup> HM Treasury (2018) [Budget 2018](#)

<sup>4</sup> [Budget 2018](#) (paragraph 4.9) states that the National Roads Fund will be £28.8 billion between 2020 and 2025. The Road Investment Strategy RIS2 is expected to cost £25.3 billion, and the National Roads Fund will also provide £3.5 billion for schemes on a Major Road Network of local authority-controlled roads (DfT 2019 [Investment Planning Guidance for the Major Road Network and Large Local Majors Programme](#)). The Office for Budget Responsibility forecasts that income from Vehicle Excise Duty will rise from £6.2 billion in 2017-18 to £7.5 billion in 2023-24 (Table C.5 of [Budget 2018](#)).

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<sup>5</sup> Sloman L., Hopkinson L. and Taylor I. (2017) [The Impacts of Road Projects in England](#). Report for CPRE, March 2017.

<sup>6</sup> In making this calculation, we assume that on average, the roads being built, or to be built, between 2015 and 2025 will have a similar effect on vehicle speeds and traffic volumes per £ of expenditure as the schemes that were built between 2002 and 2010. Expenditure from 2002 to 2010 has been uprated to 2017 prices. The calculation is not affected by future improvements in vehicle efficiency, since this will affect both the total carbon emissions from the motorway and trunk road network and the increase in emissions as a result of higher speeds and induced traffic on new roads.

<sup>7</sup> The Housing Infrastructure Fund is £5.5 billion between 2018-19 and 2023-24. There are two funding streams: Forward Funding and Marginal Viability Funding. **Forward Funding** is for large, strategically significant infrastructure projects; £1.9 billion has been awarded so far to 14 schemes including the Carlisle Southern Link Road (£102 million); Truro Northern Access Road (£47 million); Beaulieu station and north east bypass (£218 million); and road schemes in Oxfordshire (Access to Didcot Garden Town, £218 million) and in Essex (Tendring Colchester Borders Garden Community, £100m). **Marginal Viability Funding** is intended to provide funding to 'unlock' individual housing schemes, and has so far been confirmed for 110 schemes, costing £759 million. Ministry of Housing, Communities and Local Government [Housing Infrastructure Fund](#), accessed 26 May 2019 and 26 October 2019. Looking at the Forward Fund projects: 40% of expenditure is in London, and all of this is for non-road schemes; 60% of expenditure is outside London, and at least half of this is for road schemes. The Marginal Viability Fund is so far weighted more heavily to schemes outside London (which account for 89% of expenditure). If we conservatively assume that roughly a third of HIF funding (i.e. 60% x 0.5) will be used to widen existing roads or build new ones, it will mean additional funding for roads of about £1.8 billion over six years.

<sup>8</sup> HM Treasury (2018) [Budget 2018](#), Table 4.1. The total of £1.4 billion for 'roads and local transport' is not disaggregated. However, our analysis of the money from NPIF allocated in 2017 suggests that 84% of the allocation is for road schemes (Department for Transport press notice 19 October 2017 [Government invests £350 million improving local roads](#) and associated spreadsheet). There is also likely to be funding for roads schemes from other funds that sit under NPIF, including the Cambridge – Milton Keynes – Oxford Arc and the Transforming Cities Fund.

<sup>9</sup> Local Enterprise Partnerships (LEPs) received £9.1 billion of funding from the Local Growth Fund in three tranches of Growth Deals between 2015-16 and 2018-19, and 42% of this (i.e. £3.8 billion) was spent on transport schemes (National Audit Office (2019) [Local Enterprise Partnerships: an update on progress](#)). Analysis following the first and second tranches of Growth Deals found that around two-thirds (67%) of LEPs' transport spending was allocated to road schemes or 'mixed' schemes that included road-building (Campaign for Better Transport (2016) [LEP Watch update](#)). If the allocation was similar in the third tranche of funding, around £2.6 billion may have been spent on road schemes by LEPs during this four-year period.

<sup>10</sup> This is likely to have come from various funding pots including local authorities Integrated Transport Block and the Large Local Majors Fund as well as the Local Growth Fund money allocated via Local Enterprise Partnerships.

<sup>11</sup> National Statistics (2018) [Country and regional analysis interactive tables](#) report expenditure in five categories: 'local public transport' (which we interpret as bus, tram and light rail); 'rail'; 'local roads'; 'national roads'; and 'other'. The 'other' category is separately broken down into 42 sub-categories which we individually scrutinised to identify five sub-categories that we interpreted as local sustainable transport (these were DfT cycling; DfT sustainable transport; ITSO grant; Transport Direct; DfT accessibility). Over the period from 2013/14 to 2017/18, our estimate is that capital expenditure can be split as follows: 1% local sustainable transport (=local public transport + five sub-categories of 'other' expenditure); 39% roads (=local roads + national roads); 58% rail; 1% cleaner vehicles and low carbon; 1% other (37 sub-categories, covering air, maritime etc.).

<sup>12</sup> Our 'looking backwards' estimate of £7 billion per year is based on past capital expenditure on national and local roads of £34 billion over the period 2013-14 to 2017-18 i.e. an average of £6.8 billion per year (data calculated from National Statistics (2018) [Country and regional analysis interactive tables](#)).

<sup>13</sup> Our 'looking forwards' estimate of £10 billion per year includes average National Roads Fund expenditure of £4.8 billion per year (based on published figure of £28.8 billion over 6 years); assumed £0.3 billion per year from HIF (based on extrapolation of proportion allocated to road schemes so far); assumed £0.35 billion per year from NPIF; and assumed expenditure on local roads of £4.1 billion per year (based on historic expenditure on local roads of £20.6 billion between 2013/14 and 2017/18, recorded in government accounts). This gives a total of £9.6 billion per year.

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<sup>14</sup> Adapted from Taylor I. and Sloman L. (2016) [Building a World-class Bus System for Britain](#), section 5.8, drawing on evidence from Litman T. (2015) Local funding options for public transportation; Goldman et al. (2001) Local option transportation taxes in the United States; Freemark (2009) How to fix transit financing; PWC (2014) Crossrail 2 funding and financing study; and Aubrey (2018) Gathering the windfall: how changing land law can unlock England's housing supply potential.

<sup>15</sup> Lord A., Dunning R., Dockerill B., Burgess G., Carro A., Crook T., Watkins C. and Whitehead C. (2018) [The Incidence, Value and Delivery of Planning Obligations and Community Infrastructure Levy in England in 2016-17](#) Report for Ministry of Housing, Communities and Local Government. The reported figure of £131 million for transport schemes from Section 106 contributions is less than 3% of total S106 contributions in 2016-17. Some income from the Community Infrastructure Levy may also be spent on transport schemes but a spending breakdown is not available. Note that some S106 and CIL money is spent on road schemes.

<sup>16</sup> RAC Foundation (2019) [Local authority parking finances in England](#)

<sup>17</sup> Which 22 November 2017 [Where does your council tax money go?](#) Web-page accessed 30.08.2019

<sup>18</sup> Car / van traffic on urban roads (A roads and minor urban roads) in Britain was 176 billion vehicle km in 2018, according to [TRA0204 Road traffic by vehicle type and road class](#). We assumed each 10% increase in the combined cost of fuel and road user charges reduces miles driven by 3% (i.e. an elasticity of -0.3, in the mid-range of fuel price elasticity estimates quoted by [Road traffic demand elasticities](#)); a cost of petrol of £1.21/litre; and average new car fuel consumption of 5.5l per 100km (by the time road pricing is introduced, this will be the average fuel efficiency). Using these assumptions, a 6p/km charge for cars and vans on urban roads would reduce car distance by 27%, and raise £7.7 billion per year. A 6p/km charge is equivalent to about the price of a cup of coffee (£2) added to the average 33km daily commuter return trip, or about £316 per year for an average car mileage of 5272km/year.

<sup>19</sup> Sloman L. and Hopkinson L. (2019) [An Eco Levy for driving - cut carbon, clean up toxic air, and make our towns and cities liveable](#)

<sup>20</sup> Joseph S. (2019) [What level of ambition is achievable and worthwhile for rail freight?](#) Report for Rail Freight Group

<sup>21</sup> Aubrey T. (2018) [Gathering the windfall: how changing land law can unlock England's housing supply potential](#) Centre for Progressive Policy. Note that this estimate is only for England, and not the rest of the UK.

<sup>22</sup> Richer C. (2017) [Le financement des transports collectifs à l'heure de la mobilité durable: quel avenir pour le versement transport?](#)

<sup>23</sup> Visit Britain (2018) [2018 Snapshot](#) records that overseas visitors to the UK spent 266 million nights here in 2018, while Visit Britain (2018) [GB - All Trip Purposes](#) records that there were 372 million domestic overnight trips in Britain in 2018, of which 133 million involved a stay in the home of a friend or relative, or a second home, giving a net figure of 239 million domestic overnight trips.

<sup>24</sup> Transport for London and Greater London Authority (2017) [Land value capture](#)

<sup>25</sup> The Guardian 20 August 2014 [What the distance from the station does to the price of your house](#)

<sup>26</sup> Sound Transit (2017) [Schedule of Sources and Uses of Funds by Subarea](#)

<sup>27</sup> Sound Transit [Paying for regional transit: voter-approved taxes that pay for new transit](#) web page accessed 20.08.2019

<sup>28</sup> Sound Transit [History of voter-approved plans](#) web page accessed 20.08.2019

<sup>29</sup> Sound Transit (2016) [Sound Transit 3 Appendix A: Detailed description of facilities and estimated costs](#)

<sup>30</sup> [Railway Technology](#) web-page. Accessed 21.08.2019.

<sup>31</sup> RAC (2018) [6 in 10 drivers would switch to public transport](#) web-page accessed 30.08.2019

<sup>32</sup> Sloman L and Hopkinson L (2019) [Transforming public transport: regulation, spending and free buses for the under 30s](#)

<sup>33</sup> Edinburgh Evening News 26 March 2019 [Kezia Dugdale: Capital needs tourist tax now, so why delay?](#)

<sup>34</sup> City of Edinburgh Council 7 February 2019 Committee Meeting item 8.4 [Edinburgh Transient Visitor Levy Consultation 2018](#)

<sup>35</sup> This would require amendment of the Land Compensation Act 1961. A recent inquiry by the House of Commons Housing, Communities and Local Government Select Committee (2018) [Land Value Capture](#) noted that amendment of the Land Compensation Act to remove the right of landowners to 'hope value' was seen as a key reform by a large number of those submitting evidence to the inquiry, including the Chartered Institute of Housing, the Royal Town Planning Institute, the Local Government Association, Shelter, the Centre for Progressive Capitalism, Civitas, the National Landlords Association, the National Housing Federation, the Institute for Public Policy Research and the Town and Country Planning Association. Reform of the Land Compensation Act 1961 to remove the right of landowners to 'hope value' was opposed by the Country Landowners Association, the British Property Federation, and Barratt Developments.

<sup>36</sup> Aubrey T. (2018) [Gathering the windfall: how changing land law can unlock England's housing supply potential](#) Centre for Progressive Policy.

<sup>37</sup> House of Commons Housing, Communities and Local Government Select Committee (2018) [Land Value Capture](#) See Recommendation 22 on page 50, and paragraph 128 on page 45.

<sup>38</sup> Sloman L. and Hopkinson L. (2019) [An Eco Levy for driving - cut carbon, clean up toxic air, and make our towns and cities liveable](#)

<sup>39</sup> Laska A. and Puente R. (2019) [Transportation at the Ballot Box 2018](#) Eno Center for Transportation. Interestingly, although there were more ballot measures in 2018 asking for approval of road schemes (113), their success rate was slightly lower, with 80 (7 out of 10) receiving voter approval, compared to an approval rate of 8 out of 10 for bike / pedestrian ballot measures and nearly 9 out of 10 for public transport ballot measures. Voters approved substantially more 'multimodal' and public transport investment (a total of \$33.3 billion) compared to roads investment (\$7.5 billion).

<sup>40</sup> City of Edinburgh Council 7 February 2019 Committee Meeting item 8.4 [Edinburgh Transient Visitor Levy Consultation 2018](#)

<sup>41</sup> Sloman L. and Hopkinson L. (2019) [An Eco Levy for driving - cut carbon, clean up toxic air, and make our towns and cities liveable](#)

<sup>42</sup> See for example Koblowski W (2018) [Free public transport and why we don't pay to ride elevators](#), which describes the view of businesses in one French town, Aubagne: "We can suppose that the increase of the versement transport constituted an additional cost [to local companies]. But we also met some CEOs who said that if their workers and employees arrived more on time, if they are collected by public transport, and if they're not subject to the panic that one can observe on roads, the companies were ready to contribute to the versement transport knowing that they would receive a service in return for their employees."