

**Garden City Standards for the 21st Century**  
**Practical Guides for Creating Successful New Communities**

**guide 13**  
**sustainable  
transport**





**tcpa**

Practical Guides for Creating Successful New Communities

**Guide 13: Sustainable Transport**

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**The Lady Margaret  
Paterson Osborn Trust**

**vectos.**

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Cover photograph of cycling in Copenhagen by Tolu Olarewaju on Unsplash.

## guide 13

# sustainable transport

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# The TCPA Practical Guides

Across the UK there is a shortage of housing, and it is increasingly understood that we need to plan and build new large-scale developments, in addition to renewing existing towns and villages. At the same time, many people worry that any new places built will be no more than soulless, unattractive dormitory suburbs. How can we prevent such outcomes? How can we ensure that new large-scale developments become socially and economically successful places – places that will improve over time, and in which people will want to live for generations to come? The answer lies in the Garden City development model – a proven way of funding, creating and maintaining successful high-quality places. A true Garden City is a place created following the Garden City Principles, set out in the box below.



National planning policy guidance on a range of issues has been greatly reduced, so practical advice about how to create successful new places is more important than ever. The Practical Guides – on location and consent; finance and delivery; design and masterplanning; planning for energy and climate change; homes for all; planning for arts and culture; planning for green and prosperous places; creating health-promoting environments; long-term stewardship; 'edible' Garden Cities; people, planning and power; modern methods of construction; and sustainable transport – are not detailed handbooks but instead set out the scope of opportunities for ambitious councils who want to create high-quality, large-scale new developments, whether or not they are able to follow all the Garden City Principles. The Guides highlight key points for consideration and offer signposts to sources of further detailed information. They are 'living' documents that will be periodically updated to reflect key policy changes. Although they are focused on policy in England, the principles and key recommendations can be applied across the UK. The Practical Guides will help anyone attempting to create great places, for everyone, whether or not they describe what they are trying to achieve as a 'Garden City'.

## The Garden City Principles

A Garden City is a holistically planned new settlement that enhances the natural environment and offers high-quality affordable housing and locally accessible work in beautiful, healthy and sociable communities. The Garden City Principles are an indivisible and interlocking framework for delivery, and include:

- Land value capture for the benefit of the community.
- Strong vision, leadership and community engagement.
- Community ownership of land and long-term stewardship of assets.
- Mixed-tenure homes and housing types that are genuinely affordable.
- A wide range of local jobs in the Garden City within easy commuting distance of homes.
- Beautifully and imaginatively designed homes with gardens, combining the best of town and country to create healthy communities, and including opportunities to grow food.
- Development that enhances the natural environment, providing a comprehensive green infrastructure network and net biodiversity gains, and that uses zero-carbon and energy-positive technology to ensure climate resilience.
- Strong cultural, recreational and shopping facilities in walkable, vibrant, sociable neighbourhoods.
- Integrated and accessible transport systems, with walking, cycling and public transport designed to be the most attractive forms of local transport.

The TCPA has produced an extensive set of policy and practical resources on Garden Cities, which can be found at <http://www.tcpa.org.uk/pages/garden-cities.html>

# Summary

Transport is now the greatest contributor to greenhouse gas emissions in Great Britain (cars accounting for 56% of these emissions), while obesity among the population is steadily increasing, leading to major health implications. At the same time, the world has been shaken by a global pandemic that will change people's way of living, working, travelling, consuming and socialising forever. It is vital that we address these challenges as we plan for how people will travel within and connect to and from our new places.

New Garden Cities and other 'garden communities' offer a unique opportunity to set a vision for, design and provide sustainable transport to meet people's needs. They need to be exemplars for the future, and must deliver healthy, happy and diverse communities which reduce their impact on the environment, while enhancing social and economic wellbeing. They should embrace a visionary mindset and deliver an exceptional place. To achieve this, the following key actions must be taken:

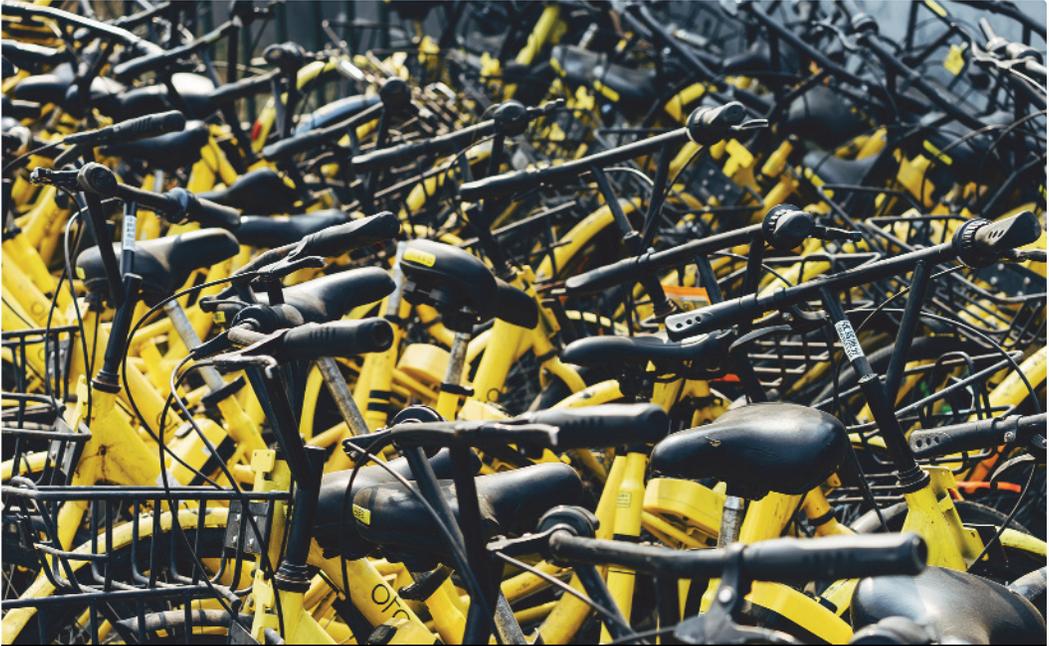
- Agree a clear and deliverable set of sustainable transport priorities with communities and operational agencies, and ensure that the details of networks for walking, cycling and public transport for the whole of the plan period are precisely articulated in plan policy, including key delivery milestones.
- Set mode share and accessibility targets for the settlement, and make sure that the networks and service levels proposed can deliver them. The TCPA's Garden City standards for transport state that a Garden City's design must enable at least 50% of trips originating in the new settlement to be made by non-car means, with a goal to increase this over time to at least 60%.
- Set out the walking, cycling and public transport infrastructure needs at each stage in the Infrastructure Delivery Plan, to ensure that they are met before major roads are delivered, that the necessary investment is prioritised, and that the infrastructure is linked to mode share targets.
- Design the Garden City layout around walking, cycling and public transport, not parking and cars.
- Ensure that the Transport Assessment for the new Garden City aims to deliver the objectives and mode share – i.e. take a 'vision and validate' approach, not predict and provide, which historically has meant building more roads for cars.

To help local authorities and others to achieve these aims, this Practical Guide sets out the relevant planning policy context, key principles (both overarching and for strategic planning and design), and guidance on funding and delivery. It also includes case studies of places where sustainable transport has been successfully delivered.

# 1

## Introduction

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There are opportunities to encourage people to embrace active travel and change the ways that they get around

Travel patterns and behaviour are radically changing, driven by a growing awareness of a range of factors – the environmental impact of cars; the changing attitudes of younger generations; health impacts; congestion; the cost of travel; and the visual and social impacts of road space. The recent COVID-19 restrictions have profoundly impacted the way that people live, work and travel, as evidenced by the public's desire to be more active, and the rise in popularity of cycling and walking.<sup>1</sup> The switch to mass homeworking is likely to have lasting consequences for commuting patterns. Despite people travelling less overall during the national lockdown phase of the pandemic, and the number of cars on the road dropping dramatically, there has been around a 100% increase in weekday cycling, and on some weekends an increase of around 200%.<sup>2</sup> However, there is a huge risk that owing to concerns about the spread of the virus people will be less willing to take public transport<sup>3</sup> and will revert to depending on their cars.

There is nevertheless an opportunity to embed positive changes in people's travel behaviour, increase active travel, and transform permanently how many people move around, particularly in towns and cities. New Garden Cities and other 'garden communities' need to reflect such changes and, where possible, anticipate likely future trends and changes – for example in

- 1 See research carried out by Sport England, reported through Sport England's 'Coronavirus. Research into how the coronavirus crisis has affected people's activity levels and attitudes towards exercise' webpage, at <https://www.sportengland.org/know-your-audience/demographic-knowledge/coronavirus>
- 2 *Gear Change: A Bold Vision for Cycling and Walking*. Department for Transport, Jul. 2020. <https://www.gov.uk/government/publications/cycling-and-walking-plan-for-england>
- 3 A poll conducted in July 2020 suggests that 59% of British people would not be comfortable using public transport – see 'How comfortable are Britons with returning to normal, as coronavirus concern rises again?'. Webpage. Ipsos MORI, Jul. 2020. <https://www.ipsos.com/ipsos-mori/en-uk/how-comfortable-are-britons-returning-normal-coronavirus-concern-rises-again>

## Box 1

### The environmental impact of transport

Transport has a major environmental impact, so promoting sustainable transport in new communities is crucial. According to government transport statistics:<sup>i</sup>

- Transport is now the largest contributor to greenhouse gas emissions – over a quarter (27%) of the total in the UK.
- Cars are the main contributors to these emissions, accounting for 56% of the total UK transport greenhouse gas emissions.
- In 2018, journeys totalling to 808 billion passenger-kilometres were undertaken in Great Britain, with 83% of passenger-kilometres travelled by car, van or taxi.

i *Transport Statistics Great Britain 2019*. Department for Transport, Dec. 2019.  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/870647/tsgb-2019.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/870647/tsgb-2019.pdf)

automated vehicles, the adaptation of micro-mobility (small, lightweight means of transport, typically for shorter distances and at comparatively slower speeds), electrification, and new forms of transport. Places need to be ‘people-focused’ rather than ‘vehicle-focused’.

The growing twin emergencies of climate change and obesity<sup>4</sup> both have significant implications for transport. New Garden Cities have an obligation, as well as an opportunity, to set the standard and rethink our approach to transport, places and people, starting as they do in a new location and with a new design. Decarbonisation of travel must be the focus.<sup>5</sup> They should set an example by following best practice in place-making, delivery and management, and by integrating sustainable transport within the vision of the new community to give people a genuine choice of transport mode. They should be exemplars for the future, and must deliver healthy, happy and diverse communities which reduce their impact on the environment while enhancing social and economic wellbeing.

Sustainable transport is highly unlikely to be achieved if the initial location for the new community is inappropriate. Retrofitting measures into existing developments is both difficult and expensive if transport sustainability has not been considered from the outset – travel habits will have been established, and the design of the place may make the provision of effective networks for walking, cycling and public transport unviable. New Garden Cities offer a unique opportunity to set a vision, produce a design, and provide sustainable transport that meets people’s needs. They should embrace a visionary mindset and deliver an exceptional place.

4 C Baker: *Obesity Statistics*. Briefing Paper 3336. House of Commons Library, Aug. 2019.  
<https://researchbriefings.files.parliament.uk/documents/SN03336/SN03336.pdf>

5 *Decarbonising Transport: Setting the Challenge*. Department for Transport. Mar. 2020.  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/878642/decarbonising-transport-setting-the-challenge.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/878642/decarbonising-transport-setting-the-challenge.pdf)

# 2 Policy context

## 2.1 National Planning Policy Framework

The revised National Planning Policy Framework (NPPF)<sup>6</sup> puts great emphasis on giving consideration to the provision of sustainable transport and on securing the right location for development. It sets out a series of strategic policy requirements that should be followed by those developing new settlements, including making sufficient provision for transport infrastructure. The definition of ‘sustainable development’ set out in para. 8 also includes the three pillars of sustainability – economic, social, and environmental, each of which is highly relevant to transport and its provision.

Chapter 9 of the NPPF explicitly sets out transport policy for new settlements. In para. 103 it states that ‘Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes.’ It also states, in para. 102, that ‘opportunities to promote walking, cycling and public transport use [should be] identified and pursued’ and, in para. 104, that developments should ‘support an appropriate mix of uses across an area, and within larger scale sites, to minimise the number and length of journeys needed for employment, shopping, leisure, education and other activities’ and ‘provide for high quality walking and cycling networks and supporting facilities such as cycle parking (drawing on Local Cycling and Walking Infrastructure Plans)’. These statements are crucial to ensuring that all new settlements maximise the opportunities to build places that meet 21st century needs and avoid the potentially negative consequences of most current development patterns, as highlighted in the *Transport for New Homes* research<sup>7</sup> published in 2018. Para. 108 of the NPPF highlights the need for a very robust and broad evidence base on which to assess proposals, so that full account can be taken of all social, environmental and economic factors, in the context of the Local Plan’s strategic objectives.

The Transport Assessment process related to this evaluation is currently under review by the Department for Transport, with the aim of moving away from ‘predict and provide’ highway capacity to an approach that is more ‘objective led’. The approach taken to date has reinforced current travel patterns to the detriment of other, wider objectives.

The NPPF is clear about the importance of planning for the specific needs of different groups (those with disabilities, families with children, and older people, for example) and the delivery of inclusive, safe and accessible places which minimise the scope for conflicts between pedestrians, cyclists, and vehicles. Strategic policy-making authorities should seek to provide high-quality walking and cycling networks and facilities to support such networks, including cycle parking.

Further guidance on how to integrate the NPPF guidance on transport into plan-making is set out in Chapter 2 of the Chartered Institution of Highways & Transportation’s (CIHT’s)

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6 *National Planning Policy Framework*. CP 48. Ministry of Housing, Communities and Local Government, Feb. 2019. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/810197/NPPF\\_Feb\\_2019\\_revised.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf)

7 *Transport for New Homes, Project Summary and Recommendations*. Transport for New Homes, Jul. 2018. <https://www.transportfornewhomes.org.uk/wp-content/uploads/2018/07/transport-for-new-homes-summary-web.pdf>

*Better Planning, Better Transport, Better Places* report,<sup>8</sup> which highlights the various sections of the NPPF (and not just the NPPF transport chapter) that must be considered, given the interactive nature of transport.

## 2.2 Planning Practice Guidance

Planning Practice Guidance (PPG) sits alongside the NPPF and provides guidance to local authorities on the application of national planning policy. The current PPG has two sections providing advice on planning for transport: 'Transport evidence bases in plan making and decision taking'<sup>9</sup> and 'Travel Plans, Transport Assessments and Statements'.<sup>10</sup> However, PPG is updated periodically to reflect changes to the NPPF. At the time of writing, the current PPG on transport has not yet been revised since the publication of the revised NPPF in 2018. The Ministry of Housing, Communities and Local Government, in co-operation with the Department for Transport, is currently reviewing the guidance and will publish any changes in due course. The forthcoming PPG will reflect the revisions to the NPPF but also the growing importance of transport being considered within the context of climate change, decarbonisation, and the promotion of active travel. It will be a useful tool for local authorities seeking to promote sustainable transport principles in their area.

PPG also contains newly revised guidance on the importance of good design. It states that 'Well-designed places can be achieved by taking a proactive and collaborative approach at all stages of the planning process, from policy and plan formulation through to the determination of planning applications and the post approval stage.'<sup>11</sup> The revised PPG should be read alongside the new the National Design Guide (see Section 2.3) and in due course the forthcoming National Model Design Code.

## 2.3 National Design Guide

The National Design Guide,<sup>12</sup> published by the government in October 2019, states that opportunities to walk and cycle, good access to facilities, employment and services, the availability of parking and the convenience of public transport should all contribute to making high-quality places. New Garden Cities are ideally placed to ensure that these principles are followed. Para. 76 of the National Design Guide states that:

*'A well-designed movement network defines a clear pattern of streets that:*

- *is safe and accessible for all;*
- *functions efficiently to get everyone around, takes account of the diverse needs of all its potential users and provides a genuine choice of sustainable transport modes;*

8 *Better Planning, Better Transport, Better Places*. Chartered Institution of Highways & Transportation, Aug. 2019. [https://www.ciht.org.uk/media/10218/ciht-better-planning-a4\\_updated\\_linked\\_.pdf](https://www.ciht.org.uk/media/10218/ciht-better-planning-a4_updated_linked_.pdf)

9 'Transport evidence bases in plan making and decision taking'. *Planning Practice Guidance*. Ministry of Housing, Communities and Local Government, updated Mar. 2015. <https://www.gov.uk/guidance/transport-evidence-bases-in-plan-making-and-decision-taking>

10 'Travel Plans, Transport Assessments and Statements'. *Planning Practice Guidance*. Ministry of Housing, Communities and Local Government, updated Mar. 2014. <https://www.gov.uk/guidance/travel-plans-transport-assessments-and-statements>

11 'Design; process and tools'. *Planning Practice Guidance*. Ministry of Housing, Communities and Local Government, para. 001, ref. ID: 26-001-20191001, revision date 1 Oct. 2019. <https://www.gov.uk/guidance/design>

12 *National Design Guide: Planning Practice Guidance for Beautiful, Enduring and Successful Places*. Ministry of Housing, Communities and Local Government. Oct. 2019. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/843468/National\\_Design\\_Guide.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/843468/National_Design_Guide.pdf)

- *limits the impacts of car use by prioritising and encouraging walking, cycling and public transport, mitigating impacts and identifying opportunities to improve air quality;*
- *promotes activity and social interaction, contributing to health, well-being, accessibility and inclusion; and*
- *incorporates green infrastructure, including street trees to soften the impact of car parking, help improve air quality and contribute to biodiversity.'*

It also makes clear in para. 75 that: 'Successful development depends upon a movement network that makes connections to destinations, places and communities, both within the site and beyond its boundaries.'

## 2.4 Cycling and walking plan for England

In July 2020, the Department for Transport published a policy paper setting out guidance and the vision for a travel revolution in England.<sup>13</sup> Written in the context of COVID-19, climate change and a growing population suffering from chronic conditions and diseases, the new strategy focuses on increasing cycling and walking to tackle the most challenging issues that England is facing. In May 2020, the government announced £2 billion dedicated to cycling and walking provision, representing a six-fold increase in funding.

The new cycling design guidance sets out higher standards that will now be required if schemes are to receive funding, along with the failings that will no longer be allowed or strongly discouraged. The standards will be enforced by a new inspectorate, Active Travel England. Local authorities and developers will be expected to use this guidance in the design of their schemes, regardless of whether they are receiving government funding. The local authorities that receive funding will work under time limits to deliver schemes that meet those standards.

The strategy states that the Department for Transport will work with the Ministry of Housing, Communities and Local Government and the Local Government Association to place cycling and walking provision at the heart of local plan-making and decision-taking. Theme 3 of the publication (detailed on pages 29-34) focuses on empowering and encouraging local authorities, rather than the police, to take more decisions regarding traffic management by building their capabilities and capacities.

## 2.5 Other government guidance

### **Garden Communities prospectus**

The government's *Garden Communities* prospectus<sup>14</sup> reinforces the importance of providing an integrated and accessible transport system, and includes among required 'key qualities' set out on page 7:

*'Transport – integrated, forward looking and accessible transport options that support economic prosperity and wellbeing for residents. This should include promotion of public transport, walking, and cycling so that settlements are easy to navigate, and facilitate simple and sustainable access to jobs, education, and services.'*

13 *Gear Change: A Bold Vision for Cycling and Walking*. Policy Paper. Department for Transport, Jul. 2020. <https://www.gov.uk/government/publications/cycling-and-walking-plan-for-england>

14 *Garden Communities*. Ministry of Housing, Communities and Local Government. Aug. 2018. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/805688/Garden\\_Communities\\_Prospectus.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/805688/Garden_Communities_Prospectus.pdf)

## ***Decarbonising Transport: Setting the Challenge***

The government's *Decarbonising Transport* document<sup>15</sup> – published by the Department for Transport with a view to publishing a strategy in November 2020 following engagement with stakeholders and communities – outlines two key principles that are particularly relevant to delivering new Garden Cities: 'Accelerating modal shift to public and active transport', and 'Place-based solutions'. The principles set out on page 7 of *Decarbonising Transport* provide guidance on action to deliver against these principles.

## **National Model Design Code**

The National Model Design Code is an emerging government publication that will feature detailed illustrations providing specific guidance to developers and planners on delivering high-quality and site-specific architecture. The government is considering the role of the publication in delivering high-quality, accessible and safe cycle storage.<sup>16</sup>

## ***Manual for Streets***

The *Manual for Streets* guidance published in 2007<sup>17</sup> explains how to design, construct, adopt and maintain new and existing residential streets. This publication was followed by *Manual for Streets 2: Wider Application of the Principles*,<sup>18</sup> launched in September 2010. A revised version of the *Manual for the Streets* publication is expected to be published in due course.

## **2.6 Other professional advice**

The CIHT's *Better Planning, Better Transport, Better Places* report<sup>19</sup> sets out the crucial importance of an effective local and strategic plan or framework, including the strategic vision and policies as required in the NPPF. The delivery of sustainable development – of which sustainable transport is an integral part – should be at the heart of this vision. This requires plan-makers to consider accessibility and mode share targets which address the health and carbon reduction agendas, in addition to devising clear walking, cycling and public transport networks for both now and the future within the context of changing lifestyles, attitudes and technologies.

The Building Better, Building Beautiful Commission's *Living with Beauty* report<sup>20</sup> highlights the importance of maximising opportunities to deliver new communities in a more effective sustainable way within the current policy context.

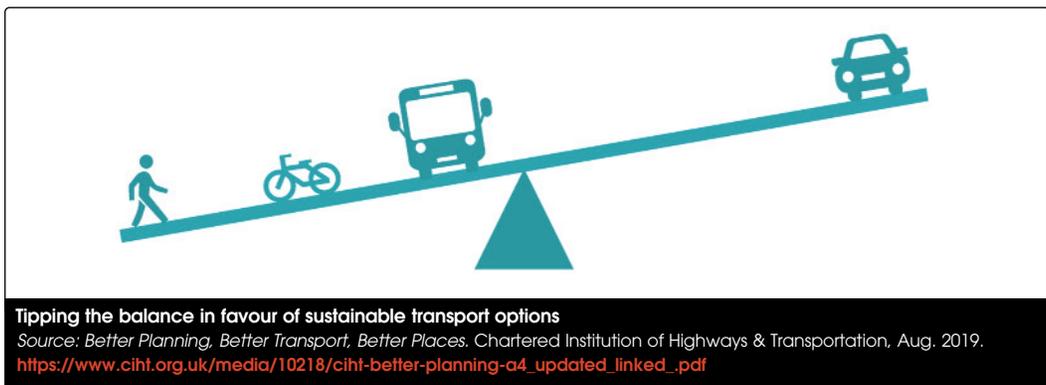
- 
- 15 *Decarbonising Transport: Setting the Challenge*. Department for Transport. Mar. 2020. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/878642/decarbonising-transport-setting-the-challenge.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/878642/decarbonising-transport-setting-the-challenge.pdf)
  - 16 *Gear Change: A Bold Vision for Cycling and Walking*. Policy Paper. Department for Transport, Jul. 2020. <https://www.gov.uk/government/publications/cycling-and-walking-plan-for-england>
  - 17 *Manual for Streets*. Thomas Telford Publishing, for Department for Transport, 2007. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/341513/pdfmanforstreets.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/341513/pdfmanforstreets.pdf)
  - 18 *Manual for Streets 2: Wider Application of the Principles*. Chartered Institution of Highways & Transportation, Sept. 2010. <https://tsrgd.co.uk/pdf/mfs/mfs2.pdf>
  - 19 *Better Planning, Better Transport, Better Places*. Chartered Institution of Highways & Transportation, Aug. 2019. [https://www.ciht.org.uk/media/10218/ciht-better-planning-a4\\_updated\\_linked\\_.pdf](https://www.ciht.org.uk/media/10218/ciht-better-planning-a4_updated_linked_.pdf)
  - 20 *Living with Beauty: Promoting Health, Well-being and Sustainable Growth*. Building Better, Building Beautiful Commission, Jan. 2020. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/861832/Living\\_with\\_beauty\\_BBBBC\\_report.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/861832/Living_with_beauty_BBBBC_report.pdf)

# 3 Overarching elements

## Box 2 Garden City Transport Principle

***Integrated and accessible transport systems, with walking, cycling and public transport designed to be the most attractive forms of local transport.***

All the TCPA's Garden City Principles are set out at <https://www.tcpa.org.uk/garden-city-principles>



New Garden Cities should provide all the usual daily services and facilities – shops and education centres, health and recreation facilities, for example – within walking or cycling distance or within a public transport journey; access should not require the use of a car. Planners should seek to ‘tip the balance’ by making the use of any sustainable mode route within a development quicker, easier and cheaper than the alternative offered by private car. This Section outlines guidance on how to achieve this aim.

## 3.1 Principle 1: Location and connectivity should be the starting point

A new Garden City will never be completely isolated and will always be located within the existing network of development across the country. Where necessary, existing networks and connectivity should be improved or upgraded to support development. A location that is well connected physically and economically is essential. The importance of integrated strategic planning that aligns transport planning with economic growth needs to be considered from the outset. Local authorities must determine the location of new Garden Cities to ensure that they can be sustainable and viable, with high levels of accessibility both internally and to other settlements.

The Garden City pioneers recognised the importance of connection, with the concept of the ‘Social City’ demonstrating the benefits of a cluster of smaller settlements that, linked by rapid public transport, would together provide all the benefits of a much larger place. Developing in strategic locations along existing rail, bus and road networks can provide a sustainable pattern of growth and protect rural areas away from these routes.

### Box 3

#### Garden City standards for transport

*'A Garden City's design must enable at least 50% of trips originating in the Garden City to be made by non-car means, with a goal to increase this over time to at least 60%; and the latest best practice in street and transport design should be used as a minimum standard. Public transport nodes and neighbourhood facilities should be a short walk (no more than 10 minutes) away from every home. Homes should be within 800 metres of schools for children under the age of 11.'*

Source: *Guide 3: Design and Masterplanning*. Garden City Standards for the 21st Century: Practical Guide for Creating Successful New Communities. TCPA, Dec. 2017. <https://www.tcpa.org.uk/guidance-for-delivering-new-garden-cities>

The right spatial approach may be different in each area, but patterns of growth should always be considered first in relation to accessibility and inclusivity; and the role and function of a new large-scale community should be considered in the context of the local settlement hierarchy. New Garden Cities should have good public transport and cycle network connections to neighbouring towns and cities, and should take advantage of all the opportunities to improve these networks and connections.

To facilitate low and decreasing levels of travel by private car, site locations near to existing or potential new major transport interchanges, or near to mobility hubs, combining different modes of travel, should be selected (see Box 9, on mobility hubs, on page 21). This may mean prioritising new urban extensions on brownfield and regeneration sites which benefit from existing public transport networks and can be reached on foot and by cycle. Further guidance on locating new settlements is set out in the TCPA's *Locating and Consenting New Garden Cities* Practical Guide.<sup>21</sup>

## 3.2 Principle 2: Set an overarching vision, focused on delivering sustainable transport

To deliver sustainable transport in new Garden Cities, local authorities should establish an overarching vision that integrates the Garden City standards for transport – see Box 3. An integrated strategic approach to transport and spatial planning is essential to ensure that development locations are sustainable and help to create places that are well designed, healthy, accessible, safe, and inclusive. Policy-making authorities should work collaboratively to identify the strategic matters to realise this vision. The vision should include clear targets on both mode share and the required networks, together with the requisite service levels and layout that make accessibility and inclusivity targets deliverable. To make sustainable travel the clear, easy and preferred option for everyone, it should be considered from the very earliest stages of planning, and at all levels – in Local Plans, policies, masterplans, and house design. This begins with ensuring that the site chosen for the new place is suitable for sustainable transport links to key places, and that the new community is designed to be compact, in order to ensure that the use of private transport is avoidable. The new Garden City should provide genuine choice and make the use of sustainable modes more attractive, for everyone, than the use of the private petrol/diesel car. Making active, public and shared transport more attractive may also require making private car use less attractive (by

21 *Guide 1: Locating and Consenting New Garden Cities*. Garden City Standards for the 21st Century: Practical Guide for Creating Successful New Communities. TCPA, Nov. 2017. <https://www.tcpa.org.uk/Handlers/Download.ashx?IDMF=7056094d-264e-4ac3-8d7c-53188c4f698d>

#### Box 4 Case study – Ebbsfleet: Get Active



The Get Active programme was launched in March 2018 as an initiative targeted at encouraging active travel among the whole community of Ebbsfleet Garden City. The programme consists of a range of projects that encourage residents to be more physically active and to embrace active travel. There is a smartphone app, free for users, that uses a reward system when users engage in active travel: they receive 'BetterPoints' which they can swap for high street vouchers, to spend in local shops or donate to charity. Funding for a trial of the scheme was provided by NHS England under its Health New Towns programme.

A full case study report on the Ebbsfleet Garden City Get Active programme is provided in one of the Healthy New Towns programme's *Putting Health into Place* publications – *Putting Health into Place – Principles 4-8. Design, Deliver and Manage* (NHS England, Sept. 2019), available at <https://www.england.nhs.uk/wp-content/uploads/2019/09/hip-2-design-deliver-manage.pdf>

addressing private parking spaces outside homes, for example) – see Principle 9: 'Consider key design features', on pages 26-28.

Planners should consider the wider objectives that a sustainable transport system can help to achieve – including reducing the impact of climate change, improving health and wellbeing, and increasing social inclusion, job opportunities, trade, and access to services.<sup>22</sup> The vision should consider three core aims:

- Promote active travel.
- Establish excellent public transport from the outset.
- Reduce the use of private cars.

#### Promote active travel

The government's new vision for cycling and walking in England<sup>23</sup> makes it very clear that the benefits of active travel are many – and have the potential to transform the most challenging issues that the nation is currently facing: improving health and wellbeing,

<sup>22</sup> See *A Time of Unprecedented Change in the Transport System: The Future of Mobility*. Government Office for Science, Jan. 2019. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/780868/future\\_of\\_mobility\\_final.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/780868/future_of_mobility_final.pdf)

<sup>23</sup> *Gear Change: A Bold Vision for Cycling and Walking*. Policy Paper. Department for Transport, Jul. 2020. <https://www.gov.uk/government/publications/cycling-and-walking-plan-for-england>

**Box 5**  
**Case study – Bicester Blue Route**



As part of the NHS England Healthy New Towns programme in Bicester, Cherwell District Council designed three 5 kilometre routes across the town for walkers, joggers and cyclists, marked out with blue lines in durable thermoplastic paint. The aim was to encourage people to be more active, make active travel easy, and make walking and cycling attractive to all – and hence reduce people’s dependency on their cars. As of September 2018, one of the routes had seen an increase in average daily footfall of 27%, and this increase in activity has been amplified through other initiatives such as outdoor gyms, community walks, training, and social media campaigns. The project cost £14,000 per route, and it has been calculated that for every £1 invested in the routes £2.10 will be saved in other costs over a period of 25 years.

combating climate change, improving air quality, addressing inequalities, supporting local businesses, and enabling us to combat COVID-19 more effectively. None of the benefits outlined in the government strategy are new, yet the new guidance, alongside a funding package, will empower local authorities to make serious improvements to their local active travel strategies.

As reported in the *Putting Health into Place* reports on NHS England’s Healthy New Towns programme,<sup>24</sup> active travel not only promotes the most sustainable form of travel but also embeds ideas of health within the development process. Sport England has developed

24 The full suite of *Putting Health into Place* publications (Sept. 2019), including an Executive Summary, is available from the NHS England website, at <https://www.england.nhs.uk/ourwork/innovation/healthy-new-towns/>

active design guidelines<sup>25</sup> to help ensure that public transport and walking and cycling networks permeate through development areas and into existing communities in a safe, convenient way. According to this guidance, initiatives must be tailored to the local population and delivered in a personalised way.

Another useful resource is the *Planning for Walking Toolkit* produced by Transport for London,<sup>26</sup> which provides a detailed guide for planners and designers to follow, with a list of options for collecting and assessing data that can be used to inform design decisions. Additionally, the 'Healthy Streets Approach'<sup>27</sup> sets out how to put people and health at the heart of decision-making in order to help reduce car use and enhance walking, cycling, and the use of public transport. Despite the focus on London's context, many of the tools and principles set out can be replicated elsewhere in the design and retrofit of walkable streets in new developments, which are referred to throughout the publication.

### **Establish excellent public transport from the outset**

Good transport planning should support the viability and quality of public transport, as well as walking and cycling infrastructure, seeking to ensure value for money for public transport investment and deliver its wider economic, environmental, and social benefits.<sup>28</sup> Sustainable transport infrastructure – including buses, electric shuttles, trains, pedestrian and cycleways, as well as space for micro-mobility (see Box 8, on micro-mobility and e-scooters, on page 20) – must be in place in new Garden Cities from the time of the first occupations, before habits of relying on private cars are embedded. Evidence suggests that life-stage changes, such as moving into a new home, provide a great stimulus for behaviour change – but if mobility behaviour is to be directed towards greater sustainability, the necessary infrastructure needs to be in place from day one.<sup>29</sup> This will encourage people to adopt healthy travel modes as soon as they move into the new place. Such behaviour can be supported by making smart travel a 'unique selling point' of the new development, with travel plans put in place during construction and used in marketing the development.

Given the cost of rail infrastructure, buses are likely to play a major role in the local transport systems in new Garden Cities. Bus operators need to be consulted from the start, including on the choice of settlement location, and throughout the specifics of the design and layout of new communities. Substantial capital should be set aside to support the bus framework and to incentivise new residents to use it – if well designed, accessible, inclusive and integrated, the bus system should become self-sustaining. The layout of streets and paths in new developments should facilitate direct and efficient bus operation, with direct and pleasant walking routes to bus stops. The CIHT's *Buses in Urban Developments*<sup>30</sup> and Stagecoach's *Bus Services and New Residential Developments*<sup>31</sup> provide guidance on street design for bus operations.

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25 *Active Design: Planning for Health and Wellbeing through Sport and Physical Activity*. Sport England, Oct. 2015. <https://sportengland-production-files.s3.eu-west-2.amazonaws.com/s3fs-public/spe003-active-design-published-october-2015-email-2.pdf>

26 *Planning for Walking Toolkit: Tools to Support the Development of Public Realm Design Briefs in London*. Transport for London, Mar. 2020. <http://content.tfl.gov.uk/the-planning-for-walking-toolkit.pdf>

27 'Healthy Streets'. Webpage. Transport for London. <https://tfl.gov.uk/corporate/about-tfl/how-we-work/planning-for-the-future/healthy-streets>

28 *Better Planning, Better Transport, Better Places*. Chartered Institution of Highways & Transportation, Aug. 2019. [https://www.ciht.org.uk/media/10218/ciht-better-planning-a4\\_updated\\_linked\\_.pdf](https://www.ciht.org.uk/media/10218/ciht-better-planning-a4_updated_linked_.pdf)

29 K Stanbridge and G Lyons: *Travel Behaviour Considerations during the Process of Residential Relocation*. Paper presented to 11th International Conference on Travel Behaviour Research, Kyoto, Japan, Aug. 2006. Available at <http://eprints.uwe.ac.uk/9789/1/9789.pdf>

30 T Pharoah: *Buses in Urban Developments*. Chartered Institution of Highways & Transportation, Jan. 2018. [https://www.ciht.org.uk/media/4459/buses\\_ua\\_tp\\_full\\_version\\_v5.pdf](https://www.ciht.org.uk/media/4459/buses_ua_tp_full_version_v5.pdf)

31 *Bus Services and New Residential Developments: General Highways and Urban Design Advice to Applicants and Highways Authorities*. Stagecoach, 2017. [https://www.stagecoachgroup.com/~/\\_media/Files/S/Stagecoach-Group/Attachments/pdf/bus-services-and-new-residential-dev.pdf](https://www.stagecoachgroup.com/~/_media/Files/S/Stagecoach-Group/Attachments/pdf/bus-services-and-new-residential-dev.pdf)

**Box 6**  
**Case study – Chelmsford Garden Village**



The Chelmsford Garden Village development, comprising Beaulieu and Channels to the north east of Chelmsford, will deliver 9,850 housing units. Sustainable transport has been considered from the outset, and the development is designed with walkable communities in mind, maximising sustainable and accessible travel through public transport and ensuring that key destinations are close to one another. The site includes many cycling and walking facilities, such as the linear park through Beaulieu and the primary cycleway network that provides connectivity through the development completed to date, with links to future development phases. The site will also provide high-quality off-road routes to the new Beaulieu railway station.

A new express bus service commenced in April 2017, operated by First Essex and providing a route from Beaulieu to the centre of Chelmsford. As part of the new service, 800 free 'taster' bus passes were distributed to 341 households. In autumn 2018, bus services were extended into the site, and the use of buses increased as housing was completed and more people moved in. As a result of the early incentive to encourage bus use, more than half of the households have a bus season ticket of some form, with over 3,700 passenger journeys originating from Beaulieu each month.

In August 2019, Essex County Council announced that the new railway station at Beaulieu and the Chelmsford north-east bypass had been approved for government funding of £218 million, following a bid to the Housing Infrastructure Fund prepared jointly by Chelmsford City Council and Essex County Council. Chelmsford railway station is currently overcrowded – it is the busiest two-platform station in the UK outside of London. The addition of Beaulieu station will relieve some of the pressure, resulting in far fewer people crammed onto the Chelmsford platform at peak times. The station will also encourage more people from the area to travel sustainably to work by foot, cycle, and train – rather than driving into the city centre or to the station and adding to congestion. Railway stations attract more employers, and so the area is more likely to see high-grade offices, research and development facilities appearing nearby – opening up a pool of jobs for residents.

Central and local government should make efforts to accelerate the process of opening new railway stations, where viable, as hubs within central areas of new developments. Where appropriate, trams and light rail should be used to pull expanding areas together (see Box 9, on mobility hubs, on page 21).

### **Reduce the use of private cars**

When planning for sustainable transport in a new Garden City, the aim of reduced use of private cars should be a priority. The consequences of building a car-dependent new community will affect the built environment and residents in many ways, including through isolation for those who cannot drive, poorer air quality levels as a consequence of increased pollution, and a reduced amount of green space as a result of a layout dominated by parking.<sup>32</sup> A move away from car-dependent development can be achieved if active travel and public transport networks are put in place effectively and the fundamental layout of the place favours walking, cycling, and public transport use: these modes need to be easier to access and use than the car. Standards should be set for adequate facilities for cycle parking (private, on-street, and at destinations) and to secure appropriate interchanges between different transport modes – see Principle 9: ‘Consider key design features’, on pages 26-28.

Where there is a need for car use, zero-emission shared vehicles should be prioritised over private petrol/diesel cars. Less polluting private electric vehicles still have a role to play, and charging infrastructure should be planned for. However, electric cars are not a ‘silver bullet’ solution as there are still huge environmental costs involved, such as sourcing the minerals used for batteries, and they still contribute to congestion. Pairing electric cars with co-sharing schemes can be a good approach to overcome challenges of congestion and parking.<sup>33</sup> Car-sharing schemes can support a shift away from dependence on private car use and help free up parking spaces for other purposes, while still enabling residents to use a car when no other options are available.<sup>34</sup>

Finally, as part of a shift towards reduced car use, parking policy should be an integral part of the overall vision and transport strategy, with the scale, location, pricing and type of parking considered as a whole. Local authorities should take into account the approaches set out above and follow the principle that walking, cycling or taking the bus should be easier than using a private car. Innovative approaches should be taken to avoid unsightly on-street parking which dominates the development, such as the use of community car parks outside the development (as at Vauban – see Box 7).

## **3.3 Principle 3: Collaboration is crucial**

Close collaboration between stakeholders is essential from the start of thinking about how to develop a new Garden City. Active engagement must begin with identifying a location and setting a vision, and must continue through to delivery and implementation. Engagement should include existing local communities, local council members, transport operators, transport authorities, professional bodies, and strategic stakeholders such as Highways England, Homes England, and Network Rail. It should ensure that viable and deliverable sustainable transport proposals are included within integrated strategic plan-making and

32 *Garden Villages and Garden Towns: Visions & Reality*. Transport for New Homes/Foundation for Integrated Transport, Jun. 2020. <https://www.transportformewhomes.org.uk/the-project/garden-villages-and-garden-towns/>

33 ‘Car clubs and car sharing’. Webpage. Sustrans, Feb. 2019. <https://www.sustrans.org.uk/our-blog/get-active/2019/everyday-walking-and-cycling/car-clubs-and-car-sharing/>

34 RTownend: ‘How new housing developments can benefit from car clubs’. Blog entry. Transport for New Homes, May 2019. <https://www.transportformewhomes.org.uk/tag/car-sharing/>

**Box 7**  
**Case study – Vauban, Germany**



Vauban, a suburb of Freiburg in Germany, is a car-free development that is home to around 5,000 people. It provides an exemplar case study of reducing private car use. A frequent tram service connects the development to the centre of the city. Cars have been removed from Vauban's streets, and vehicles are allowed to enter – at walking pace – only to pick up and deliver; parking is not permitted. Car owners must purchase a parking space in a peripheral multi-storey car park. As a result, beds of flowers replace what would normally be parking outside of homes, children play in the streets, and around three-quarters of the population cycle to work.

implementation across the development. Undertaking early collaborative analysis is crucial to ensure that the Transport Assessment and subsequent travel planning work on the location and design of the proposed development are appropriate.

It is also crucial that land use and transport are planned collaboratively across local authority boundaries, maximising the benefits of planned strategic infrastructure delivery alongside taking advantage of all opportunities to improve the connectivity and quality of the existing transport network. Cross-boundary analysis, design and funding work is vital if public transport networks are to be expanded and developed in a way that benefits everyone in the wider area.<sup>35</sup>

35 *Transport for New Homes, Project Summary and Recommendations*. Transport for New Homes, Jul. 2018. <https://www.transportfornewhomes.org.uk/wp-content/uploads/2018/07/transport-for-new-homes-summary-web.pdf>

## 3.4 Principle 4: Sustainable transport systems must be inclusive

A successful Garden City transport system must be inclusive of everyone and must consider their varying needs, ensuring that all its facilities and environments are safe. Arguably, an effective transport system can support social equality by ensuring that people can access services, jobs and leisure opportunities without the need for private cars,<sup>36</sup> but mobility difficulties also need to be considered to secure equal access. Government statistics show that adults with mobility difficulties undertake 39% fewer trips compared with those with no mobility disability. At older age, this figure increases, with those aged 70 or more with mobility difficulties undertaking half the number of trips of those with no mobility disability.<sup>37</sup> Equally, studies suggest that people with mental impairments make fewer journeys than the rest of the population,<sup>38</sup> and that badly designed and poorly resourced transport infrastructure also disproportionately affects women, children, and people from disadvantaged communities.<sup>39</sup> Transport provision and access should be scrutinised by experts in the local authority to consider the different types of user need and social context, in terms of gender, age and disability.

A variety of measures should be put in place to improve public transport accessibility and make active travel more attainable for those with disabilities. Recently published guidance includes:

- The *Inclusive Transport Strategy*,<sup>40</sup> published by the Department for Transport, providing guidance on, among other things, awareness and enforcement of passenger rights, staff training, and improving physical infrastructure.
- NHS England's *Putting Health into Place: Design, Deliver and Manage* report,<sup>41</sup> setting out how to promote active travel for people with mobility difficulties; and
- Planning Practice Guidance, 'Housing for Older and Disabled People' section,<sup>42</sup> setting out how places can be designed to be age-friendly and accessible to all.

Engagement activities are crucial in giving all members of the community a voice and the opportunity to influence important decisions, such as the route that a bus should take or the most effective signage for a walking route. Initial rounds of consultations can be undertaken through proxy communities; and it is vital to identify hard-to-reach members of the community who may have been historically marginalised from such processes.<sup>43</sup> Further guidance on how to achieve active and participative dialogue is set out in the TCPA's *People, Planning and Power* Practical Guide.<sup>44</sup>

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36 *Transport for New Homes, Project Summary and Recommendations*. Transport for New Homes, Jul. 2018. <https://www.transportfornewhomes.org.uk/wp-content/uploads/2018/07/transport-for-new-homes-summary-web.pdf>

37 *Transport Statistics Great Britain 2018*. Department for Transport, Dec. 2018. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/787488/tsgb-2018-report-summaries.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/787488/tsgb-2018-report-summaries.pdf)

38 R Mackett: *Building Confidence – Improving Travel for People with Mental Impairments*. Centre for Transport Studies, University College London, Nov. 2017. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/662737/report-on-mental-impairments\\_final.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/662737/report-on-mental-impairments_final.pdf)

39 *Transport and Inequality: An Evidence Review for the Department for Transport*. NatCen, for the Department for Transport, Jul. 2019. <https://www.gov.uk/government/publications/transport-and-inequality>

40 *The Inclusive Transport Strategy: Achieving Equal Access for Disabled People*. Department for Transport, Jul. 2019. <https://www.gov.uk/government/publications/inclusive-transport-strategy/the-inclusive-transport-strategy-achieving-equal-access-for-disabled-people>

41 *Putting Health into Place – Principles 4-8. Design, Deliver and Manage*. NHS England, Sept. 2019. <https://www.england.nhs.uk/wp-content/uploads/2019/09/hip-2-design-deliver-manage.pdf>

42 'Housing for older and disabled people'. *Planning Practice Guidance*. Ministry of Housing, Communities and Local Government, updated Jun. 2019. <https://www.gov.uk/guidance/housing-for-older-and-disabled-people>

43 *Garden Communities Toolkit*. Homes England, Sept. 2019. <https://www.gov.uk/guidance/garden-communities>

44 *Guide 11: People, Planning and Power*. Garden City Standards for the 21st Century: Practical Guide for Creating Successful New Communities. TCPA, Mar. 2019. <https://www.tcpa.org.uk/guidance-for-delivering-new-garden-cities>

## 3.5 Principle 5: Transport must be future-proofed

Local authorities need to think creatively to ensure that new Garden City transport systems are maintained and fit for the future. We live in a time of major social, technological and environmental change, with many unknowns for the future, but there is an opportunity to move from the motor age to a new way of making journeys. Additionally, the COVID-19 pandemic has changed the way that people will move around, with a clear drive from government to increase walking and cycling (as discussed in Section 2.4). New Garden Cities should take a leading role in adapting to the changes that the new normal will bring.

Carefully considered use of technology, integrated within people-focused policy, can help to ensure sustainable mobility in the future. This is particularly important as the way that people travel is changing – there is a greater uptake of micro-mobility, and shared mobility is increasing among young people.<sup>45</sup> Additionally, the way that people consume has radically changed in the last decade as online shopping has become much more common,<sup>46</sup> a trend that only increased during the COVID-19 national lockdown, leading to a substantial rise in parcel deliveries and delivery traffic.<sup>47</sup> Innovation in this area continues apace, and consideration must be given to how new developments will be appropriately serviced for deliveries.

Great Britain is also potentially seeing the ‘death of the office’, as more people decide to work from home in the long term, minimising the need to travel and shifting patterns of movement. Data infrastructure such as broadband connectivity can reduce the need to travel in and of itself, but is also fundamental to the roll-out of smart systems. When thinking about the future of transport, decision-makers need to grasp the technological transformation that the digital age will bring to the future of transport. Transport officials in local authorities need to be ready and have the skills to embrace this change and ensure that technology-driven initiatives are well thought-out.<sup>48</sup> Local authorities need to keep in mind how generational changes will affect the future of their developments. Guidance from the Institution of Engineering and Technology<sup>49</sup> outlines some of the opportunities and challenges that local authorities will face in delivering local transport in the future, and focuses on how technology can help them meet their transport targets. Further information on how the government will facilitate innovation in urban mobility for freight, passengers and services is set out in *Future of Mobility: Urban Strategy*,<sup>50</sup> published as part of the government’s Industrial Strategy.

Technology-driven initiatives tend to emerge in urban areas, and it is often difficult to apply the resulting practice to less densely populated areas. However, there are many initiatives

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45 K Chatterjee, P Goodwin, T Schwanen, *et al.*: *Young People’s Travel – What’s Changed and Why? Review and Analysis*. UWE Bristol and University of Oxford, for the Department for Transport, Jan. 2018.

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/673176/young-peoples-travel-whats-changed.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/673176/young-peoples-travel-whats-changed.pdf)

46 ‘E-Commerce in the United Kingdom (UK) – Statistics & Facts’. Webpage. Statista, May 2020.

<https://www.statista.com/topics/2333/e-commerce-in-the-united-kingdom/>

47 A Braithwaite: *The Implications of Internet Shopping Growth on the Van Fleet and Traffic Activity*.

LCP Consulting, for RAC Foundation, May 2017. [https://www.racfoundation.org/wp-content/uploads/2017/11/The\\_Implications\\_of\\_Internet\\_Shopping\\_Growth\\_on\\_the\\_Van\\_Fleet\\_and\\_Traffic\\_Activity\\_Braithwaite\\_May\\_17.pdf](https://www.racfoundation.org/wp-content/uploads/2017/11/The_Implications_of_Internet_Shopping_Growth_on_the_Van_Fleet_and_Traffic_Activity_Braithwaite_May_17.pdf)

48 G Lyons: *Uncertainty Ahead: Which Way Forward for Transport*. Final Report from the CIHT FUTURES Initiative. Chartered Institution of Highways & Transportation, Aug. 2016.

[https://www.ciht.org.uk/media/4809/ciht\\_futures\\_-\\_final\\_report\\_doc\\_a4\\_final\\_linked.pdf](https://www.ciht.org.uk/media/4809/ciht_futures_-_final_report_doc_a4_final_linked.pdf)

49 *The Local Authority Guide to Emerging Transport Technology 2017-2018*. Institute of Engineering and Technology, Nov. 2017. <https://www.theiet.org/media/2954/ssd1471-la-guide-to-emerging-transport-tech-brochure.pdf>

50 *Future of Mobility: Urban Strategy*. Policy Paper. Department for Transport, Mar. 2019.

<https://www.gov.uk/government/publications/future-of-mobility-urban-strategy>

## Box 8 Micro-mobility and e-scooters



Voi electric scooters for rent

Micro-mobility is a term used to refer to transportation of people and/or goods using small, lightweight vehicles that run at comparatively slower speeds, powered by an electric motor or the efforts of the riders/drivers – including scooters, bikes, skateboards, hoverboards, and Segways. The micro-mobility industry is rapidly expanding and changing in the UK, with a rise in sales and increases in shared-use schemes.

E-scooters and other micro-mobility technologies powered by an electric motor and battery are increasing in popularity, but their use on public roads, pavements and cycle lanes is currently illegal in the UK. These new technologies would provide additional traveller choice, supporting the general trend of a shift away from private car use<sup>i</sup> if the implementing schemes are governed and planned appropriately.<sup>ii</sup>

Government trials of e-scooter operation, allowing local authorities to operate e-scooter rental schemes, began in July 2020. The intention is for the trials to run for 12 months to enable evaluation of the safety and impact of e-scooters and to learn lessons for future roll-out.<sup>iii</sup> New Garden Cities would be in an ideal position to provide micro-mobility solutions as the new industry develops – building the appropriate infrastructure to adapt the new technologies to the urban environment and including them in the transport strategy for the new community.

i *Micromobility and Active Travel in the UK: The Rise of Smaller Modes, and Resulting Infrastructure, Safety and Regulation Implications*. London Cycling Campaign, Mar. 2020.

[https://s3.amazonaws.com/lcc\\_production\\_bucket/files/13688/original.pdf?1591175162](https://s3.amazonaws.com/lcc_production_bucket/files/13688/original.pdf?1591175162)

ii 'Our position on micromobility'. Webpage. Sustrans, Jan 2019. <https://www.sustrans.org.uk/our-blog/policy-positions/all/all/our-position-on-micromobility/>

iii *E-Scooter Trials: Guidance for Local Areas and Rental Operators*. Department for Transport, Jul. 2020. <https://www.gov.uk/government/publications/e-scooter-trials-guidance-for-local-areas-and-rental-operators/e-scooter-trials-guidance-for-local-areas-and-rental-operators>

## Box 9 Mobility hubs



Mobility hub in a proposed 'garden town' in Hertfordshire

Sustainable transport hubs, or mobility hubs, are a new mechanism for lowering emissions and increasing the uptake of active travel and shared transport in new communities. They act as convenient interchanges at a neighbourhood level, providing first-and-last-mile connectivity with public transport, demand-responsive transport (DRT), car clubs, bike, e-bike share, and other services, while offering amenities such as electric vehicle charging points, cycle storage, workspaces, parcel delivery, wifi, cafés, and bike repair. They can help to reduce car use and car ownership in new communities by responding to the growing demand for shared-mobility services.

Hubs come in different shapes and sizes, offering convenient alternatives which can be flexibly selected to serve the chosen neighbourhood. Their modular nature is such that they can be located in new or existing residential areas, business parks, town centres, shopping centres, and rural or suburban areas. They can help to plug gaps in the public transport network in a more cost-effective way than new public transport services, and can help to unlock private sector investment.

Vectos, a consultancy in transport planning, provides advice on how to establish mobility hubs, highlighting that three key aspects should be considered:

- **Location:** Mobility hubs must be in a visible, central location with high levels of footfall, adjacent to other retail, commercial or residential development and with access to bus services to maximise interchange potential.
- **Facilities:** The facilities offered will vary by location and size, but can include bike (daytime and overnight) storage (shared, electric, conventional and cargo), parcel storage/ collection, cafés, and working space facilities. They can also offer travel planning advice.
- **Operation:** Core facilities should be in place for the first residents, then scaled up to meet demand from the growing community, acting as a gateway facility for visitors.

Technical advice provider and consultancy CoMoUK has produced useful guidance on mobility hubs (available at <https://como.org.uk/wp-content/uploads/2019/10/Mobility-Hub-Guide-241019-final.pdf>) and runs a mobility hubs forum.

## **Box 10**

### **Case study – Longcross Garden Village**

The Longcross Garden Village development in Runnymede, Surrey is located on former Ministry of Defence land. The site is bisected by the M3 motorway, and Longcross South and Longcross North are connected by a bridge link across the motorway. The development will provide 1,700-1,800 homes.

Longcross North benefits from a functioning railway station, which offers an hourly service to London with a 45-minute journey time. The development provides sustainable links that take advantage of a 'green grid' of walking and cycling routes to key local destinations such as employment sites, shops, and open space. The cross-motorway bridge between the north and south parts of the development is necessary to ensure accessibility across the whole site.

Consideration is being given to the possibility of using electric shuttle buses, with a top speed of 30 mph, for first-and-last-mile transportation to take people to and from the train station. Integrating these buses into the development will require the masterplan to be changed to include an internal route within the village. Plans are in place to set up a morning and evening bus service linking Longcross Garden Village and the nearby film studios to Virginia Water railway station. On-demand travel will also be available between 9am and 5pm on weekdays, when Longcross residents can book a bus journey within a six-mile radius of the development.

Further information is available from the Runnymede Borough Council website, at <https://www.runnymede.gov.uk/article/15572/Garden-Village-at-Longcross>

emerging in new communities that can make a difference in less populated areas – such as services for first-and-last-mile travel through the use of micro-mobility technology (see Box 8), setting up mobility hubs in new developments (see Box 9), and demand-responsive services for buses to move people from key locations (see the Longcross case study in Box 10). First-and-last mile solutions are crucial as it is that type of journey that often leads to car dependency.

However, it is important to highlight that technology-focused initiatives must not be exclusionary and need to consider the needs and capacities of all users. Technology can sometimes hinder access to transport services, especially for marginalised groups, so a strategy needs to be put in place to ensure that, whatever their needs, people are at the core of transport developments.

# 4 Strategic planning and design

New Garden Cities should be devised around pleasant, well designed streets and places and spaces that offer interest and are sociable and environmentally sustainable. High-quality design can play an important role in achieving sustainable development.<sup>51</sup> The masterplan should address the overall structure of the place to ensure that it has a heart and connected neighbourhoods. It should meet residents' day-to-day needs by planning a range of uses, and should prioritise walking and cycling as the main means of access to local facilities (including getting to workplaces, shops, schools, open spaces, or the natural environment), adjacent areas, mobility hubs, and public transport stations and stops. It should also provide for local employment opportunities.

The government's *National Design Guide*<sup>52</sup> states that in a well designed place all modes of transport are positively designed into the built form. They are integrated into public spaces that have character and that people enjoy using. People move around in attractive streets and other public spaces – parks, natural open spaces, and green corridors. A clear design code for the new development can be valuable, and the government's forthcoming National Model Design Code will set out detailed parameters for development in different types of location – such as the arrangement and proportions of streets and urban blocks, the positioning and hierarchy of public spaces, successful parking arrangements, the placement of street trees, and high-quality cycling and walking provision. It will be accompanied by worked examples, and will complement a revised and consolidated *Manual for Streets*. Further guidance on masterplanning is set out in the TCPA's *Design and Masterplanning Practical Guide*.<sup>53</sup>

## 4.1 Principle 6: Local Plans should establish mode share targets and networks

The government has targets to double cycling activity, increase walking activity and increase the number of children aged 5 to 10 that usually walk to school from 49% to 55% by 2025. The government's ambition is to make cycling and walking the natural choices for short journeys or as part of longer journeys by 2040.<sup>54</sup>

Mode share targets should be set in Local Plans and should be in accordance with the vision and objectives of the new Garden City, and should support the national ambition. Targets can set the general direction for infrastructure decisions, determine the acceptability of sites or proposals, and help in identifying future needs and priorities, especially regarding the investment needed to meet them. They are also crucial in ensuring that developers and promoters can address demand appropriately.

51 *National Design Guide: Planning Practice Guidance for Beautiful, Enduring and Successful Places*. Ministry of Housing, Communities and Local Government. Oct. 2019.

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/843468/National\\_Design\\_Guide.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/843468/National_Design_Guide.pdf)

52 *Ibid.*

53 *Guide 3: Design and Masterplanning*. Garden City Standards for the 21st Century: Practical Guide for Creating Successful New Communities. TCPA, Dec. 2017. <https://www.tcpa.org.uk/guidance-for-delivering-new-garden-cities>

54 *Cycling and Walking Investment Strategy: Report to Parliament*. CP194. Department for Transport. Feb. 2020. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/863723/cycling-and-walking-investment-strategy-report-to-parliament.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/863723/cycling-and-walking-investment-strategy-report-to-parliament.pdf)

It is important to set ambitious targets, but they should be achievable to avoid undermining credibility. In addition, Local Plans should set out the proposed walking, cycling and public transport networks to be achieved over the life of the plan, with links to the walking and cycling strategies required by government.<sup>55</sup> Targets on active travel/obesity, pollution and accessibility levels should also be included, as well as clear standards that development is expected to achieve, including those on the number, scale and design of facilities to support their delivery. Both the targets and the networks need to be based on a robust and relevant evidence base, which has to be collaboratively produced and agreed with relevant stakeholders.

#### **Key actions:**

- **Determine the future networks for walking, cycling and public transport for the end of the plan period, and at key stages in between, and include them in the plans for the new community – not just generalised statements. They should be agreed with the key delivery and operational agencies.**
- **Set a mode share and accessibility target for the settlement, and make sure that the networks and service levels proposed can deliver them.**
- **Set out the walking, cycling and public transport infrastructure needs at each stage in the Infrastructure Delivery Plan, to ensure that they are met before major roads are delivered, that the necessary investment is prioritised, and that the infrastructure is linked to mode share targets.**
- **Ensure that the Transport Assessment for the new Garden City aims to deliver the objectives and mode share – i.e. takes a ‘vision and validate’ approach, not predict and provide, which historically has meant building more roads for cars.**

## **4.2 Principle 7: Build to the right density**

Buildings in new communities should be at a human scale, with a range of densities across the development (although an inverse correlation between housing density and wealth should be avoided). Depending on the location and size of the place, the density should be sufficient to support a frequent, viable public transport network. To help achieve sustainable transport across the local population, local authorities and delivery partners should design the strategic street and public transport networks to ensure that they are well connected, that neighbourhoods are of sufficient density to support public transport and economic vitality,<sup>56</sup> and that the road network meets the needs of the operators, pedestrians, and cyclists.<sup>57</sup> Densities should also be sufficient to support community facilities built on the site, or within easy reach by sustainable modes – again helping to reduce the need for reliance on the private car.

## **4.3 Principle 8: Apply a user hierarchy**

The government’s *National Design Guide*<sup>58</sup> recommends the adoption of a clear layout and hierarchy of streets and other routes, to help people to find their way around and aid their

55 *Cycling and Walking Investment Strategy*. Department for Transport, Apr. 2017.

<https://www.gov.uk/government/publications/cycling-and-walking-investment-strategy>

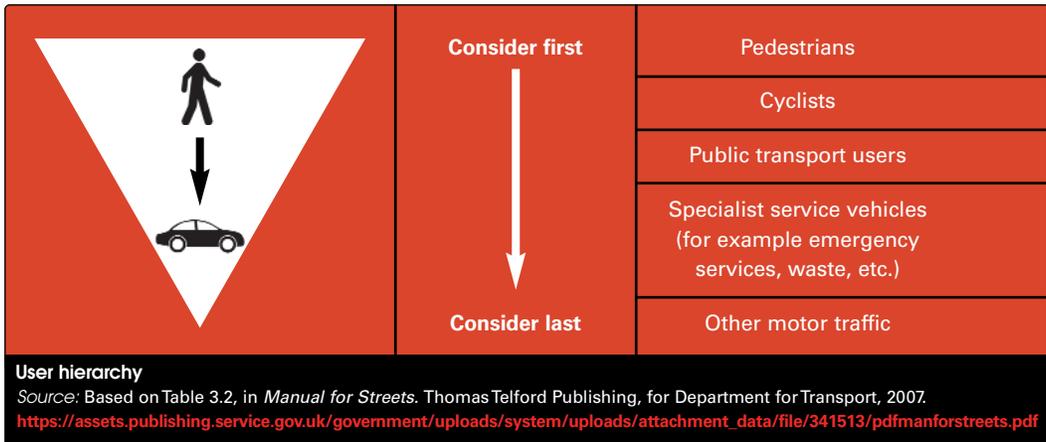
56 *Guide 3: Design and Masterplanning*. Garden City Standards for the 21st Century: Practical Guide for Creating Successful New Communities. TCPA, Dec. 2017.

<https://www.tcpa.org.uk/Handlers/Download.ashx?IDMF=79f031bb-14de-496c-b8dd-0ce34c4801f9>

57 T Pharoah: *Buses in Urban Developments*. Chartered Institution of Highways & Transportation, Jan. 2018.

[https://www.ciht.org.uk/media/4459/buses\\_ua\\_tp\\_full\\_version\\_v5.pdf](https://www.ciht.org.uk/media/4459/buses_ua_tp_full_version_v5.pdf)

58 *National Design Guide: Planning Practice Guidance for Beautiful, Enduring and Successful Places*. Ministry of Housing, Communities and Local Government. Oct. 2019. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/843468/National\\_Design\\_Guide.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/843468/National_Design_Guide.pdf)



**Box 11**  
**Case study – Cambridgeshire Guided Busway**



The Cambridgeshire Guided Busway connects Cambridge, Huntingdon and St Ives, and will also serve Northstowe new town, linking its 10,000 homes to Cambridge North railway station in under 10 minutes. It is the longest guided busway in the world, with 16 miles of route.

Guided buses bring together the local access qualities of the bus and the segregated infrastructure of railways. The Cambridgeshire scheme includes two sections of guided operation, a bus-only road, and on-street operation in conventional bus lanes. In some sections of the route there is also an adjoining cycleway, offering safer cycling and walking. The track opened on August 2011 and in the first year of operation 2.5 million trips were made.

Cambridgeshire Guided Busway is a major sustainable transport project with a strong focus on environmental design and landscape as it runs through the sensitive Cambridgeshire countryside. Green infrastructure is integrated along the corridor, including wildlife sites, protected species habitats, and archaeological sites. In 2011 it won a Green Apple Award for Environmental Best Practice and in 2012 it was the winner of the National Transport Award for the Most Innovative Transport Project.

journeys. Roads are shared by a variety of users and are used for a variety of purposes: in a well designed place the functions of the roads and streets are understood, and this understanding drives a design which facilitates patterns of easy movement. These functions include supporting walking, cycling and convenient public transport, and help in providing access to facilities, employment, and services. Streets and networks have a contribution to make in delivering high-quality places: they are core components of urban character, and their success is measured both by how well they function and by how well they contribute to the quality and character of the place. The built environment should also be inclusive, well designed, accessible and safe, and should recognise the needs of people of all ages and abilities.

The *National Design Guide* gives a list (on page 22) of the key features that a well designed movement network needs to have, in which the prioritisation of pedestrians and cyclists is highlighted. The Department for Transport's cycling and walking policy paper<sup>59</sup> sets out (on pages 40-48) summary principles for cycle infrastructure design.

Prioritising pedestrians and cyclists involves creating routes that are safe, direct, convenient, inclusive and accessible. The street design process should apply a user hierarchy, with pedestrians at the top and considered first. The hierarchy should help to ensure that streets serve all their users in a balanced way.<sup>60</sup> Routes should be designed so that people want to use them – as parts of attractive spaces, with good sightlines, and with public rights of way protected, enhanced and well linked into the wider network of pedestrian and cycle routes.

## 4.4 Principle 9: Consider key design features

Basic design features within the new Garden City play a crucial part in ensuring that sustainable transport is possible. The layout should be designed around walking, cycling and public transport, not parking and private cars.

### Housing design and parking

Many developments have been built under the assumption that the private car will be residents' main mode of transport, but the design and layout of housing development should make walking, cycling and using public transport easy, convenient and pleasant for residents under a sustainable transport vision from the outset. Homes in new Garden Cities should be in appealing, well designed areas close to bus stops and train stations, which should be co-located with shops and accessible leisure facilities where appropriate. There should be ample space to store bicycles in or near homes – and it should be more conveniently located than any car parking. Cycleways and footpaths need to be within a short distance of the home and lead to destinations that have facilities such as mode change sites, showering facilities, or parking.

How car parking is arranged has a fundamental effect on the quality of a place or development, as does the number of spaces provided. Space for car parking should be limited whenever possible, with lower levels in high-density areas and when sustainable transport has been designed in and provided. Such space that is provided should be safe and meet the needs of different users, including occupants, visitors, and people with disabilities. It may be accommodated in a variety of ways in terms of location, allocation,

59 *Gear Change: A Bold Vision for Cycling and Walking*. Policy Paper. Department for Transport, Jul. 2020. <https://www.gov.uk/government/publications/cycling-and-walking-plan-for-england>

60 *Manual for Streets*. Thomas Telford Publishing, for Department for Transport, 2007. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/341513/pdfmanforstreets.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/341513/pdfmanforstreets.pdf)

## Box 12

### Case study – Design for Ebbsfleet

Ebbsfleet Development Corporation (EDC) has developed (non-statutory) design guidance to inform all planning applications in Ebbsfleet Garden City. It covers a variety of areas including Ebbsfleet’s Sustainable Travel Strategy, which outlines how to deliver safe, convenient and affordable travel options for local journeys. EDC will use the guidance to structure discussions during pre-application discussions within the general approval process to frame the design of the development overall. The expectation is that new applications will comply fully with the guidance or explain why they do not.

The guidance is structured around five key steps:

- **Step 1:** Provide sustainable travel facilities within the project.
- **Step 2:** Align parking provision with the Sustainable Travel Strategy.
- **Step 3:** Locate parking discretely.
- **Step 4:** Enable vehicle charging.
- **Step 5:** Proactively manage parking.

Guidance is offered for each of the steps, along with parking standards and requirements and management plans to ensure sustainable travel within Ebbsfleet. Further information is available from the EDC website, at <https://www.designforebbsfleet-sustainabletravel.org/> and <https://www.designforebbsfleet.org/home>

## Box 13

### Street layouts

Campaign for Better Transport<sup>i</sup> recommends that street layouts should focus on 20 mph maximum speeds, ‘home zone’ street design, and a network for safe, convenient and attractive routes for cyclists and pedestrians. The layout of streets and paths in new developments should also facilitate direct and efficient bus operation, with direct and pleasant walking routes to bus stops.<sup>ii</sup>

i *Getting There: How Sustainable Transport Can Support New Development*. Campaign for Better Transport, 2015. [https://bettertransport.org.uk/sites/default/files/research-files/Getting\\_there\\_final\\_web\\_0.pdf](https://bettertransport.org.uk/sites/default/files/research-files/Getting_there_final_web_0.pdf)

ii T Pharoah: *Buses in Urban Developments*. Chartered Institution of Highways & Transportation, Jan. 2018. [https://www.ciht.org.uk/media/4459/buses\\_ua\\_tp\\_full\\_version\\_v5.pdf](https://www.ciht.org.uk/media/4459/buses_ua_tp_full_version_v5.pdf)

and design.<sup>61</sup> New settlements should also employ parking standards that make effective public transport connections essential, viable, and a preferred choice. The location and number of parking spaces should link explicitly to mode share targets and should be part of a wider parking strategy which includes innovative solutions such as parking barns.

Well designed cycle parking at homes and other destinations should be conveniently sited to encourage greater use. Electric vehicle/cycle spaces and charging points need to be suitably located and designed to avoid street clutter. Access for servicing – including refuse collection, deliveries, and removals – also should be well integrated into developments.<sup>62</sup>

61 *National Design Guide: Planning Practice Guidance for Beautiful, Enduring and Successful Places*. Ministry of Housing, Communities and Local Government. Oct. 2019. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/843468/National\\_Design\\_Guide.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/843468/National_Design_Guide.pdf)

62 *Ibid.*

## Box 14

### Case study – Bath Riverside

Bath Riverside is a regeneration project located on a brownfield former industrial site to the west of the centre of Bath. With over 2,000 homes being built by Crest Nicholson, the site is dense enough to support local facilities and public transport. The development has helped to improve public transport in the wider area and has introduced new (as well as enhanced existing) pedestrian and cycling links. Car parking is limited, and public space is shaped around walking – good-quality pedestrian routes are located across the development. To promote the use of public transport, a free one-month pass is offered to every Bath Riverside household, as well as free car club membership and a £100 cycle voucher.

## Street design

The *Manual for Streets*<sup>63</sup> and *Manual for Streets 2*<sup>64</sup> advise that street design should factor in the important community function of streets as spaces for social interaction. Streets should be created as a network that provides permeability and connectivity to main destinations and offers a choice of different routes. Street character should be developed on a location-specific basis, with reference to both the place and movement functions for each street. Street design should consider wayfinding strategies as a way to promote active travel in a development. NHS England's *Putting Health into Place* publications<sup>65</sup> include a series of strategies to help people find their way around.

Streets should also be designed to accommodate buses, which provide an easy way to integrate public transport into a new Garden City. Buses should be available from the first occupation, offering services within and connecting to other networks outside the community. Bus routing should be direct and fast and have easily understandable networks. They do not have to be segregated. Bus journeys should go through the main spine of the development, while cars should be deviated through outside routes to avoid congestion and make them a less convenient option than the bus and other forms of sustainable transport.

## 4.5 Principle 10: Integrate green infrastructure and climate resilience within transport design

When carefully introduced, green infrastructure can bring significant benefits to transport systems. It often leads to lower costs and delivery risk as it can help increase the resilience of transport infrastructure to climate change. For instance, the use of sustainable drainage systems and green space within road or rail drainage strategies can support transport performance, often more effectively and sustainably than hard infrastructure can,<sup>66</sup> and it

63 *Manual for Streets*. Thomas Telford Publishing, for Department for Transport, 2007. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/341513/pdfmanforstreets.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/341513/pdfmanforstreets.pdf)

64 *Manual for Streets 2: Wider Application of the Principles*. Chartered Institution of Highways & Transportation, Sept. 2010. <https://tsrgd.co.uk/pdf/mfs/mfs2.pdf>

65 *Putting Health into Place – Principles 4-8. Design, Deliver and Manage*. NHS England, Sept. 2019. <https://www.england.nhs.uk/wp-content/uploads/2019/09/hip-2-design-deliver-manage.pdf>

66 H Wright and J Wheelwright: *Delivering Green Infrastructure along Linear Assets. Scoping Study (Phase 1)*. CIRIA (Construction Industry Research and Information Association), Nov. 2017. [https://www.ciria.org/Resources/Free\\_publications/Delivering\\_green\\_infrastructure\\_along\\_linear\\_assets\\_Scoping\\_study\\_p1\\_C771.aspx](https://www.ciria.org/Resources/Free_publications/Delivering_green_infrastructure_along_linear_assets_Scoping_study_p1_C771.aspx)

**Box 15****Case study – Northstowe’s integrated transport system**

Northstowe has been designed with reference to an integrated transport system. A park and ride system will serve the town, supported by a new dedicated bus route along the new settlement’s spine, along with integrated cycleways. The new settlement also benefits from the Cambridgeshire Guided Busway (see Box 11).

The developers have created a travel plan for the whole town and have funded a travel plan co-ordinator to work with residents to promote walking, cycling, and public transport use. The plan aims to improve transport options, facilitate sustainable travel, and encourage behaviour change, leading to the use of more sustainable transport modes (aided by a travel information pack and a walking/cycling map covering the local area, distributed to new residents). The developers are offering new residents subsidised bus ‘taster’ tickets, walking/cycling equipment vouchers (value up to £50), and cycle training ‘taster’ sessions.

These activities were a requirement from South Cambridgeshire District Council as part of the Section 106 planning agreement.

can also contribute to creating an attractive built environment through enhanced landscaping, and can provide shade for walking and cycling.

Walking and cycling routes should be safe and attractive, incorporate green infrastructure, have good signage, feature benches along the way, and link places of interest and services to homes. Spaces should be accessible, inclusive and respond to the desire lines of users, prioritising the pedestrian/cyclist experience over the movements of private cars. The Garden City should incorporate easy, walkable routes to high-quality green spaces for recreation and leisure that are within close proximity to housing, thus helping to keep people active – supporting the active travel aim within Principle 2, above. Blue infrastructure, such as riverways, should also be considered as a means of transport if applicable. Adapting transport networks to new or existing green infrastructure also enhances ecological connectivity, improves the landscape, and provides wider goods and services that benefit local communities.

# 5 Funding and delivery

## 5.1 Funding

Finance for transport infrastructure in new Garden Cities can be secured from a combination of development contributions and wider public sector investment programmes. In many cases, infrastructure will be funded and delivered in accordance with planning obligations attached to the planning permission. These obligations set out who is responsible for delivering the infrastructure, when it is needed, and how it will be funded. Further details are set out in the TCPA's *Finance and Delivery Practical Guide*.<sup>67</sup>

### Section 106 agreements

Section 106 agreements can be used to capture the works, provisions and contributions required from developers to mitigate the impact of the development. Appropriate review mechanisms over the course of delivery should be in place to enable them to reflect changes in the viability and delivery of the new Garden City.

### Community Infrastructure Levy (CIL)

The Community Infrastructure Levy is a planning charge levied to help deliver infrastructure within a local authority area. Local authorities should consider the role that CIL can play in delivering infrastructure necessary to support development. Further information on CIL can be found on the government's website.<sup>68</sup>

### Current funding opportunities

*The TCPA maintains a live list of current funding opportunities for new communities at <https://www.tcpa.org.uk/funding-opportunities-for-new-communities>*

## 5.2 Checklists and tools

### Active Design, Sport England

<https://sportengland-production-files.s3.eu-west-2.amazonaws.com/s3fs-public/spe003-active-design-published-october-2015-email-2.pdf>

Sport England's *Active Design* guidelines can be used to ensure that public transport and walking and cycling networks permeate through development areas and into existing communities in a safe, convenient way. The guidance holds that, to encourage active travel successfully, initiatives must be tailored to the local population and delivered in a personalised way.

67 *Guide 2: Finance and Delivery*. Garden City Standards for the 21st Century: Practical Guide for Creating Successful New Communities. TCPA, Nov. 2017.

<https://www.tcpa.org.uk/Handlers/Download.ashx?IDMF=d4eb68bb-95c3-4b8d-b9b9-a6cb080d76bb>

68 'Community Infrastructure Levy'. *Planning Practice Guidance*. Ministry of Housing, Communities and Local Government, updated Sept. 2019. <https://www.gov.uk/guidance/community-infrastructure-levy>

### **Checklist for New Housing Developments, Transport for New Homes**

<https://www.transportfornewhomes.org.uk/the-project/checklist-for-new-housing-developments/>

Transport for New Homes' *Checklist for New Housing Developments* lists relevant factors such as:

- a location within or closely connected to an existing settlement that has a clear centre;
- a welcoming environment, not dominated by car parking;
- local facilities that are easily accessible without a car; and
- frequent public transport services in place from the first day of occupation.

The *Checklist* enables users to determine, against the criteria set out, a 'red', 'amber' or 'green' rating for how well a housing plan will avoid car dependency.

### **Garden Communities Toolkit, Homes England**

<https://www.gov.uk/guidance/garden-communities>

The Homes England *Garden Communities Toolkit* provides information on how to plan, design and develop a new 'garden community'. It sets out a series of key points on how to deliver new communities, including delivery mechanisms and infrastructure. The CIHT's *Better Planning, Better Transport, Better Places*<sup>69</sup> gives further details on how to integrate some of the features mentioned in the *Toolkit*, including a recommendation that Local Plans should be accompanied by an Infrastructure Delivery Plan.

### **Health Impact Assessment Tools, Department of Health and Social Care**

<https://www.gov.uk/government/publications/health-impact-assessment-tools>

*Health Impact Assessment Tools*, published by the then Department of Health in 2010, gives guidance on how to carry out the Health Impact Assessments (HIAs) now widely required by local planning authorities for planning applications for major developments. An HIA can be used to systematically consider how a development can address health impacts and promote good health. Alternatively, health impacts can also be considered in a Design and Access Statement or in an Environmental Impact Assessment (EIA).

### **Healthy Streets Check for Designers, Transport for London**

<https://healthystreets.com/2017/11/22/healthy-streets-check-for-designers/>

Transport for London's *Healthy Streets Check for Designers* tool aims to prompt designers to consider issues that they can shape to influence the human experience of being on a street. It also enables decision-makers to compare the relative performance of different streets. This technical tool is a spreadsheet of 31 metrics that can yield precise values for any street. The output is a score indicating how a street's engineering layout and management of traffic perform against the ten 'Healthy Streets Indicators'. It can be used to assess an existing street or a plan for a new layout.

### **Planning for Walking Toolkit, Transport for London**

<http://content.tfl.gov.uk/the-planning-for-walking-toolkit.pdf>

Transport for London's *Planning for Walking Toolkit* is a detailed resource for planners and designers, giving a list of options for collecting and assessing data that can be used to inform design decisions.

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69 *Better Planning, Better Transport, Better Places*. Chartered Institution of Highways & Transportation, Aug. 2019.  
[https://www.ciht.org.uk/media/10218/ciht-better-planning-a4\\_updated\\_linked\\_.pdf](https://www.ciht.org.uk/media/10218/ciht-better-planning-a4_updated_linked_.pdf)

# 6

## Sources of further information

### **TCPA publications and resources on Garden Cities and new communities**

#### ■ ***Garden City Standards for the 21st Century: Practical Guides for Creating Successful New Communities***

The TCPA has produced a suite of guidance outlining practical steps for all those interested in making 21st-century Garden Cities a reality. Guidance provides detail and case studies on a wide range of key issues, including planning, investment, land assembly, delivery, and long-term stewardship:

*Guide 1: Locating and Consenting New Garden Cities* (2017)

*Guide 2: Finance and Delivery* (2017)

*Guide 3: Design and Masterplanning* (2017)

*Guide 4: Planning for Energy and Climate Change* (2016)

*Guide 5: Homes for All* (2016)

*Guide 6: I'd Love to Live There! Planning for Culture and the Arts* (2016)

*Guide 7: Planning for Green and Prosperous Places* (2017, revised 2018)

*Guide 8: Creating Health-Promoting Environments* (2017)

*Guide 9: Long-Term Stewardship* (2017)

*Guide 10: 'Edible' Garden Cities* (2019)

*Guide 11: People, Planning and Power* (2019)

*Guide 12: Modern Methods of Construction* (2020)

*Guide 13: Sustainable Transport* (2020)

All available at <https://www.tcpa.org.uk/guidance-for-delivering-new-garden-cities>

#### ■ ***The Garden City Opportunity: A Guide for Councils***. Jan. 2020.

<https://www.tcpa.org.uk/the-gc-opportunity-guide-for-councils>

#### ■ ***The Art of Building a Garden City – Garden City Standards for the 21st Century***. Jul. 2014.

<https://www.tcpa.org.uk/Handlers/Download.ashx?IDMF=15aa0250-9200-491a-9f56-b81475df64ad>

#### ■ ***New Towns and Garden Cities – Lessons for Tomorrow. Stage 2: Lessons for Delivering a New Generation of Garden Cities***. Sept. 2015.

<https://www.tcpa.org.uk/Handlers/Download.ashx?IDMF=62a09e12-6a24-4de3-973f-f4062e561e0a>

#### ■ **TCPA New Communities Group**

The New Communities Group (NCG) is a group of ambitious local authorities and development corporations planning and delivering exemplary large-scale new communities. The NCG helps in developing plans, providing political support, and encouraging a sharing of knowledge and best practice through seminars, workshops, study visits, parliamentary briefings, ministerial meetings, and newsletters.

<http://www.tcpa.org.uk/new-communities-group>

## **Other bodies offering resources**

### **Campaign for Better Transport**

<https://bettertransport.org.uk/>

Campaign group working to shape the future of mobility by collaborating with national and local government, developers and communities to make transport better, greener, healthier, and affordable.

### **Centre for Connected and Autonomous Vehicles**

<https://www.gov.uk/government/organisations/centre-for-connected-and-autonomous-vehicles>

A joint initiative by the Department for Business, Energy and Industrial Strategy and the Department for Transport, working across government to support the market for connected and automated vehicles.

### **Chartered Institution of Highways & Transportation (CIHT)**

<https://www.ciht.org.uk/>

Body representing and qualifying professionals who plan design, manage and maintain transport and infrastructure.

### **Committee on Climate Change**

<https://www.theccc.org.uk/>

Independent, statutory body established under the Climate Change Act 2008, advising the UK and devolved governments on emissions targets and reporting to Parliament on progress made in reducing greenhouse gas emissions and preparing for and adapting to the impacts of climate change.

### **Connected Cities**

<http://www.connectedcities.co.uk/home>

Campaigning group advocating a global sustainable development strategy that can accommodate sustainably all predicted population growth.

### **Foundation for Integrated Transport**

<http://integratedtransport.co.uk/about-fit/>

Grant-making charity aiming to promote transport as a basic human right and tackle climate change and emissions from transport.

### **Greener Journeys**

<https://greenerjourneys.com/>

Organisation researching the social, economic and environmental benefits of public transport and campaigning to make sure that those benefits are realised. Its Transport Knowledge Hub, co-funded by the Department for Transport, operates to encourage investments that facilitate inclusive and sustainable economic growth.

### **International Association of Public Transport**

<https://www.uitp.org/>

The Union Internationale des Transports Publics (UITP), a worldwide network bringing together public transport stakeholders and sustainable transport modes.

### **Living Streets**

<https://www.livingstreets.org.uk/>

Campaigning charity working to achieve a better walking environment and inspire people to walk more.

### **Public Health England**

<https://www.gov.uk/government/organisations/public-health-england>

An executive agency of the Department of Health and Social Care working to improve the nation's health and reduce health inequalities (in 2020 the government announced that Public Health England would cease to exist from 2021 and its work would be transferred to other organisations).

### **RAC Foundation**

<https://www.racfoundation.org/>

Transport policy and research organisation that explores the economic, mobility, safety and environmental issues relating to roads and their users.

### **Transport for New Homes**

<http://www.transportformewhomes.org.uk/>

Campaigning and research group that aims to bring transport and planning together to ensure that new housing is built so that residents can walk, cycle and use public transport to go about their daily lives.

### **Transport Research Laboratory**

<https://trl.co.uk/>

Independent global research centre for innovation in transport and mobility.

### **Urban Transport Group**

<http://www.urbantransportgroup.org/>

The UK's network of city region transport authorities, working to ensure that transport plays its part in making city regions greener, fairer, happier, healthier and more prosperous places.

### **Other useful publications**

#### ***A Time of Unprecedented Change in the Transport System: The Future of Mobility***

Government Office for Science, Jan. 2019

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/780868/future\\_of\\_mobility\\_final.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/780868/future_of_mobility_final.pdf)

#### ***Active Design: Planning for Health and Wellbeing through Sport and Physical Activity***

Sport England, Oct. 2015

<https://sportengland-production-files.s3.eu-west-2.amazonaws.com/s3fs-public/spe003-active-design-published-october-2015-email-2.pdf>

#### ***Ageing and Mobility: A Grand Challenge***

Centre for Ageing Better, Sept. 2019

<https://www.ageing-better.org.uk/sites/default/files/2019-09/Ageing-and-mobility-grand-challenge.pdf>

#### ***Better Planning, Better Transport, Better Places***

Chartered Institution of Highways & Transportation, Aug. 2019

[https://www.ciht.org.uk/media/10218/ciht-better-planning-a4\\_updated\\_linked\\_.pdf](https://www.ciht.org.uk/media/10218/ciht-better-planning-a4_updated_linked_.pdf)

#### ***D Birkbeck and S Kruczkowski: Building for Life 12: The Sign of a Good Place to Live***

Nottingham Trent University: CADBE, for the Building for Life Partnership, 2015

[https://www.designcouncil.org.uk/sites/default/files/asset/document/Building%20for%20Life%202012\\_0.pdf](https://www.designcouncil.org.uk/sites/default/files/asset/document/Building%20for%20Life%202012_0.pdf)

***Building Sustainable Transport into New Developments: A Menu of Options for Growth Points and Eco-towns***

Department for Transport, Apr. 2008

<https://iaqm.defra.gov.uk/documents/sustainabletransnew.pdf>

***T Pharoah: Buses in Urban Developments***

Chartered Institution of Highways & Transportation, Jan. 2018.

[https://www.ciht.org.uk/media/4459/buses\\_ua\\_tp\\_full\\_version\\_v5.pdf](https://www.ciht.org.uk/media/4459/buses_ua_tp_full_version_v5.pdf)

***Bus Services and New Residential Developments: General Highways and Urban Design Advice to Applicants and Highways Authorities***

Stagecoach, 2017

<https://www.stagecoachgroup.com/~media/Files/S/Stagecoach-Group/Attachments/pdf/bus-services-and-new-residential-dev.pdf>

***Checklist for New Housing Developments***

Transport for New Homes, 2019

<https://www.transportfornewhomes.org.uk/the-project/checklist-for-new-housing-developments/>

***Cycling and Walking Investment Strategy: Report to Parliament***

Department for Transport. Feb. 2020

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/863723/cycling-and-walking-investment-strategy-report-to-parliament.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/863723/cycling-and-walking-investment-strategy-report-to-parliament.pdf)

***H Wright and J Wheelwright: Delivering Green Infrastructure along Linear Assets. Scoping Study (Phase 1)***

CIRIA (Construction Industry Research and Information Association), Nov. 2017

[https://www.ciria.org/Resources/Free\\_publications/Delivering\\_green\\_infrastructure\\_along\\_linear\\_assets\\_Scoping\\_study\\_p1\\_C771.aspx](https://www.ciria.org/Resources/Free_publications/Delivering_green_infrastructure_along_linear_assets_Scoping_study_p1_C771.aspx)

***Garden Communities Toolkit***

Homes England, Sept. 2019

<https://www.gov.uk/guidance/garden-communities>

***Gear Change: A Bold Vision for Cycling and Walking***

Department for Transport, Jul. 2020

<https://www.gov.uk/government/publications/cycling-and-walking-plan-for-england>

***Getting There: How Sustainable Transport Can Support New Development***

Campaign for Better Transport, 2015

[https://bettertransport.org.uk/sites/default/files/research-files/Getting\\_there\\_final\\_web\\_0.pdf](https://bettertransport.org.uk/sites/default/files/research-files/Getting_there_final_web_0.pdf)

***Healthy Streets for London: Prioritising Walking, Cycling and Public Transport to Create a Healthy City***

Transport for London, Feb. 2017

<http://content.tfl.gov.uk/healthy-streets-for-london.pdf>

***Integrating the Planning and Delivery of Sustainable Transport with New Housing Development***

Greener Journeys, for the Transport Knowledge Hub, Feb. 2019

[https://transportknowledgehub.org.uk/wp-content/uploads/2019/02/20190213\\_KPMG-Sustainable-Transport-and-New-Housing-Report-for-TKH\\_FINAL.....pdf](https://transportknowledgehub.org.uk/wp-content/uploads/2019/02/20190213_KPMG-Sustainable-Transport-and-New-Housing-Report-for-TKH_FINAL.....pdf)

***Managing Grassland Road Verges: A Best Practice Guide***

Plantlife, Sept. 2019

[https://www.plantlife.org.uk/application/files/9415/6954/1807/Managing\\_grassland\\_road\\_verges.pdf?utm\\_source=Main+Plantlife+Mailing+List&utm\\_campaign=0b6d1fd445-RV\\_SEPT19\\_NEWGUIDELINES\\_MEM&utm\\_medium=email&utm\\_term=0\\_ce964b84b6-0b6d1fd445-285553621&mc\\_cid=0b6d1fd445&mc\\_eid=60c4e85943](https://www.plantlife.org.uk/application/files/9415/6954/1807/Managing_grassland_road_verges.pdf?utm_source=Main+Plantlife+Mailing+List&utm_campaign=0b6d1fd445-RV_SEPT19_NEWGUIDELINES_MEM&utm_medium=email&utm_term=0_ce964b84b6-0b6d1fd445-285553621&mc_cid=0b6d1fd445&mc_eid=60c4e85943)

***Manual for Streets***

Thomas Telford Publishing, for Department for Transport, 2007.

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/341513/pdfmanforstreets.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/341513/pdfmanforstreets.pdf)

***Manual for Streets 2: Wider Application of the Principles***

Chartered Institution of Highways & Transportation, Sept. 2010

<https://tsrgd.co.uk/pdf/mfs/mfs2.pdf>

***National Design Guide: Planning Practice Guidance for Beautiful, Enduring and Successful Places***

Ministry of Housing, Communities and Local Government, Oct. 2019.

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/843468/National\\_Design\\_Guide.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/843468/National_Design_Guide.pdf)

***National Planning Policy Framework***

Ministry of Housing, Communities and Local Government, Feb. 2019

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/810197/NPPF\\_Feb\\_2019\\_revised.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf)

***Pedestrians First: Tools for a Walkable City***

Institute for Transportation and Development Policy, 2018

[https://itdpdotorg.wengine.com/wp-content/uploads/2018/02/pedestrians\\_FINAL.pdf](https://itdpdotorg.wengine.com/wp-content/uploads/2018/02/pedestrians_FINAL.pdf)

**R Gallagher and J Parkin: *Planning for Cycling***

Chartered Institution of Highways & Transportation, Oct. 2014

[https://www.ciht.org.uk/media/4461/ciht\\_-\\_planning\\_for\\_cycling\\_proof\\_v2\\_singles.pdf](https://www.ciht.org.uk/media/4461/ciht_-_planning_for_cycling_proof_v2_singles.pdf)

***Planning for Walking Toolkit: Tools to Support the Development of Public Realm Design Briefs in London***

Transport for London, Mar. 2020

<http://content.tfl.gov.uk/the-planning-for-walking-toolkit.pdf>

***Planning Practice Guidance***

Ministry of Housing, Communities and Local Government

<https://www.gov.uk/government/collections/planning-practice-guidance>

***Putting Health into Place – Principles 4-8. Design, Deliver and Manage***

NHS England, Sept. 2019

<https://www.england.nhs.uk/wp-content/uploads/2019/09/hip-2-design-deliver-manage.pdf>

**G Marsden, J Anable, J Bray, E Seagriff and N Spurling: *Shared Mobility – Where Now, Where Next? Second Report of the Commission on Travel Demand***

Centre for Research into Energy Demand Solutions, Sept. 2019

<https://www.creds.ac.uk/wp-content/uploads/CREDS-Shared-mobility-comm-report-WEB.pdf>

***Transport for New Homes, Project Summary and Recommendations***

Transport for New Homes, Jul. 2018

<https://www.transportfornewhomes.org.uk/wp-content/uploads/2018/07/transport-for-new-homes-summary-web.pdf>