



RTPI

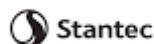
Royal Town Planning Institute

**RTPI
Research
Paper**

SEPTEMBER 2019

A SMARTER APPROACH TO INFRASTRUCTURE PLANNING

**Overcoming complexity in city-regions
and counties**



rtpi.org.uk

Registered charity number: 262865
Scottish registered charity number: SC 037841

The Royal Town Planning Institute (RTPI)

RTPI champions the power of planning in creating prosperous places and vibrant communities. We have over 25,000 members in the private, public, academic and voluntary sectors. Using our expertise and research we bring evidence and thought leadership to shape planning policies and thinking, putting the profession at the heart of society's big debates. We set the standards of planning education and professional behaviour that give our members, wherever they work in the world, a unique ability to meet complex economic, social and environmental challenges. We are the only body in the United Kingdom that confers Chartered status to planners, the highest professional qualification sought after by employers in both private and public sectors.

Research team

University of the West of England, Department of Geography and Environmental Management:

- Hannah Hickman, Senior Research Fellow
- Stephen Hall, Senior Lecturer
- Nick Croft, Senior Lecturer

Peter Brett Associates, Stantec:

- Keith Mitchell, Director Community Development & Infrastructure
- Jo Lee, Senior Associate Planner

Royal Town Planning Institute project manager:

- James Harris, Policy and Networks Manager

Steering group members:

- Stefan Webb, Future Cities Catapult
- Harriet Egdell-Page, National Infrastructure Commission
- Catriona Riddell, Catriona Riddell & Associates
- Stephen Passmore, Resilience Brokers

Acknowledgements

The research team would like to thank all the 40 interviewees and many survey respondents who generously contributed their time to this study. For reasons of anonymity, no individual is directly attributable in this report.

This project is partly funded by the County Councils Network, which is a cross-party special interest group of the Local Government Association representing England's county local authorities.



Contents

Introduction	4
Summary of research findings.....	6
1. Infrastructure planning: what does the literature say?	11
Four overarching themes within the literature	11
The role of planning in infrastructure provision.....	13
Barriers to infrastructure integration in practice.....	14
Looking to the future: key principles for effective infrastructure planning.....	16
2. Introducing the case studies	19
Staffordshire County Council (SCC)	19
Cambridgeshire and Peterborough Combined Authority (CPCA)	20
Glasgow City Council (GCC)	20
3. Key case study findings.....	22
Governance arrangements in the three case studies	22
Staffordshire County Council: key findings.....	23
Cambridgeshire and Peterborough Combined Authority: key findings	24
Glasgow City Council: key findings	25
Agencies of governance, providers and funders of infrastructure	25
4. Core findings	29
Principle 1: Place, vision and objectives	29
Principle 2: Prioritisation and funding.....	32
Principle 3: Engagement and alignment.....	37
Principle 4: Resources, capacity and skills	42
Principle 5: Learning and dissemination.....	46
5: Conclusions and a framework for discussion	48
Selected references.....	52

Who should read this report?

This report is for anyone interested in the role of infrastructure in delivering better places for the benefit of communities, the economy and the environment. While its focus is principally on England and Scotland, it has wider relevance to the UK and internationally.

Introduction

In December 2018 the University of the West of England, in partnership with Peter Brett Associates (now part of Stantec), were commissioned to undertake a research study on integrated infrastructure planning in city-regions and counties on behalf of the RTPI.

This study forms part of the RTPI's Better Planning Work Programme, which is intended to provide practical advice and intelligence to RTPI members and others, to demonstrate how planning is part of the solution to major social, economic and environmental challenges.

Infrastructure planning: why is it important?

"...much of the country's infrastructure has not kept pace with population growth, demand and advances in technology. The UK must stop running to stand still"
(National Infrastructure Assessment, 2018)

As "*societies rely on infrastructure for all that they do*" (Morphet, 2016, preface), investment in infrastructure is an investment in places, people and communities, with infrastructure quietly supporting daily lives: delivering heat and power; providing clean drinking water; removing waste; and enabling people to travel within and outside the UK. There is an increasing recognition that effective and efficient infrastructure is important to both local and national economic prosperity, and that there are quantifiable links between infrastructure investment, competitiveness and productivity. Furthermore, there are clear societal and economic consequences of failing to invest, as infrastructure plays a critical role in addressing environmental challenges and the transition to a zero-carbon future.

Planning plays a central role in co-ordinating the delivery of infrastructure to serve both new and existing development. In plan-making it identifies infrastructure needs and provides a strategic overview; in development management it regulates, sets conditions and raises revenue for infrastructure; and through place-leadership it engages and co-ordinates across sectors and boundaries. However, there are clear challenges both for planners in managing these processes, and for infrastructure providers in engaging with planning frameworks.

There is evidence of a disconnect between infrastructure and planning, and demand for a more joined-up approach that proactively addresses the infrastructure needs of new development and the deficits of existing settlements alike. Without this, the UK will struggle to reduce the productivity gap that exists relative to its international competitors, to meet its international obligations on climate change mitigation, to adapt to growing environmental risks, to deliver the quality and quantity of housing currently required, and to create healthy, sustainable places.

This research

The RTPI wanted to understand more about the effectiveness of current infrastructure planning processes, and to consider how these might vary in different contexts given varied governance arrangements for infrastructure planning that now exist both within England and between England and Scotland.

Using a case study and survey approach, the research team were asked, to:

1. Assist in understanding better the practical barriers to the co-ordination of infrastructure and growth, and how approaches to infrastructure planning vary under different governance arrangements;
2. Test the effectiveness of current approaches and explore how they might be improved to achieve greater integration;
3. Create visual tools to demonstrate the range of players involved in the governance and delivery of infrastructure; and
4. Provide a framework for discussing and addressing the issues that emerged.

Research approach

The core focus of the research was on three in-depth case studies, supplemented by stages 1, 3 and 4 as follows:

Research stages	Research activities	Links
1: Literature review	A review of literature on integrated infrastructure planning, to identify key themes to explore. This encompassed research and consultancy reports, strategic and local plan documentation, academic literature and press reports.	Pages 11 - 18
2: Case studies	Three in-depth case studies of infrastructure planning in different governance contexts were carried out in Staffordshire County Council, the Cambridgeshire and Peterborough Combined Authority and Glasgow City Council. These form the core focus of this research, and are explained on pages 19 to 20.	Pages 19 - 20 Appendix 1
3: National online survey	<p>A national local authority survey was carried out to explore the broader applicability of the case study findings, with questions focused on vision, policy, engagement and resources.</p> <p>Responses were sought from local planning authorities in England, Scotland, Wales and Northern Ireland by means of an invitation. A total of 56 responses were received.</p> <p>Most survey respondents (89.1%) were located in England, with a small number of responses received from Scotland (7.3%) and Wales (3.6%). 36% of completions were from Districts Councils with a further 20% from Unitary Authorities. Two thirds of survey responses were by planning officers, with other responses by elected members and senior officers.</p>	Appendix 2
4: Infrastructure provider interviews	A series of in-depth interviews were carried out with a sample of infrastructure providers operating in each of the case study areas for their perspective on planning processes and associated mechanisms in different contexts. These covered the water, energy and transport sectors.	Appendix 3

Summary of research findings

To frame the research, *five principles of good infrastructure planning* were identified:



Pages 7 to 10 summarise key research findings for each of the five principles. This includes a series of conclusions and discussion points which suggest actions to improve infrastructure planning.

These actions are aimed at a range of audiences and organisations, including: **Central Government**, **Local Government** (both upper and local tier authorities), **Infrastructure Providers** (of all kinds), the **National Infrastructure Commission** and the **Infrastructure Commission Scotland**, and others.

Principle 1: A shared vision of place, with clear objectives

What's holding this back?	What changes would help?
<p>Local planning authorities recognise the importance of a vision anchored in place and the importance of infrastructure and planning to achieve this vision. However, there is limited evidence of the sought after synergies in practice.</p> <p>Integrated infrastructure planning is hindered by complex multi-level governance arrangements. However, there exists plentiful evidence of constructive dialogue between planning authorities, to establish a clear division of labour between strategic and local planning.</p> <p>Local authorities work according to multiple and over-lapping boundaries; there is no single definition of 'functional' place.</p> <p>The demise of strategic planning in some parts of the UK over the past decade has been partially offset by recent renewed collaborative working between local planning authorities on 'larger than local issues'.</p>	<p>Central Government should show leadership on the importance of strategic direction in spatial plans and in determining at what level spatial visions should be set.</p> <p>Central Government should review the overlapping institutional boundaries of LEPs, combined authorities and other key players and seek to rationalise these where appropriate.</p> <p>Local Government needs to recognise the importance of early and collaborative engagement across boundaries to support infrastructure planning, and to align the infrastructure requirements of their spatial visions. The differing and emerging forms of strategic planning (both statutory and non-statutory) need to be both acknowledged and assessed. Wider adoption of strategic (including county wide) infrastructure plans should be encouraged.</p> <p>Infrastructure Providers need to be included within strategic level dialogues about long term growth and place plans. However, further thought is needed about how to address the perverse incentives that make it difficult for this to happen within current systems and frameworks.</p>

Principle 2: Specific infrastructure priorities identified to achieve that vision, aligned to funding sources

What's holding this back?	What changes would help?
<p>Local planning authorities are not confident that they have identified infrastructure needs and priorities clearly.</p> <p>Infrastructure funding is an 'uneven playing field.'</p> <p>In the absence of a satisfactory long-term financial settlement for local government, councils are required to put together a 'cocktail' of funding to realise their infrastructure priorities.</p> <p>Too much infrastructure funding is allocated via competitive bidding which incurs opportunity costs and encourages a 'wish list / quick win' approach.</p> <p>Local planning authorities are unduly reliant on developer contributions to fund local infrastructure.</p> <p>Austerity has encouraged local planning authorities to adopt a more entrepreneurial approach to infrastructure investment.</p>	<p>Central Government needs to address the negative impacts of a 'deal' approach to infrastructure funding, which encourage a project rather than place-based approach to funding.</p> <p>Central Government should urgently rationalise and simplify the infrastructure funding system, addressing the disbenefits – for many players – of a funding environment focussed on bidding rather than single-pot funding settlements.</p> <p>Central Government should explore how local fiscal autonomy might be extended as part of, or additional to, a deal making framework.</p> <p>Local Government needs to produce realistic, deliverable infrastructure delivery plans to ensure that investment is focussed on place-based solutions rather than on piecemeal developments. These can be done in conjunction with English combined authorities and upper tier authorities</p> <p>Further thinking is needed about how restrictions on infrastructure providers limit their freedoms to engage in longer term strategies that may derive benefits beyond their current regulatory and funding periods.</p>

Principle 3: Effective and early engagement to align planning and delivery

What's holding this back?	What changes would help?
<p>Local authorities are reliant on 3rd parties to deliver but engagement is fragmented.</p> <p>Providers rarely have contiguous geographical boundaries to those used for local planning purposes, or funding cycles that align to local authority growth plans.</p> <p>There is evidence of much positive engagement but sector experiences are extremely varied.</p> <p>Long term issues of place are absent from the regulatory framework.</p> <p>Short termism prevents engagement from happening at the right stage.</p>	<p>The National Infrastructure Commission and Infrastructure Commission for Scotland should launch enquiries into how early engagement between local authorities, providers and other stakeholders can be better facilitated to ensure infrastructure and land use is effectively planned to minimise unnecessary additional infrastructure, and optimise quality of place for communities of the future.</p> <p>For Central Government, there are important questions about its leadership role in relation to infrastructure, reflected in how it ‘tasks’ its own departments and agencies to support infrastructure planning and the level of priority and visibility planning has within Whitehall. Consideration should be given by Government to the tasking of regulators – can they be required to plan for growth?</p> <p>Local Government, whether acting at a local planning authority level, or in its role contributing to strategic functional area planning, must either establish / or contribute to a team, whose objectives are focussed solely on the co-ordination of infrastructure to deliver intended place outcomes.</p> <p>For Infrastructure Providers further thought needs to be given to how they can be incentivised – either within current or revised frameworks - to engage early in planning, with a clear and positive case made for engaging early. Providers may benefit from statutory consultee status on certain plans and projects.</p>

Principle 4: Capacity, knowledge and resources

What's holding this back?	What changes would help?
<p>Infrastructure planning appears is insufficiently visible, often treated as a sub-set rather core planning activity.</p> <p>Very few local authorities are confident they have either the funding, staff, or information needed to support effective infrastructure planning.</p> <p>There is some evident unease within the planning community about the extent and nature of the skills and knowledge needed to support effective infrastructure planning and delivery.</p> <p>There is widespread acknowledgement about the potential benefits of greater data sharing to increase knowledge and understanding on all sides but whilst there is much evidence of data being shared this appears to be very ad-hoc and sector specific</p>	<p>The RTPI, together with education and training providers, should review the core skills competencies and knowledge needed for infrastructure planning in order to support infrastructure planning as a core competency and as a specialism within existing planning degree and apprenticeship programmes, and to explore bespoke infrastructure planning qualifications as part of ongoing CPD.</p> <p>Organisations of all kinds need to ensure that they are employing people who understand and can plan in a manner that achieves engagement at all levels, from vision to delivery.</p> <p>A single, open, consistent hub for the data and evidence needed for effective infrastructure planning would help overcome the barriers created by overlapping functional/organisational geographies. Organisations such as the National Infrastructure Commission, and relevant Government bodies such as the Connected Places Catapult, need to stimulate the conversation on how to make this happen.</p>

Principle 5: Continuous learning and dissemination

What's holding this back?	What changes would help?
<p>There is a strong desire for greater learning about what 'good infrastructure planning looks like' and the sharing of good practice.</p> <p>Good practice examples are not widespread, and are largely project or site-specific, rather than representing examples of a strategic and co-ordinated approach to infrastructure planning.</p>	<p>If infrastructure planning is going to thrive and deliver real change then it needs to be more visible. There is a role for organisations such as the RTPI, National Infrastructure Commission, Infrastructure Commission for Scotland, Town and Country Planning Association, Planning Advisory Service, County Councils Network and others, to champion infrastructure planning and the sharing of good practice, providing a repository of examples.</p> <p>Consideration should be given to the establishment of a local infrastructure planning association - a membership organisation open to players and organisation of all kinds – to</p> <p>promote research into, and dissemination of effective infrastructure planning and delivery tools and techniques, policies and strategies to accommodate future change, and case studies of effective engagement, vision setting and delivery planning.</p>

1. Infrastructure planning: what does the literature say?

There is an extensive body of literature on infrastructure planning. Its scope spans multiple geographical levels, from **'big global'**, covering ideas about resilience, climate change, urbanization and population growth primarily focused on the global south (e.g. McKinsey and Co. 2016), to local and immediate **'here and now issues'** related to, for example, the infrastructure needed to deliver housing in the UK (e.g. NAO, 2019). Much of the literature highlights the varying drivers of demand for infrastructure, including: demographic change; urbanisation; technological change; climate change and resource constraints; increasing infrastructure costs; and austerity.

Four overarching themes within the literature

1: Infrastructure is integral to place making

Infrastructure is hailed as a **panacea to many global challenges** not least climate change (McKinsey and Co. 2016, Dunning and Taylor Buck, 2017, McClean, 2017), although investment in some forms of infrastructure – roads and certain forms of power (particularly in rapidly growing economies) still have substantial environmental consequences.

The World Economic Forum (2018) has shown that **economic productivity** is strongly correlated with efficient infrastructure provision. There is an increasing recognition that effective infrastructure is important to local and national prosperity and there are quantifiable links between infrastructure investment, competitiveness and productivity gains (HM Government 2017, Scottish Government 2018).

Equally, as *"societies rely on infrastructure for all that they do"* (Morphet, 2016, preface), investment in infrastructure is also acknowledged as investment in **people and communities**: delivering heat and power; providing clean drinking water; removing waste; and enabling personal mobility. Infrastructure is, thus, seen as integral to well-being (Bibby, 2016, Peter Brett Associates 2018, Peter Brett Associates 2019) and effective place-making (Young and Keil, 2010) and, as such, the literature tends to privilege the role of green and social infrastructure (Joseph Rowntree Foundation, 2011).

2: Infrastructure investment is needed in the UK

The UK is a conspicuous **under-achiever in terms of infrastructure investment and delivery** in an international context (OECD 2015, HM Government, 2017). The UK is currently ranked 11th in the world, behind Spain (10th) and the United States (9th) for the overall quality of its infrastructure, and 16th for the quality of its utilities and transport infrastructure (World Economic Forum 2018). In response, there has been a renewed emphasis on infrastructure provision in the UK, exemplified by the publication of the National Infrastructure Delivery Plan (HM Gov, 2016), the formation of the National Infrastructure Commission (NIC), and its recently published National Infrastructure Assessment (2018). These recognise the core role of infrastructure to the economy and society.

The specific infrastructure challenges of the UK include:

- The upgrading of out-moded infrastructure (Plimmer and Tetlow, 2017);
- Investment in new infrastructure to support growing parts of the UK, the effective delivery of new settlements to meet the UK's growing housing needs, and tackle its housing affordability deficit (HM Gov, 2016, Letwin Review, 2018, NAO, 2019); and
- The need to enable investment in infrastructure in more disadvantaged localities and regions (Tomaney and Pike, 2018).

3: The UK is at the apex of 'splintering urbanism'

One of the most influential theories of the contemporary infrastructure landscape is the 'splintering urbanism' thesis, introduced by Graham and Marvin (2001). It argues that there existed, internationally, a modernist 'golden age' of integrated, public investment led infrastructure provision, defined by the existence of **standardised public (or private) infrastructure monopolies** (water, telecommunications, roads and rail) that were **regulated to ensure comprehensive and uniform provision**, and informed by a rational, 'predict and provide' approach to planning (Government Office for Science, 2014). The ideal disintegrated in the face of the neo-liberal shift in national politics in the late 1970s and the marketisation of infrastructure provision and public services in the 1980s and beyond. It can be argued that – following four decades of privatization of energy, water, telecommunications and transport – the UK represents an exemplar of splintering urbanism.

"The shift towards liberalization, private provision and competition in infrastructure sectors has led to a more complex governance landscape in which utility providers must negotiate with a range of other actors to effect change ... current governance arrangements continue to operate in isolated sectors specific silos, paying limited attention to cross sectoral synergies and inter-dependencies" (Hall et al, 2012).

The theory of splintering urbanism posits the existence of unequal provision of, and access to, infrastructure and the emergence of 'premium' network space, creating new forms of infrastructure inclusion and exclusion:

"Major dangers of a lack of integration between different infrastructures because these do not suit private interests, and gaps in provision where needs are high but commercial returns are limited. These will affect different places and social groups in different ways, and represent a central challenge to contemporary practice" (Tomaney et al, 2018 232).

4: There is a call for integration

In this context, it is unsurprising that the National Infrastructure Assessment calls for a **more 'joined-up view'** to tackle the UK's needs. Indeed, there is a strong contrast between much of the more historic literature on infrastructure which focuses on specific sectors – transport, water and green infrastructure in particular - and the more recent literature which now focuses on the **challenges of achieving integration** across sectors. McClean (2017) usefully highlights different forms of integration: organisational integration (focussing on governance, management, regulation

and ownership); technological (focussing on smart grid technologies and data sharing); sectorial integration (including decentralised system control); geographical integration (including the role of spatial plans and infrastructure corridors); and social integration (focussing on collaborative behaviours). This widespread “*international clamour for the integration of infrastructures*” (Dunning and Taylor Buck, 2017) is framed around bridging the gap between infrastructure planning, on the one hand, and funding and delivery on the other, and, thus, achieving greater cost efficiency, environmental benefits and citizen focus (McClean, 2017). It also reflects the apparent synergies between infrastructure sectors – e.g. carbon reduction strategies prompt advances in fuel and vehicle technologies but these, in turn, require ever great investment in energy (i.e. electricity) generation (Hall et al, 2012).

For some commentators, the ***rise of the smart city discourse***, “*a major leitmotif in the discourse on urban development*” (Crivello 2015, quoted in Joss 2019, 3), is a concept that underpins the idea of infrastructure integration (Taylor-Buck, 2017). The ‘smart city’ ideal has proved ubiquitous but elusive. It posits the use of digitally enabled, networked infrastructure to achieve efficient resource consumption and inclusive governance (Greenfield, 2013). ***The essence of the smart city is one whose infrastructure produces data as it undertakes its tasks*** (Kitchin, 2014). The smart city ideal has the potential to transform planning; from a practice based on a traditional, a priori ‘survey, analysis, plan’ approach to one of adapting plans, in real time, as circumstances change in response to data processed. In practice, however, smart city governance has been populated by a narrow range of (mostly corporate) stakeholders and is focused on ‘market making’ activities, rather than the environmental and social domains (Glaeser and Berry, 2006; Luque-Ayala and Marvin, 2015).

The role of planning in infrastructure provision

“Infrastructure was almost a forgotten topic in urban planning (Neuman and Smith, 2010), until a recent resurgence in some quarters” (Marshall, 2014, quoted in Neuman, 2014, 795)

For most commentators within planning practice and research, such as Williams (2014) and Marshall (2014), the ***planning system has a fundamental role to play in integrated infrastructure delivery***. *“Infrastructure can and does lead planning: in strong planning traditions, infrastructure of all kinds is used to steer urbanisation, countryside policies, ecological management”* (op cit). According to Tomaney, O’Brien and Pike (2018), provision of infrastructure should be “*a key objective of the planning system*”.

The fundamental contribution of planning to integrating infrastructure provision is its focus on place which has the potential:

“...to ensure that individual developments come to be planned as part of a broader picture, rather than in isolation from each other. This means that the overall value of what is created, to both the local community and developers, exceeds what would otherwise have been the sum of its individual components” (Adams and Watkins, 2014, p. 23).

Others, however, report that ***planning is often criticised*** for its failure to implement plans and policies, partly because implementation often relies on other stakeholders (Baker and Hinks, 2009). It is often seen as a constraint on the delivery of infrastructure, particularly, although not

exclusively, in relation to the speed of decision making (Baker and Hincks, 2009, OECD 2017). There are also repeated observations within the literature about ‘poorly planned developments’ that are perceived as lacking the requisite infrastructure to support positive outcomes, such as suburban forms of car-dependent development – seen as leading to poor health, well-being and community outcomes (Peter Brett Associates, 2018). The literature also acknowledges the rise of piecemeal growth in and around settlements, for example through increasing densities, intensification and speculative small-scale development, resulting in insufficiently planned infrastructure or the inability to regulate for cumulative impact (Hickman et al 2017). These trends have been compounded by **the extension of permitted development rights** – not least in respect of the change of use from office to residential – which, **effectively absolves developers of any obligation to provide supporting infrastructure** (TCPA, 2018). The challenges for planning is that most growth is not stand alone but must address complexities of existing settlements and their perceived or real historic infrastructure deficits (Williams, 2014).

The question is the extent to which mechanisms of planning are able to effectively achieve the desired integration of infrastructure, or whether **planning and planners are inhibited or constrained by factors beyond their control?** In this regard, in the ‘splintered’ infrastructure landscape, the fact that planning does not directly fund nor deliver infrastructure, but is ‘the choreographer of other agencies and departments’ (Scottish Government, 2015), or ‘part of the steering toolkit ... helping to manage inter-dependencies’ (Marshall, 2014) is fundamental to understanding both the challenges for planning and its potential in relation to achieving integration. In providing this choreography, planning’s role is:

- **To identify need and provide strategic overview as part of the local plan-making process** (including a robust evidence base informed by an up to date Infrastructure Delivery Plan) in consultation with their neighbours and with other agencies such as the Environment Agency, and Highways England, or Transport Scotland;
- **To regulate development** by imposing conditions, and raise revenue through CIL, s.106 and s.75; and
- **To exercise leadership of place** as planners engage and co-ordinate across sectors and boundaries in order that the ‘vision for place’ comprises more than the aggregate of individual development decisions.

Barriers to infrastructure integration in practice

“Integration is needed to deal with the tensions between functional interrelatedness of land uses and institutional fragmentation of responsible actors (governmental layers, public agencies and, increasingly, private actors such as landowners and developers as well” (Heeres et al 2016, 422)

The literature widely observes - and celebrates - the strong rhetoric of infrastructure integration, and recognises that the *“tools and theory in integrated infrastructure approach do exist”* (Saidi et al, 2018), but that real application is observed to be ‘still limited’ (ibid), and *“rarely realised in practice”* (Arts et al, 2016). A wide range of clear and discernible barriers to the practice of integrated infrastructure planning are observed. Of these, the following five appear most prominent:

First, there is a perceived lack of integration and leadership at the national level on infrastructure, with the UK highlighted as “*making poor decision[s] on infrastructure in comparison to other countries*” (Institute for Government, 2018). That 26 ministers of Government have responsibility for infrastructure (ibid) illustrates the complexity of national decision making within Government, with policy and funding split across multiple departments, executive agencies and non-departmental public bodies. For planning and planners there are multiple disconnects between national infrastructure planning policy, set out in a multitude of strategic documents (e.g. the National Planning Policy Framework and National Infrastructure Plan in England, the National Planning Framework and Infrastructure Investment Plan in Scotland), and local planning policy and practice (Marshall 2017; TCPA, 2018; Townsend et al 2018). The Town and Country Planning Association’s Raynsford Review of Planning in England (2018) observed: “It is hard to imagine a more complex and diverse institutional structure in which to try to conduct strategic planning” (p.28). The NAO (2019) in its recent report ‘Planning For New Homes’ also highlighted the lack of requirement on national government to connect its plans to those plans of constituent local authorities:

“To create new homes and places for people to live, infrastructure such as transport, healthcare, schools and utilities must be in place, but this is difficult as government departments are not required to tie their investment strategies with local authorities’ infrastructure plans, creating uncertainty about how some infrastructure will be funded” (1).

Second are the varied governance and funding arrangements at a sub-national and local level which, below the national level in England includes, combined authorities, local authorities (county councils, district councils and unitary authorities), local enterprise partnerships and, from April 2018, subnational transport bodies, all of which have infrastructure roles of varying kinds. Structures also differ again in the devolved administrations of Scotland, Wales and Northern Ireland. Under variegated governance no one individual organisation has a clear view of the relationship between infrastructure types, or responsibility for ensuring co-ordinated investment decisions. This is compounded by the complexity of governance as discussed in point three below. The Institute for Government observes: “*This messy and irregular institutional set-up – particularly at the subnational level, where different areas can have very different arrangements – requires strong coordination if there is to be policy coherence. This is currently lacking*” (2018, 14). For planners and planning, the **diminution (especially in England) of the importance of strategic spatial planning has rendered planning for ‘larger than local’ provision ever more challenging**. The abolition of County Structure Plans and Regional Spatial Strategies, the greater focus on local plan making, with cross-boundary working coordinated by the duty to cooperate and statements of common ground, is widely criticised as sub-optimal for the purposes of providing co-ordination of key infrastructure (Joseph Rowntree Foundation, 2011; Mawson and McGuinness 2017).

Third is the complex organisational and investment arrangements and ownership patterns of “*the ever-growing array of agencies*” (Tewdwr-Jones and Goddard, 2014) and **infrastructure providers**. Whether public or private, each has its own investment decision making framework, timeframe and geography, with the private sector’s shareholder driven frameworks widely highlighted as also impacting the nature of decision making (Bircham Dyson Bell, 2018). The literature highlights “*single service infrastructure policy silos and independent business structures*” as being “*incapable of acting in a co-ordinated manner*” (Dunning and Taylor Buck, 2017). Each

provider appears to operate to its own timetable, geographical area, investment cycle and criteria which are seldom aligned with strategic and local plans (Heeres et al 2016). **There are also questions about a lack of mutual understanding on the part of local authorities and key infrastructure providers.** Put simply, do planners understand the needs and experiences of different sectors and, for providers, do they know how to engage with one another and with the planning system (Baker and Hinks 2009)?

Fourth is the policy and practice of spatial planning in the UK (especially England) of prioritising the short-term delivery of quantitative outputs over long term thinking on qualitative outcomes. It is commonly argued that responses to global challenges such as climate change, the ageing population, economic uncertainty and questions of (for example) design have, in the past decade, been subordinated to an immediate preoccupation with maximising the volume of housing completions (TCPA, 2016, 2018). There are, thus, real questions about whether the planning system - particularly the English planning system - in its current form, can support the necessary strategic dialogue on 'place' (see Malekpour 2015).

Fifth is the absolute lack of funding available to local authorities for infrastructure investment and uncertainty about the long term availability of funding. The regime of austerity and the diminished role of local government in the direct provision of infrastructure requires engagement with an increasing number of external players around infrastructure viability and delivery (Lowndes et al 2016, Taylor-Buck and While 2017). Local authority Infrastructure Delivery Plans evidence both uncertainty about, and severe shortfalls of, funding for their infrastructure ambitions. They resemble 'wish lists' of projects rather than prioritised strategies for achieving place-based outcomes, with CIL and S106 contributions widely highlighted as the panacea for addressing resource gaps (Baker and Hinks 2009, PBA 2016).

Looking to the future: key principles for effective infrastructure planning

"...integration would be best aided by planning according to place and not the needs of individual sectors in isolation" (Arts et al 2016)

There is a limited but growing body of literature that seeks to respond to some of the above barriers. These include advocacy documents and more practical 'how to' guides that seek **to enable the right growth in the right place with the right infrastructure at the right time.** There is striking consensus that a **clear vision of place should be the starting point.** To support this a number of principles emerge from across the literature¹. These principles – distilled in the table on the following page – have shaped this research, both in framing questions about what is currently happening on the ground, and in structuring the findings and conclusions.

¹ Key sources for the identification of key principles have been: Arts et al (2016); Baker and Hinks (2009); Centre for Progressive Health (2018); Future Cities Catapult (2016?); Housing and Finance Institute (2017); Mawson and McGuinness et al (2017); Morphet (2016); OECD, International Transport Forum (2017); Planning Advisory Service (2009); Morphet (2016); Peter Brett Associates (2016); Planning Institute Australia (2017) Tewdwr-Jones and Goddard (2014).

Principle	What does good infrastructure planning look like?
<p>Place, vision and objectives</p>	<p>A shared vision is critical for success. It should:</p> <ul style="list-style-type: none"> • Take a long-term view centred on the place ambition to ensure that the strategic vision is not lost by the easy wins of on-the-ground projects; • Relate to the appropriate functional area and take account of the relevant cross boundary relationships; • See infrastructure delivery as part of the solution to public service delivery problems – unlocking development, benefiting the local economy and society; • Draw on evidence to set clear quality of place outcome focussed objectives which reflect community priorities, (what – not how) to establish an effective and flexible framework; • Inform better decision making about allocating the right places for the right quality of development; and • Identify infrastructure requirements (and what infrastructure is <i>not</i> needed) and plans to deliver this
<p>Prioritisation and funding</p>	<p>Identifying specific infrastructure priorities is a fundamental driver of effective delivery. The right infrastructure should support sustainable growth, contribute to legal carbon reduction targets, achieve environmental and economic progress more broadly, take account of rapid technological change, and prioritise good quality of life outcomes. In this way, prioritisation will provide practical steps towards delivering long-term public sector policy goals, and contribute to short-term development ambitions. This approach:</p> <ul style="list-style-type: none"> • Allows infrastructure strategies to be developed which align the vision for the area, the Local Plan process and future growth with service priorities and service delivery; • Enables projects that deliver economic value, through raising land values and releasing sites for development, and provides confidence to the private sector to invest; • Sets a co-ordinated, timetabled programme for infrastructure delivery, and aligns funding with sustainable development outcomes; and • Requires critical thinking and hard choices, but provides the basis for a clear structure for decision making and an adaptive delivery process which is responsive to societal, environmental and technological changes.

<p>Engagement and alignment</p>	<p>Effective and early engagement leads to more focused delivery with the right people at the right stage in the process. It should aim for a multi-agency delivery plan which:</p> <ul style="list-style-type: none"> • Establishes lines of communication and working arrangements with stakeholders, infrastructure providers and utility companies to promote proactive collaborative working with partners; • Cultivates trusted relationships which embrace sharing of data and information, break down preconceptions, avoids entrenched positions, and promotes collaborative working towards shared goals; • Explains objectives, programmes, and barriers, recognises the influence of relevant regulatory processes, and develops shared goals; and • Aligns the planning, investment and development cycles and processes of public and private sector bodies to avoid misalignment of critical infrastructure delivery and growth ambitions.
<p>Resources, capacity and skills</p>	<p>Infrastructure planning should:</p> <ul style="list-style-type: none"> • Be given higher priority and made more visible by moving infrastructure up the agenda to become an integral part of an Authorities corporate business; • Recognise that organisations are operating within a cash-limited, resource-poor environment, by pooling skills and resources across functional areas to maximise the effectiveness and impact on effective planning, funding and delivery; • Make best use of resources, that are under severe pressure, to share data, combine knowledge and skills and get most value for money. Develop a centre of excellence to promote research into, and dissemination of effective infrastructure planning and delivery tools and techniques, policies and strategies to accommodate future change, and case studies of effective engagement, vision setting and delivery planning; and • Fill the skills and experience gap that exists in infrastructure and strategic planning, reviewing university and apprenticeship content, development paths to professional qualification and continuing professional development to promote infrastructure planning as a valued skill.
<p>Demonstration and learning</p>	<p>With such a complex system for infrastructure planning currently, an essential component of practice is understanding what works well and why, and thinking about how this can be best replicated and shared</p>

2. Introducing the case studies

“Little attention has been given to how the institutional variations between cities, regions and countries can limit or facilitate the potential for various forms of infrastructure integration and evaluation remains in “separate and disconnected institutional entities” (Rogner 2009, quoted in McClean, 2017, 15)

A key component of this research was to undertake three contrasting case studies to understand the extent to which the key principles for infrastructure planning were manifested under different governance arrangements (as described in the table below). These were: **Staffordshire County Council**, the **Cambridgeshire and Peterborough Combined Authority** and **Glasgow City Council**. While the main focus of each case study was on the work of these three authorities, they needed to be understood in the context of their constituent partners and authorities (in the case of Staffordshire and Cambridgeshire and Peterborough), and wider sub-regional relationships (in the case of Glasgow).

Across the three case studies we:

- Reviewed key strategic and non-strategic documents including Strategic and Local Plans, Infrastructure Delivery Plans, Strategic Economic Plans, Devolution and/or City Deals, committee / board papers and minutes;
- Carried out thirty in-depth interviews with key stakeholders and informed by a common topic guide across the three case studies; and
- Collated information about the governance, funders, and providers of infrastructure to inform the graphical depictions in this report illustrating the complexity of players involved in infrastructure planning at different spatial scales.

Appendix 1 to this report provides detailed reports on each case study, interviewees and the research method.

Staffordshire County Council (SCC)

Governance: The government infrastructure of the County comprises Staffordshire County Council, the City of Stoke on Trent (a unitary authority administered separately from the rest of the county) plus eight local authorities (; Cannock Chase, East Staffordshire, Lichfield, Newcastle under Lyme, South Staffordshire, Staffordshire Moorlands, and Tamworth). The geography of the Stoke and Staffordshire Local Enterprise Partnership is coterminous with that of the County Council. Four Districts (Cannock Chase, East Staffordshire, Lichfield and Tamworth) are aligned with the Greater Birmingham and Solihull LEP and two (Cannock Chase and Tamworth) are non-constituent members of the West Midlands Combined Authority.

Spatial planning and infrastructure: As an upper tier authority, Staffordshire County Council provides key public services including education, highways, transport planning, passenger transport, social care, libraries, and waste disposal. It has no statutory strategic spatial planning powers but is currently preparing a Strategic Infrastructure Plan, the first of its type in the Midlands.

Key infrastructure challenges: Staffordshire faces infrastructure deficits in both an urban context – the Stoke on Trent conurbation (where there is a Joint Spatial Plan developed with Newcastle under Lyme but not the Combined Authority) – and in rural areas of the County, such as the Moorlands.

Cambridgeshire and Peterborough Combined Authority (CPCA)

Governance: Combined authorities are a new tier of governance in England and a core component of the selective devolution of funding and powers to local authorities. The CPCA's constituent partners include both upper and lower tier authorities. These are the upper tier authorities of Cambridgeshire County Council and Peterborough City Council, and the five district councils of Cambridge City, South Cambridgeshire, East Cambridgeshire, Fenland and Huntingdonshire. The CPCA's business board is the newly formed LEP.

Spatial planning and infrastructure: The Cambridgeshire and Peterborough devolution deal highlights the key infrastructure and planning roles of the CPCA including powers to invest (through devolved funding), transport powers, and policy responsibilities – including the preparation of a non-statutory spatial framework.

Key infrastructure challenges: The area has ambitious economic and housing growth ambitions and strong development pressures - with resultant demands for infrastructure investment. Power shortages and grid capacity, and water scarcity and flooding issues are particularly acute.

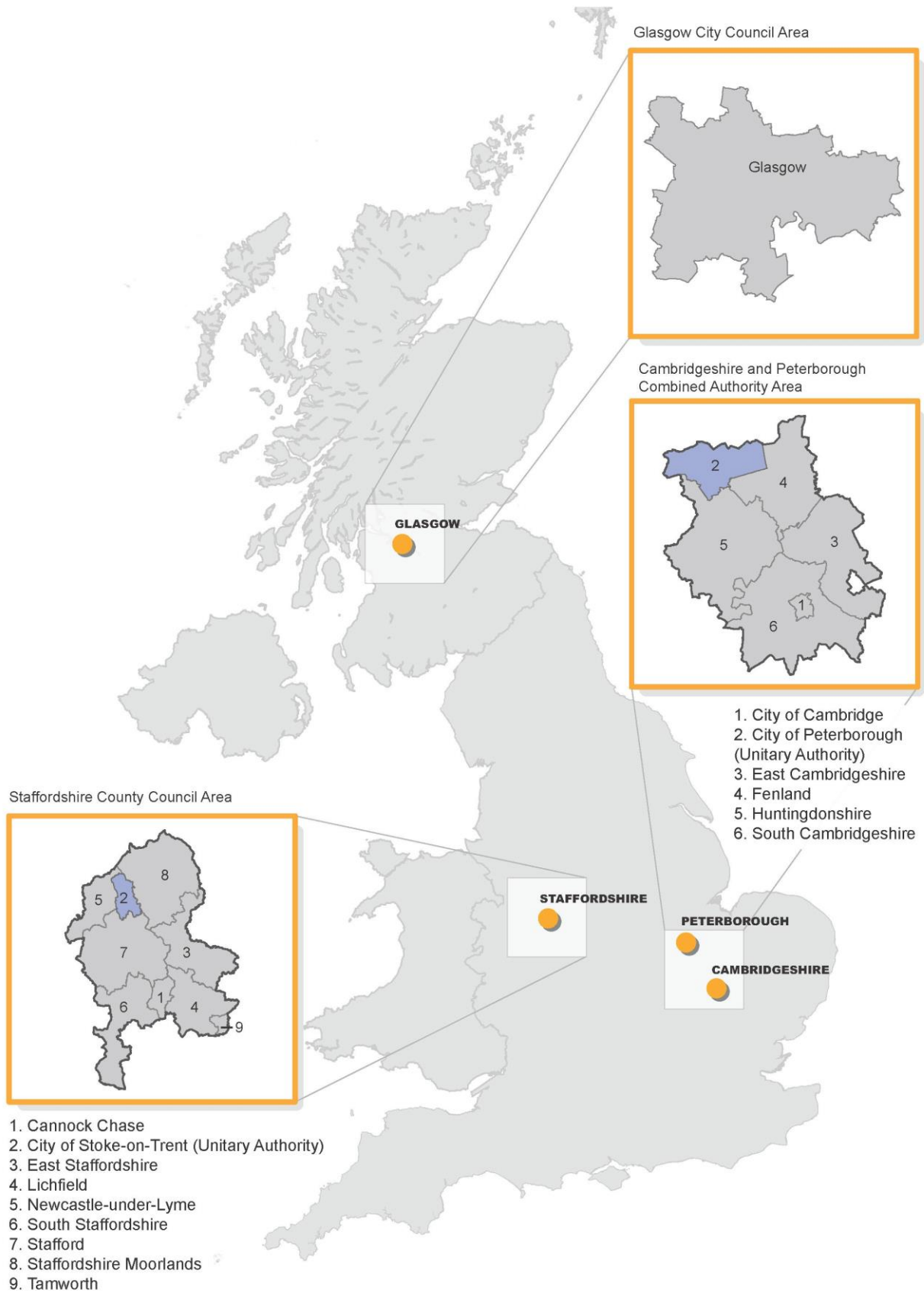
Glasgow City Council (GCC)

Governance: Scotland is a devolved nation in which it has the ability to set its own planning system and policy. Glasgow City Council – Scotland's largest authority - is a unitary authority, and a key player within the Glasgow City Region, which comprises the eight constituent authorities of: Glasgow City Council, North Lanarkshire, South Lanarkshire, West Dunbartonshire, East Dunbartonshire, Renfrewshire, East Renfrewshire and Inverclyde.

Spatial planning and infrastructure: Glasgow has responsibility for delivery across a broad range of public services and infrastructure provision is a key corporate priority. Glasgow City Council is responsible for the Local Development Plan, which sits under the ClydePlan Strategic Development Plan – a regional land use plan prepared by the Strategic Development Plan Authority made up of the eight authorities.

Key infrastructure challenges: Funding brought by the £1.13 bn Glasgow City Region City Deal signed in 2014 is intended to focus on enhancing transport infrastructure and unlocking new sites for housing and employment. Development viability and flood risk/drainage are key issues.

Case study locations



Contains public sector information licensed under the Open Government Licence v3.0.

3. Key case study findings

The graphic below shows the multi-level tiers of governance within which each of the case study locations are situated. This chapter presents findings about the governance context of each of the three case studies.

Governance arrangements in the three case studies



Staffordshire County Council: key findings

- The structures and processes for planning and funding infrastructure in the English Regions **remain highly complex**; stakeholders perceive themselves to be doing their utmost to make a flawed system functional effectively. The modus operandi is one of constructive collaboration, albeit one beset by tensions.
- Staffordshire County Council has sought to reimagine an approach to strategic planning at the level of the upper tier authority. **A new Strategic Infrastructure Plan**, produced by SCC and partners due for publication in Autumn 2019, follows the format of documents produced by Essex, Kent and Oxfordshire County Councils. It is the first of its type the Midlands.
- In the absence of a long-term financial settlement for local government, councils are obliged to **assemble ‘cocktails’ of funding** through short-term competitive bidding. These entail considerable investment of time and staff resource, set against considerable uncertainty of outcome.
- The prevailing national development model is **perceived to prioritise investment in a small number of Core Cities**. This neglects the problem of uneven development that ensues and underestimates the functional interdependencies that exist between the Core Cities and the surrounding County Councils.
- There are **complex and competing geographies of governance** that give rise to multiple networks of economic, social and political relationships. These are compounded by new institutions, the Local Enterprise Partnerships and Combined Authorities. There is, thus, no single functional geography of place but participants present a strong case for role in strategic spatial planning and leadership of place to be invested in upper tier authorities.
- It is **difficult to engage organisations in the statutory sector** (especially health and education) in a genuinely strategic dialogue on infrastructure planning. These bodies are characterised by a short-term, service delivery orientation, determined by their sponsor ministries, rather than a long-term preoccupation with place.
- The **rail industry is almost unanimously regarded as particularly complex and confusing**; the most difficult infrastructure (sub)sector with which to engage.
- There is a **limited evidence of exchange at a strategic level with private sector utilities** (electricity, gas, water). These actors are more often engaged at the delivery stage, on a site by site basis.
- The participation of **voluntary and community providers** in the green and blue, and social infrastructure sectors is often assured by their recognition of the potential benefits that may accrue to them through developer contributions.
- The policy instruments introduced in the past decade to **encourage strategic spatial planning** (such as the Duty to Cooperate, which is unenforceable) and/or to raise finance for infrastructure development (Community Infrastructure Levy; set too low, by necessity) are widely considered ineffective.

- In the context of austerity, there is some evidence of the ‘municipal enterprise’ / ‘commercialisation’ agenda informing infrastructure planning, e.g. active local authority role in development to generate (and maximise retention of) Council Tax / Business Rates, to minimise demand on council services, etc.

Cambridgeshire and Peterborough combined authority: key findings

- The Combined Authority has added a **new layer of governance** in the Cambridgeshire and Peterborough area and is the only in England to have both upper and lower tier constituent councils. There is a **strong legacy of collaboration between partners** and across local authority boundaries in Cambridgeshire and Peterborough, and there is evident willingness of partners to continue to build on that legacy under the new arrangements.
- There is **a little confusion** – particularly around transport – as to the respective organizational roles and responsibilities. This is partly viewed as the inevitable result of organisational set up, with clarity over roles and responsibilities expected to emerge over time.
- There is a strong appetite for the CPCA to add value by providing **a strategic vision** for infrastructure **linked to its investment decisions**. However, there is some uncertainty as to whether the CPCA sees itself (and is in turn seen by others) as predominantly a delivery or policy making body.
- The potential opportunity for the **integration of strategic planning and investment** provided by the Non-Statutory Spatial Framework has yet to be realised but there is both an appetite for, and optimism about, its potential to do so in the future. Planning policy, and a vision for infrastructure, are not yet seen by some stakeholders as the main drivers for CPCA project and investment decisions.
- There is clear consensus about the **key infrastructure challenges** facing the sub-region, particularly in respect of enabling infrastructure to support growth, address energy and water shortages, and tackle congestion and movement in and around Cambridge. The Cambridgeshire and Peterborough Independent Economic Review has been instrumental in creating **a strong evidence base**.
- **Engagement with infrastructure providers** is largely happening on an **ad hoc basis**, with some prior mechanisms for engagement with infrastructure providers having been recently receded. The potential for the CPCA to **enable a strategic dialogue with infrastructure providers** was seen as critical.
- The instruments to **raise finance for infrastructure** development at the local level (CIL where charged and S106) are widely considered ineffective and insufficient.
- A key challenge for infrastructure planning is perceived as both the **knowledge required**, and the **human capacity needed**, both within the planning community and by providers, to enable integration to happen more effectively.

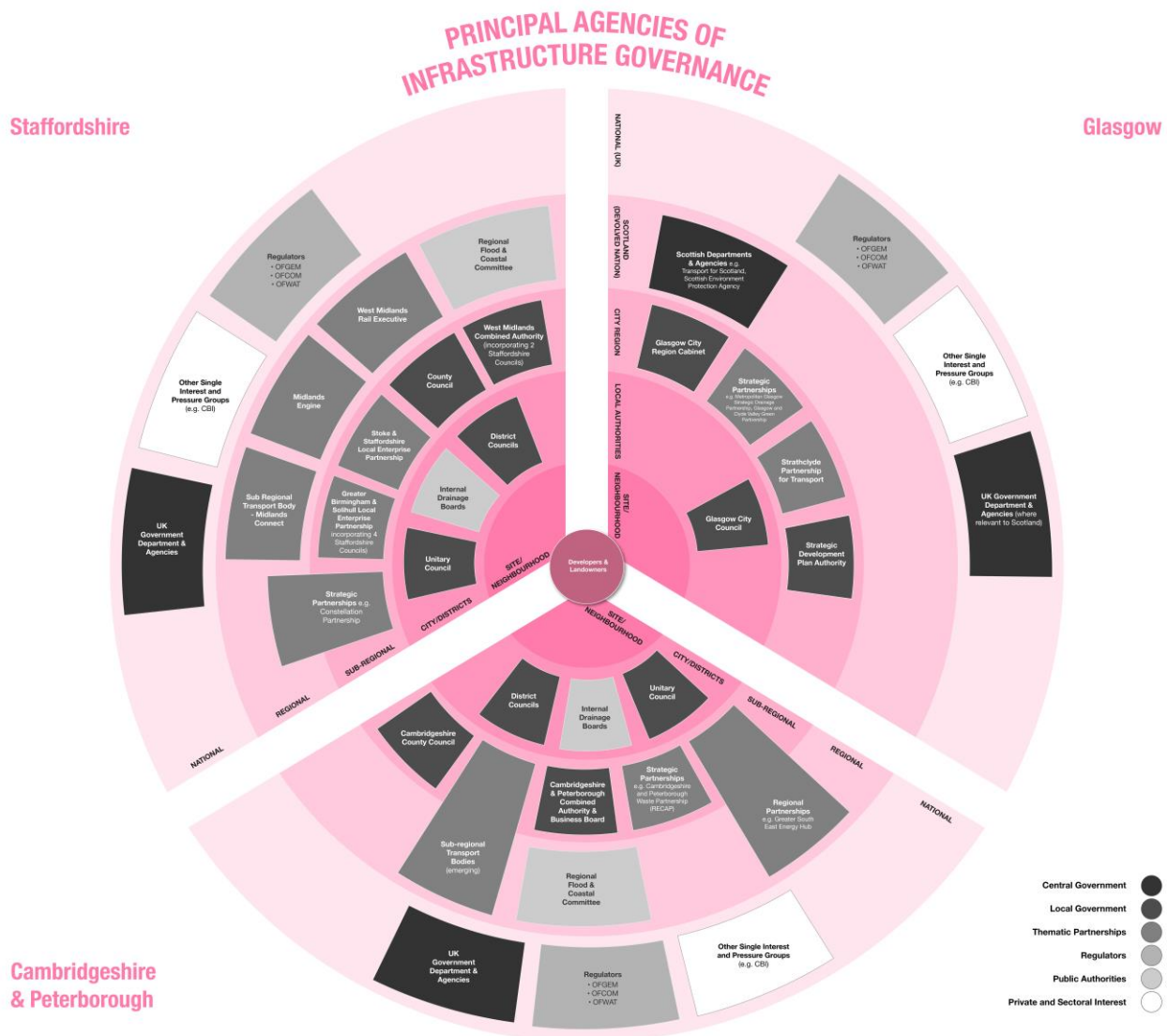
Glasgow City Council: key findings

- **Effective strategic planning** is particularly in evidence in the Glasgow City Region, and Clydeplan is particularly important in this respect for “*making connections between people*”.
- The **City Deal is the main driver for delivering infrastructure**. It is fundamental, as the money attached to its projects gives infrastructure providers the confidence that development will actually go ahead.
- **Transport planning** in Scotland is “**very complicated** [and] *difficult to explain to an audience of ‘outsiders’*” and “*there are lots of different strategies [and the] skill is knowing the direction each is going in*”.
- **Digital infrastructure provision involves a “very diverse field”** of players that encompasses providers, technology companies and investment groups.
- **Gaining funding for infrastructure through developer agreements (s.75) is a significant challenge** in Glasgow due to site remediation costs (as a consequence of industrial legacy) and low land values impacting on development viability.
- Glasgow appears effective at making the most out of funding sources through coordinating infrastructure providers to “**bend the spend**” by squeezing the most out of the finance available.
- There was clarity about the role each organisation plays in the delivery of infrastructure, and the roles of other ‘external’ delivery bodies; however **integration between sectors is still evolving** through a data sharing approach being undertaken between councils and infrastructure providers.
- **Post City Deal, local authorities will compete individually**, and also against each other, for scarce resources, as opposed to collectively being able to “demand” assistance from providers and other organisations.

Agencies of governance, providers and funders of infrastructure

The case studies primarily focused on the spatial planning and infrastructure roles of the local, combined and county councils. Their experiences are, however, fundamentally influenced by numerous agencies and bodies. The three images that follow provide a snapshot which illustrates the organisational complexity within and between tiers of governance on infrastructure.

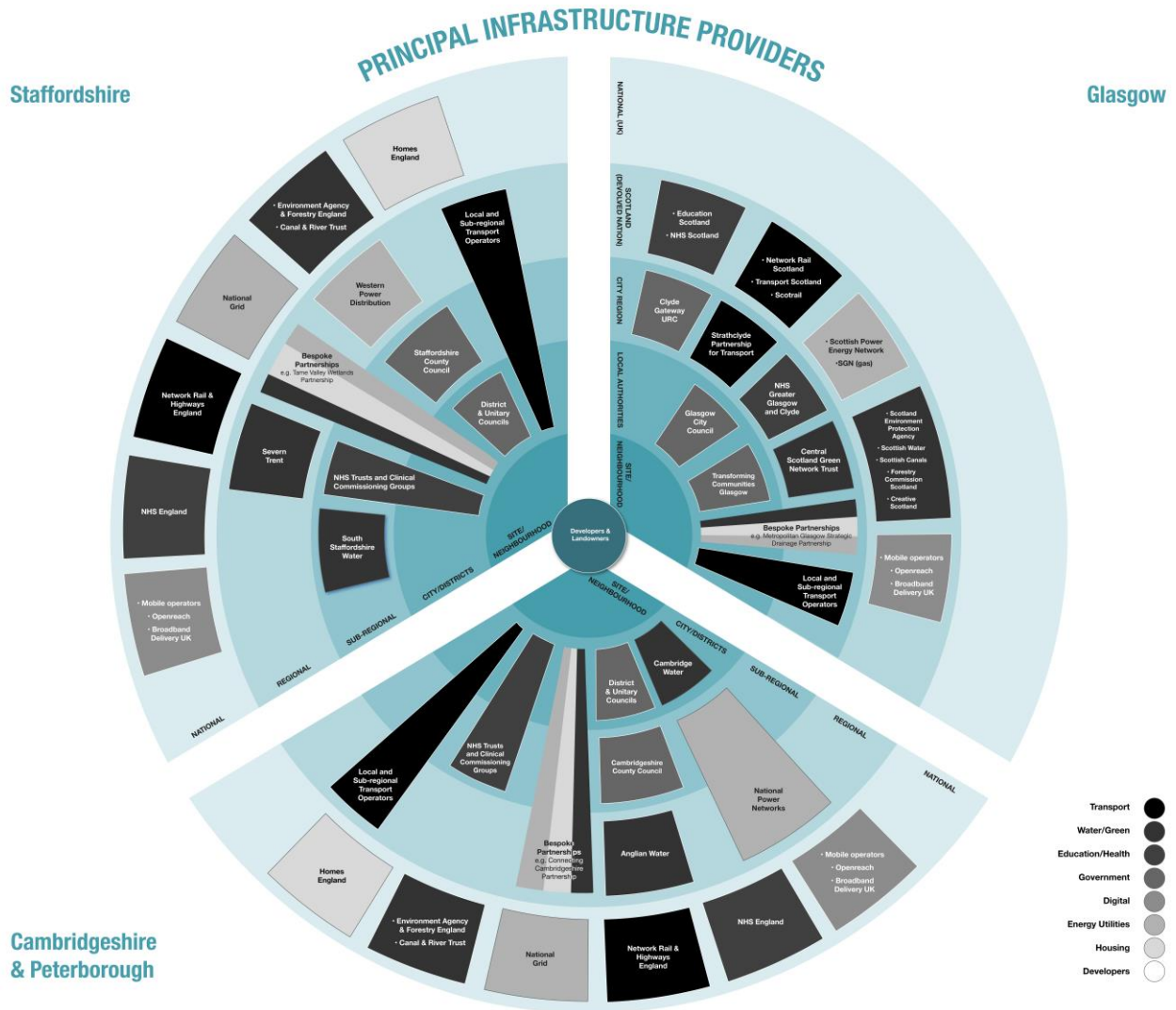
These images are intended to be illustrative of the landscape of infrastructure, not comprehensive of all players. The size of each organisation’s box is not intended to be indicative of significance in terms of power, influence or money.



[\[click on the image to view full size\]](#)

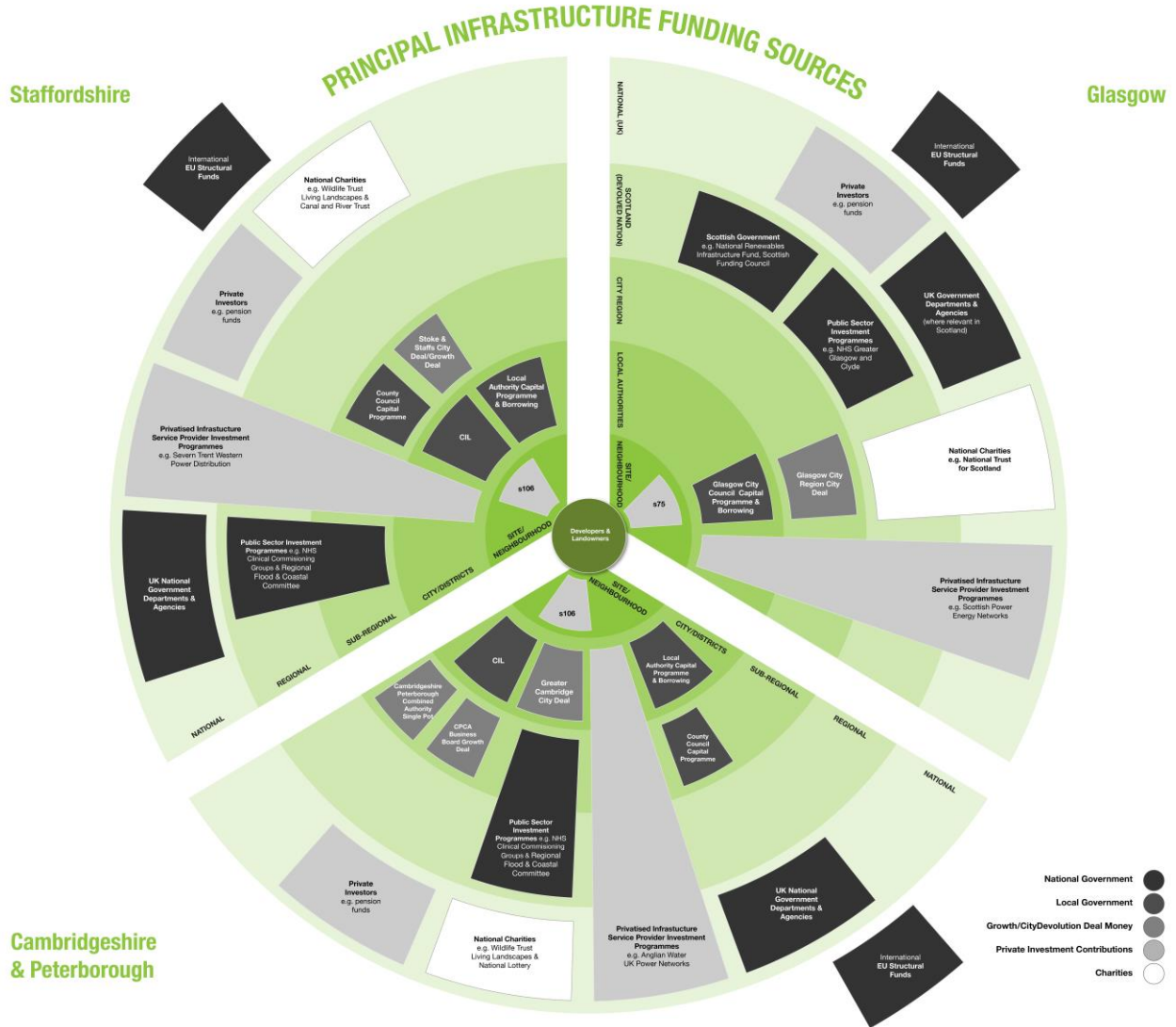
In relation to **governance**, the image above shows that decision making on infrastructure is spread across a wide variety of agencies and bodies, operating at a variety of different spatial scales. There are, as explained on pages 19 - 20, distinct differences between them.

In the Scottish case study, there is a focus at the city-region level, and decisions on infrastructure are affected by both the Scottish Government and its agencies, and the UK Government (and regulators in particular). In the Staffordshire example, responsibility for strategic leadership is vested in the County Council. There is no combined authority, but three Staffordshire district councils are non-constituent members of the West Midlands Combined Authority centred on Birmingham. Cambridgeshire and Peterborough is the only combined authority in England to cover a geography which comprises both upper tier and lower tier constituent local authorities. In England, there are new and emerging regional bodies such as Midlands Connect that provide a crucial strategic interface between local authorities and central government.



[\[click on the image to view full size\]](#)

In relation to **providers**, the image above depicts the range of providers across both the public and private sector whose operational geographies differ considerably from both strategic and local planning policy frameworks. This is particularly illustrated by the utilities companies. Notable across all the case studies is the significance of national governmental bodies, such as statutory providers, in the provision of infrastructure.



[\[click on the image to view full size\]](#)

In relation to **funders**, the volume and range of private sector funders is striking. Deals, of varying types, are also in existence across the three case studies: Glasgow - the Glasgow City Region City Deal; Staffordshire - the Stoke and Staffs City Deal; and in Cambridgeshire the Cambridgeshire and Peterborough Devolution deal, and also the Greater Cambridge City Deal (affecting part of the geographical area).

4. Core findings

Principle 1: Place, vision and objectives

“The government does not like strategic planning any more ... they just want to sweat the assets ... so, you get this ‘bolt on’ type of approach which is unsustainable ... places get slower and slower ... people change their behaviour patterns ... it simply displaces what people do.” (Case study interviewee)

“The world is changing. The idea that Councils do things only on their own patch is gone. Our job is very much about system leadership.” (Case study interviewee)

“Devolution in this region has created further complexity and added a further layer of bureaucracy.” (Survey respondent, Metropolitan District)

“There are now so many layers and partners. It’s very difficult not to trip up...” “[there is a] mixed bag of plans - there are too many layers and far too many plans that are not consistent...” (Case study interviewee)

“I don’t think, in all honesty, that anyone understands the relationship between the LEP and the combined authority in those areas ... Nobody actually thought about this beforehand ... there is a need to tidy up geographies as much as possible” (Case study interview)

Core findings

Local planning authorities recognise the importance of a vision anchored in place and the importance of infrastructure and planning to achieve this vision. However, there is limited evidence of the sought after synergies in practice. The fieldwork revealed a strong consensus in favour of an approach to integration based on *“planning according to place and not the needs of individual sectors in isolation”* (Arts et al, 2016). Indeed, in the survey of local planning authorities, nearly half (45%) the respondents strongly agreed that their *authority has clear strategic goals, and that planning is important to achieving the authority’s goals* (47.3%). In practice, however, evidence of true place-led approaches proved elusive. The default position was one characterised by sector by sector working marked by tensions (often creative) between tiers of local government, between local authorities and central government, and between local authorities and infrastructure providers. The reasons for these divisions are systemic and discussed in detail below.

Integrated infrastructure planning is hindered by complex multi-level governance arrangements. The governance of infrastructure planning is extremely complex, with multiple organisations (local authorities, central government agencies, private utilities and regulators, etc.) distributed between and within geographical scales. There is a widespread sense among respondents that recently established and emerging organisations (Local Enterprise Partnerships and, latterly, combined authorities) have often merely compounded the complexity they are tasked to resolve. This may be an ephemeral problem, one of *“natural disruption”* caused by *“unsurprising teething problems between partners”*, that will resolve once the *“journey”* of embedding new agencies into the institutional landscape is complete. This was, for example, the case in

Cambridgeshire and Peterborough where respondents expressed a degree of confusion in respect of institutional roles and relationships in transport planning. It may prove a more permanent challenge, however, where there exist overlapping mandates and jurisdictions. In Staffordshire, for example, the alignment of some district councils with the West Midlands Combined Authority had generated some political tension. In Cambridgeshire and Peterborough, a *de facto* “four tier local government” system was observed.

However, there exists plentiful evidence of constructive dialogue between planning authorities, to establish a clear division of labour between strategic and local planning.

There is much evidence of collaborative working between local authorities to fashion positive outcomes from what many respondents, including providers, regard as a flawed system. In Cambridgeshire and Peterborough, for example, respondents noted the long-established and resilient culture of joint working and there was a broad expectation that the value added by the Combined Authority would eventually be realised in its contribution to strategic planning, with local authorities reaffirming their service delivery role. In Staffordshire, a pragmatic division of labour between the County Council and the constituent districts had been established: “*local planning authorities have a key role in the design of place ... they are far better at ‘granular’ planning ... we’re better at ‘big picture’ economic development...*” In the Glasgow City Region there was a clearly articulated view that local authorities work well together, while recognising the central role that Glasgow plays in driving the wider economy.

Local authorities work according to multiple and over-lapping boundaries: there is no single definition of ‘functional’ place. A place based approach to infrastructure planning presupposes the existence of an agreed ‘functional area’ to be planned. In reality, local planning authorities work within a complex network of economic, social and environmental linkages that often extend beyond the territory for which they have statutory responsibility. The boundary of any “functional” area is contingent upon the economic, social or environmental relationship that is the focus of planning; travel to work area, housing market, river catchment, etc. Local authorities therefore operate according to diversified and coinciding constructions of place. They must be aware of possibilities and limits beyond and within their nominal boundaries, and build plans and working relationships accordingly.

The example of Staffordshire illustrates this well. The County defines itself, partly, in terms of its central location within the UK and the opportunities this presents, enhanced by HS2 and working relationships with neighbouring Cheshire. It is also mindful of its proximity to the conurbations of Birmingham and Manchester and the set of functional relationships that this implies. These are expressed in competitive ways (e.g. the increasing concentration of power and resources in the two combined authorities) and complimentary ways (e.g. joint working to meet housing need).

The demise of strategic planning in the past decade has been partially offset by recent renewed collaborative working between local planning authorities on ‘larger than local’ issues. The policy and practice of larger-than-local planning was identified as a ‘*core enabler*’ of integrated infrastructure planning. However, participants noted, and bemoaned, the demise of government sponsored strategic planning, especially in England, over the past two decades, namely the abolition of County Structure Plans in 2004 and the revocation of Regional Spatial Strategies in 2010. They were also sceptical of the potential of the ‘toolkit’ of localism to fill the strategic void. The Duty to Cooperate, for example, simply enhanced good working relationships where they existed but otherwise was unenforceable and offered few “*strong levers to pull*”.

However, as noted above, there is abundant evidence of local initiative seeking to make a flawed system function (more) effectively. A partial reconstruction of strategic spatial planning at the sub-regional level, emerging through necessity rather than (central government) design, can be observed. In Cambridgeshire and Peterborough, for example, much political capital is invested in the Non-Statutory Spatial Framework as a foundation for planning at the ‘larger than local’ scale. In Staffordshire, the County Council, following the example of Kent and Oxfordshire, has been preparing, for publication in summer 2019, a Strategic Infrastructure Plan for the County.

The Scottish experience stood in stark contrast. Respondents in Glasgow argued positively that the legacy of collaboration at city region level, and the statutory city-region document Clydeplan “helps align agencies’ spending, provides the context for prioritization and a very strong strategic context for local strategies to come forward”. This is confirmed by Scottish Water who cite a number of good practice examples of partnership working across metropolitan Glasgow for drainage and even wider areas for integrated catchment projects. The positive narrative found in Glasgow is not necessarily reflected throughout Scotland.

Case study snapshots

Staffordshire	Cambridgeshire and Peterborough	Glasgow
<p>The Staffordshire case study illustrates the important, and often unacknowledged, role of the upper tier authority (where such organisations exist) as a leader of place. It has sought to refashion a form of strategic spatial planning, in the absence of a guiding national framework, by convening a strategic dialogue of infrastructure provision in the County through the formulation of a strategic infrastructure plan. This is the first of its kind in the Midlands.</p>	<p>The Cambridgeshire and Peterborough case study provides an insight into the complexity of the landscape of governance of infrastructure planning in England. It is unique in respect of the co-existence of both a combined authority and a long-established County Council. There is also a unitary urban authority (Peterborough), multiple rural districts and a proliferation of thematic partnerships. In this context, it is unsurprising that the establishment of the Combined Authority has encountered some ‘teething problems’ (most of which respondents consider to be surmountable).</p>	<p>The Glasgow case study is conspicuous, certainly compared to the English cases, for the efficiency and effectiveness of strategic spatial planning at the city-region level and the clarity of the roles and relationships that underpin this activity. There are long established working relationships in the Glasgow area, and these are consolidated by the recently established Glasgow City Region Cabinet and the statutory Clydeplan framework.</p>

Principle 2: Prioritisation and funding

“Infrastructure costs and accountability are associated with the upper tier authority ... the local plan can identify need without any accountability ... that’s a gap in terms of what joint planning for infrastructure should look like ... that needs to be done strategically as it crosses boundaries.” (Case study interviewee)

“The lack of planning to work out local government finance is really harming things ... it makes it difficult for us as a local authority to make decisions from one year to the next.” (Case study interviewee)

“Planning for the UK at the expense of the counties is a mistake. The economic impact of the counties cannot be overestimated, neither can what they do to help deliver housing. We play a major role in supporting the UK economy, we’re not just a place people drive through ... it is a policy gap not to address the system as a whole; the cities and the counties develop hand in hand.” (Case study interviewee)

“There is a misplaced view in Government that we want a deal rather than a dialogue on leading change.” (Case study interviewee)

“Heseltine promised a ‘single pot’ of money ... but we’re more fragmented than ever ... The premise was ‘look at all these different departments with different programmes ... we’ll put them into one pot and the LEP and its partners will have priority in spending that money ... in fact, it’s the worst it’s ever been in chasing that money down, the single pot ... even if you dress it up and call it devolution ... just never happened.” (Case study interviewee)

“ [We want] longer term funding programmes from Central Government rather than ad hoc bidding pots.” (Survey respondent, County Council)

“Processes like the Housing Infrastructure Fund are too onerous and require for too much resource with a lack of certainty over delivery.” (Survey respondent, District Council).

“We wanted to create places that work, with higher levels of employment, better paid jobs, people healthier and happier ... in less need of our services ... we have an ever increasing number of young and elderly needing care ... we need people with money in their pocket ... if we build 1,000 homes, we bring in £1 million of Council Tax.” (Case study interviewee)

Core findings

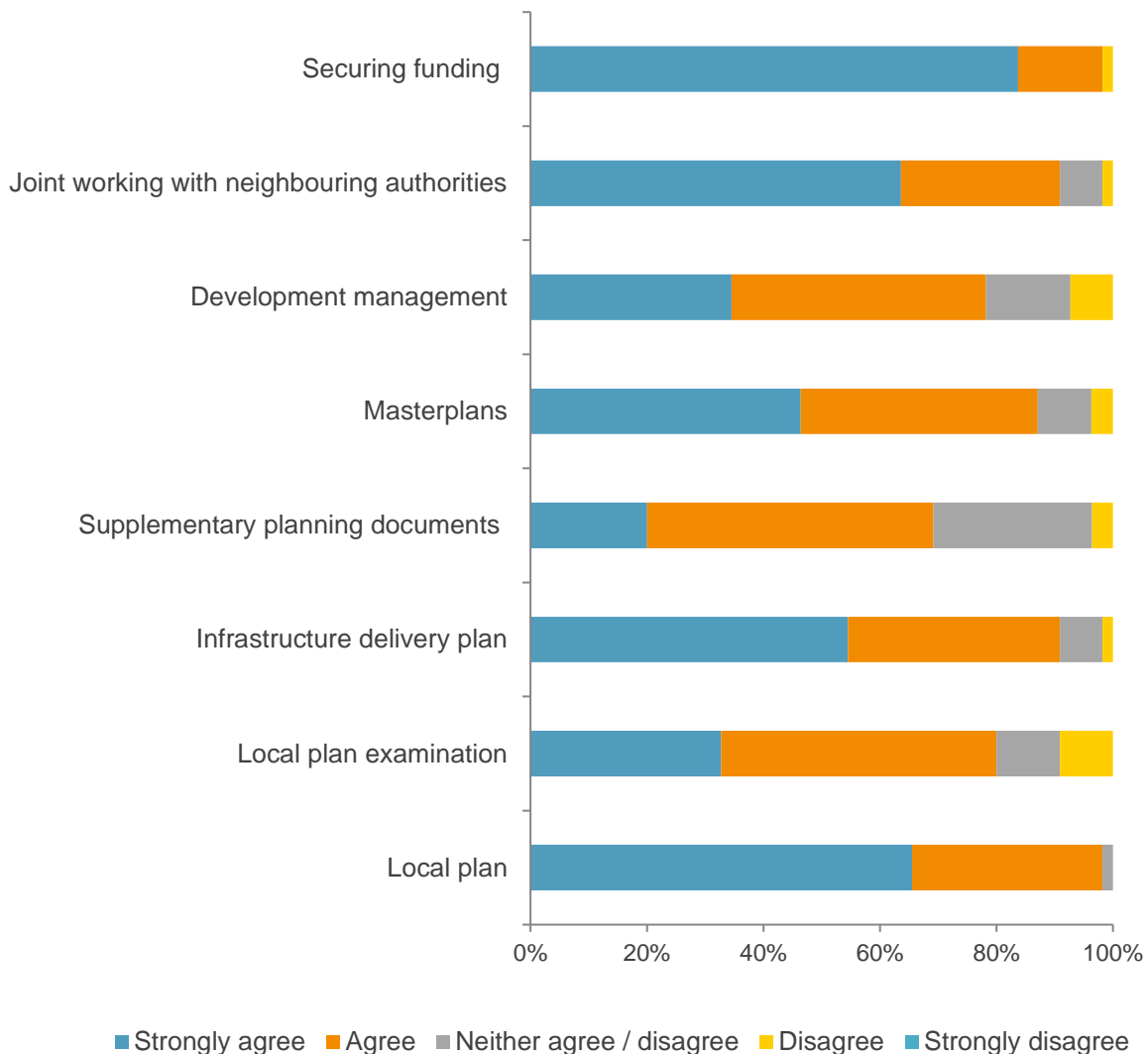
Local planning authorities are not confident that they have identified infrastructure needs and priorities clearly. As noted above, the fieldwork revealed that most local authorities supported, in principle, the idea of a place led approach to infrastructure planning. In practice, however, there was little evidence that local infrastructure requirements were determined and articulated satisfactorily. Indeed, the survey found that only one quarter (27%) of local planning authorities strongly agreed that *their authority had clearly identified infrastructure needs and priorities*. The notion of a place base vision proved elusive. The Local Plan was identified by a clear majority of the survey respondents (i.e. 65.5% strongly agree) as *the most important tool for infrastructure planning* (see Figure 1 below). However, its limitations as a vehicle for strategic spatial planning were widely noted; *“the local plan process for identifying what’s needed is not an*

adequate process for infrastructure planning for growth” (case study interviewee).

The disadvantages of other local planning procedures were also highlighted. For example, infrastructure delivery plans (IDPs), cited as *important tools of infrastructure planning* by a majority of survey respondents, were also criticised as process rather than outcome led; they are “*never about delivery, just part of a statutory planning process to get your local plan over the line ... it just gets done and put on the shelf*”, and rarely aligned with council investment programmes. These documents were frequently characterised as a wish list, “*everything goes in ... it’s easy to put things in*”, although Staffordshire County Council emphasised the important ‘managing expectations’ role of the strategic authority and that district aspirations should be affordable, i.e. “*funded by the development itself*”. However, some providers regard IDPs as important means for local planning authorities to communicate information of future growth.

The local plan examination, which was cited as an important mechanism for verifying infrastructure needs and deliverability by a third of survey respondents, was regarded as too limited in focus - often reducing discussion of infrastructure to infrastructure to mitigation, and therefore to be resolved through development management, and sensitive to questions of viability.

Figure 1: Are the following mechanisms important for infrastructure planning? (% of survey respondents by level of agreement)



Infrastructure funding is an uneven playing field. There is an asymmetrical approach to infrastructure funding, and economic development more generally, in which certain areas of the UK (notably the Core Cities) benefit from the existence of a mayoral combined authority (in England) or city region body (in Scotland) that possess significant new powers and resources set out in a bespoke 'Deal'. These powers and resources do not apply elsewhere – the “*vast, forgotten hinterlands*” – the importance of which to the national economy or, indeed, the functional relationships between the Core Cities and their surrounding areas, is afforded less a priority.

The negotiation of such deals between central government and local authorities were cited by Glasgow City Council as a “*game changer*” for infrastructure planning. The advantages of such arrangements are: 1) the greater autonomy and flexibility offered by a ‘single pot’ of investment funds; 2) the certainty that projects included within the deal will be delivered; 3) the capacity to bring other stakeholders ‘to the table’ that this certainty implies. That said, respondents cited a number of challenges: 1) that infrastructure planning had, by necessity, prioritised delivering projects within the deal over the formulation of a long term, strategic vision, in both Glasgow and Cambridgeshire and Peterborough; 2) that deal were, by their very nature, temporary and posed the question ‘what happens next’. Respondents in Glasgow expressed concern that local authorities would have to revert to competing for a share of government infrastructure investment (see below).

In the absence of a satisfactory long term financial settlement for local government, councils are required to put together a ‘cocktail’ of funding to realise their infrastructure priorities. It is not surprising that the issue of financial resources was uppermost in the minds of many respondents. Indeed, Figure 1 highlights the high level of priority given to securing funding by survey respondents. The absolute lack of resource per se obviously animated local stakeholders, but the complex and burdensome manner in which resources are currently distributed by central government was equally contentious. Fundamentally, local stakeholders bemoaned the lack of autonomy of councils to raise and spend revenue locally according to local priorities, a situation which is the norm in the majority of European countries. The centralisation of local government finance in the UK requires councils to assemble packages of funding in a piecemeal, short term fashion. Figure 2 (below) shows the main sources of infrastructure funding identified by survey respondents which may not, of course, reflect the absolute picture in each locality when taking into account private and other forms of investment.

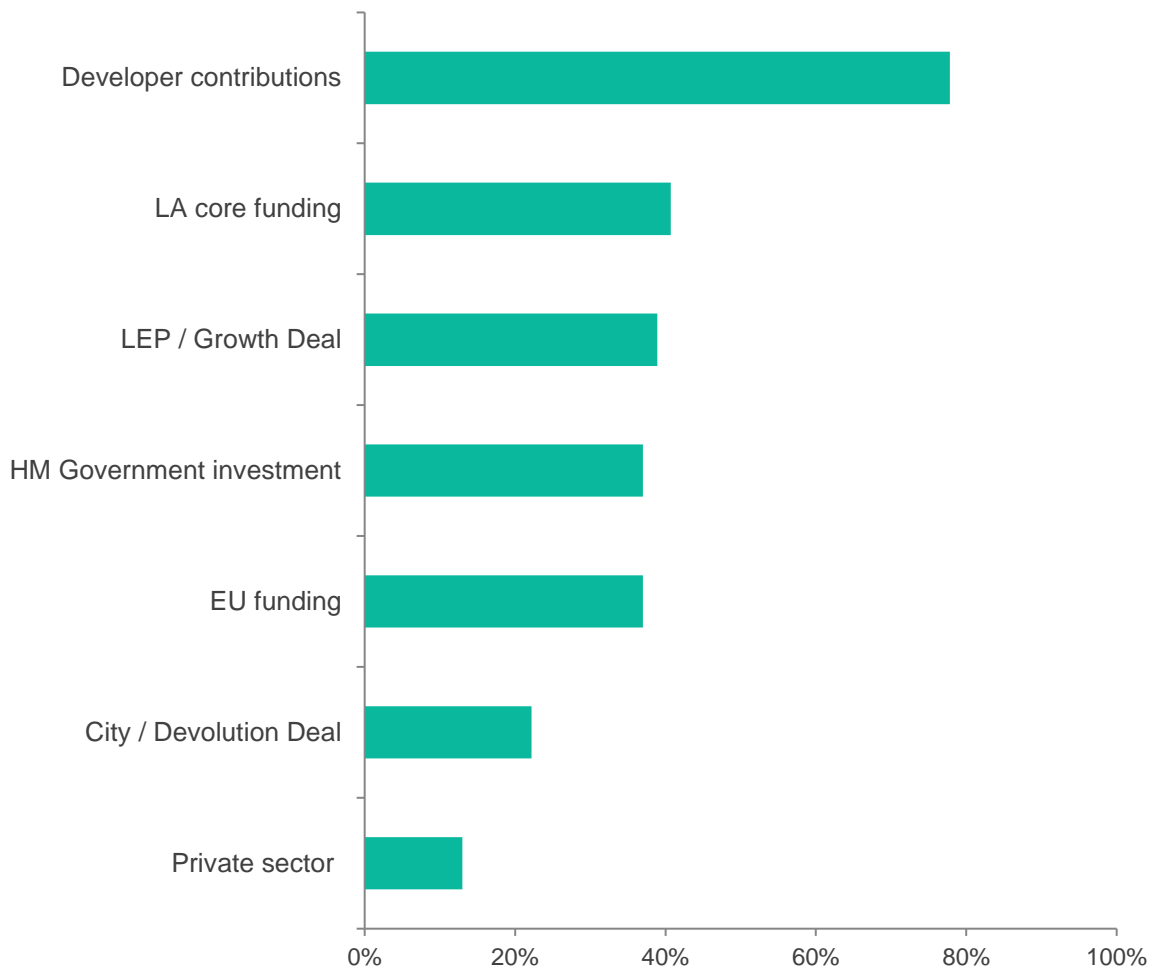
Too much infrastructure funding is allocated via competitive bidding which incurs opportunity costs and encourages a ‘wish list’ or ‘quick win’ approach. A significant proportion of central government infrastructure investment is allocated through a process of competitive bidding. These represent a significant investment of finance and staff resource for local authorities. The deadlines for bidding are typically very short. Decisions are, according to respondents, taken according to national, rather than local, criteria. In short, given the lack of certainty of a positive outcome, competitive bidding does not permit local authorities “*the confidence to invest money in building a business case*”.

Local planning authorities are unduly reliant on developer contributions to fund local infrastructure. In terms of funding local as opposed to ‘big ticket’ items, local authorities fund most investment through developer contributions. This is a highly problematic process. Areas that are characterised by high land values and low remediation costs, especially in southern England, are particular advantaged. Elsewhere, there are challenges in areas of weak market demand to break

out of the vicious cycle of infrastructure deficit. Developer contributions are hostage to viability; S106 (and S75 in Scotland) are essentially not useable in many contexts. In Glasgow, talk of developer contributions are seen as a “red herring” due to high site remediation costs combined with low land values. The Community Infrastructure Levy (CIL) fails to deliver as much yield as anticipated. In Cambridgeshire and Peterborough, CIL is not yet levied by all districts. In Staffordshire, CIL is charged at a sub-optimal level to avoid problems of viability. The reliance on developers and the lack of coordination between them in delivering energy infrastructure is also a significant problem which is not cost effective and leads to ad-hoc provision and delays.

Austerity has encouraged local planning authorities to adopt a more entrepreneurial approach to infrastructure investment. The regime of austerity suggests an absolute lack of resources for infrastructure investment which is reflected in our findings. Beyond this, a tendency was observed for local planning authorities to prioritise schemes that are affordable or provide an opportunity for generating and retaining Council Tax and Business Rates locally. Staffordshire Council, for example, introduced housing as a strategic priority; partly as an opportunity to generate income and partly to promote health, prosperity and well-being in order to manage (and reduce) demand for council services.

Figure 2: Principle sources of infrastructure funding (% of survey respondents, multiple responses possible)



Case study snapshots

Staffordshire	Cambridgeshire and Peterborough	Glasgow
<p>The Staffordshire study highlights the challenges of securing infrastructure funding in the absence of a bespoke 'deal' with central government. This suggests a reliance on competing for share of government investment through bidding and funding infrastructure expenditure through developer contributions. These options are all defined by their resource intensive process and inherent uncertainty of outcome.</p>	<p>The Cambridgeshire and Peterborough case study foregrounds the multiple narratives of project prioritisation. The understandable preoccupation with demonstrating early impact on the part of the CPCA favoured an approach built on 'quick wins'. This was supplemented by 'twin tracking', a strategy of simultaneously focusing on delivery of the Devolution Deal while encouraging partners to come forward with funding proposals. Finally, and perhaps most crucially, was 'acceleration', that is funding those projects that best represented 'additionality'.</p>	<p>The Glasgow case study provides a succinct summary of the advantages and disadvantages of the current 'deal making' approach to funding public sector investment. The majority of local stakeholders were very positive about the City Deal, highlighting the autonomy and certainty of delivery that (within the pre-agreed funding 'envelope') the deal permits. There were, conversely, concerns expressed about the time limited nature of the deal, and the manner in which the deal limits the scope of subsequent dialogue to delivery.</p>

Principle 3: Engagement and alignment

“We know we can’t do anything without providers, we have to focus on joining up, we have to operate collaboratively and in partnership.” (Case study Interviewee)

“It’s a complex 4D chess game.” (Case study interviewee)

“There is no coherent place for utilities to come together. Where this is a gap is that even the geography of local government doesn’t reflect the geography of utility providers – and for the utility sector there is no coherent framework or body for bringing that together.” (Case study interviewee)

“It is very difficult to get hold of the correct people at an organisation, or the role for liaising with local authorities does not exist.” (Survey respondent, District Council)

“Engagement happens too late ... far too far down the line to make a meaningful contribution to their ability to forward plan.” (Energy provider)

“There are numerous different water providers and different approaches by stakeholders, and there is a need to start working closer together.” (Water provider)

“There needs to be more formalised working arrangements to consider development options at an early stage of preparing a Local Plan so that a preferred strategy is identified which integrates the location, scale and type of development with the infrastructure needed to support it in a way that can be funded and delivered effectively.” (Survey respondent, District Council)

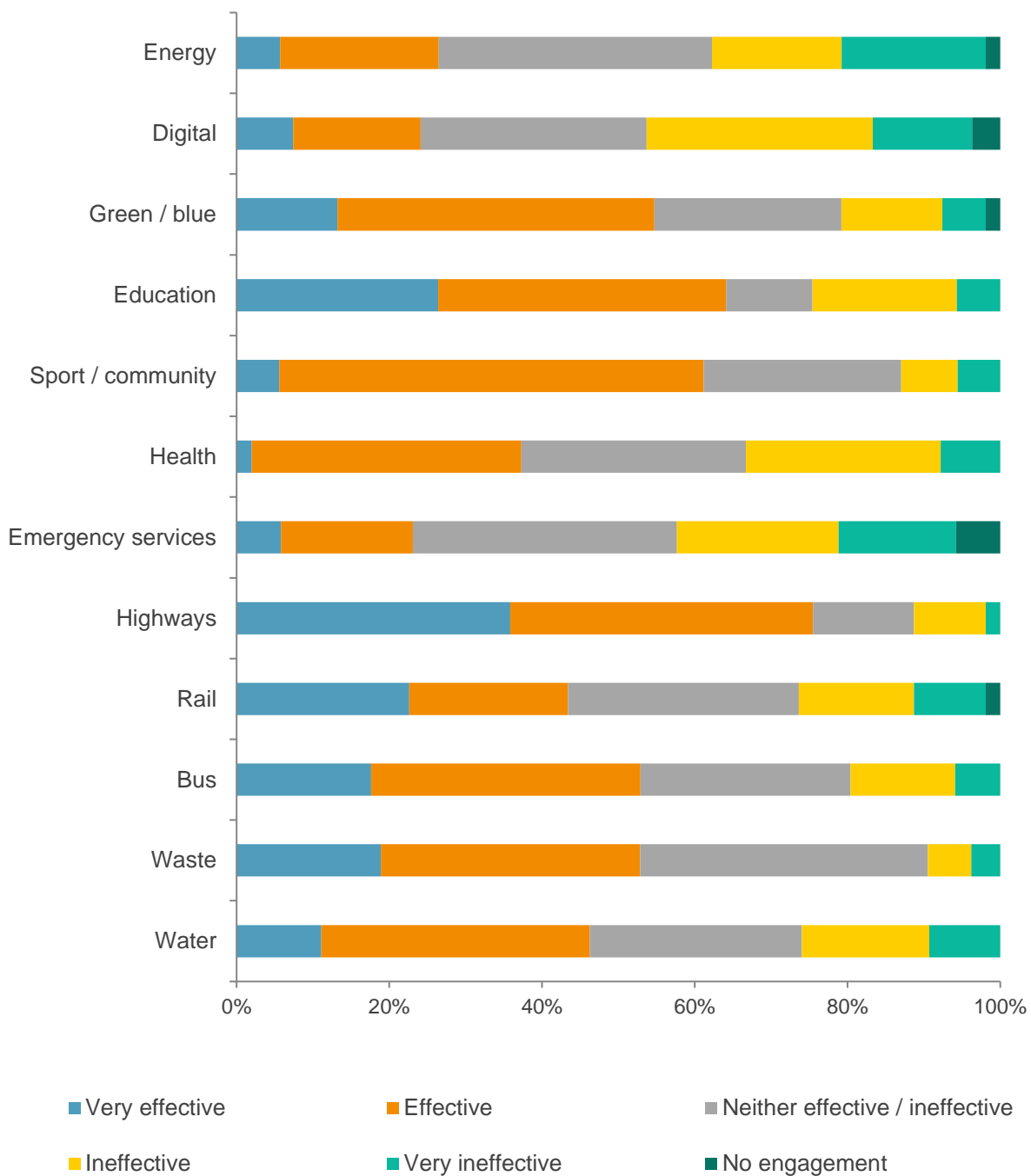
Core findings

Local authorities are reliant on 3rd parties to deliver but engagement is fragmented. With planning and planners having *“relative little power to actually deliver projects ...”* (Case study interviewee) effective engagement to align plan objectives with those of infrastructure providers was accepted as critical to having any chance of delivering a shared vision. However, it was clear that there are few uniform approaches to local authority engagement with infrastructure providers. At a broad level, engagement with infrastructure providers is variously described as *“ad-hoc”*, *“fragmented”* and *“largely reactive rather than proactive”*. There was very little evidence, either in the English case studies or in the national survey, of regularly scheduled meetings with providers or facilitated infrastructure planning forums (or similar) bringing providers together on planning. The exception was the Glasgow case study, where governance on the City Deal programme had enabled the establishment of an Assets and Infrastructure Portfolio. This aligned city region project investment with infrastructure utility providers through an Assets and Infrastructure Pilot Group.

Providers rarely have contiguous geographical boundaries to those used for local planning purposes, or funding cycles that align to local authority plans. This is true at both the local and strategic level, was an evident frustration across all three case studies and amongst survey respondents. Providers also noted this disconnect in relation to the transport sector highlighting, for example, that in Glasgow, the Strathclyde Partnership for Transport covers twelve authorities, but the City Deal and its associated funding packages only eight. A transport provider asserted that strategic organisations should take charge of brokering relationships: *“single regular meetings with all the Staffordshire local authorities to agree regional/cross boundary issues would help”*.

Sector experiences are extremely varied. The extent of local authority engagement with infrastructure providers, and how ‘effective’ that engagement is perceived to be, varies by sector (as illustrated in Figure 3 below), by place and within organisations. In one case study, the Environment Agency was, for example, described as “*good to engage with on flood management, less so on water supply issues.*” Relationships were seen as an important part of successful engagement: “*That there is someone really forward looking in Anglian Water*” was highlighted as significant in helping engagement between the water industry and some constituent local authorities.

Figure 3: Effectiveness of engagement by infrastructure sector (% of survey respondents)



Interviewees tended to instinctively focus on **the challenges associated with statutory providers** (even those within their own organisations) rather than utilities, seeing the latter as something distinct and separate, and with an accepted modus operandi focussed on engagement at site level. Education, and even more so health, were identified in two of the three case studies as being particularly difficult to engage with. This was largely attributed to departmentalism in some parts of Whitehall, a culture of constant change, and a short-term service delivery ethic, rather than a focus on longer term needs (and perceived as exacerbated by austerity). Within the case studies, Highways England was highlighted as having been recently tasked by its parent department to engage proactively at a local level, resulting in an organisation “*now relatively easy to engage in*”, with substantially improved relationships. Highways England itself described engagement on planning at all stages to be “*exceptionally important*” and reported engaging at a strategic and planning application level.

Long term issues of place are absent from the regulatory framework. Despite some progress on and mechanisms for engagement in Glasgow, the regulated utilities were observed in all case studies as challenging to engage with: “*finding a way in is hard – they are big opaque organisations that we don’t really understand*” (case study interviewee). This was similarly observed by survey respondents: “*they are large remote organisations that are inflexible*”. Challenges were repeatedly expressed about the short-term pricing control periods of the energy sector and the inability of the utilities to develop longer term proposals at a cost to current customers. In particular, the regulation of utilities was widely considered to be contrary to the objectives of integrated infrastructure planning: “*The time horizons for investment are shareholder driven. Are these bodies required to be far sighted? There is no obligation to engage proactively*” and “*They do not actively engage in discussions, rather seeing themselves as a commercial operation as opposed to playing a role in economic growth*” (survey respondent). They have little incentive to become involved in strategic dialogue, and these restrictions were acknowledged by providers themselves, reporting that “*they must receive a connection request before they will proactively invest*” (energy provider). Speculative investment is challenging; “*OFGEM won’t allow it*” (energy provider) as the cost of investment will impact the bill payer.

Short termism prevents engagement from happening at the right stage. The perception of a lack of long term and strategic thinking on the part of infrastructure providers was commonly observed as a barrier. While survey respondents observed that the preparation of local plans and infrastructure plans was critical to infrastructure planning, in contrast, it was observed that most of their engagement with providers largely took place at development management stage: “*engagement is late in the day*”, “*providers are not engaged at the most effective time, and only engage when site specific infrastructure requirements are set*”, “*it is difficult to get relevant stakeholders to engage at the strategic stage*”, and if strategic discussions do occur, “*they are often top level, abstract and non-committal*” (survey respondent).

This was largely corroborated by providers themselves, with Highways England noting the limitations of the five-year funding rounds and suggesting there “*is an argument that they should cover longer period*”. Western Power Distribution similarly acknowledged that while their funding timescales were too short for strategic planning, for significant developments which require 132kV infrastructure and/or new primary substation sites, they need know about them as early as possible, because there are considerable lead in times and resources required: “*The essential thing is to have some certainty about timescales of growth because they can’t forward fund, so need certainty in short and medium and also as much into long term as possible*”. Scottish Water

report that the number and complexity of providers involved in the process “drives planning for solutions for tactical issues and not long-term planning for all infrastructure”.

Drivers of positive engagement

Despite the evident challenges, there were examples of effective engagement both within the case studies and in the survey. There were five common themes:

1. That positive engagement often coalesces around particular projects or programmes: “engagement was positive and proactive where the money was in place” (survey respondent]. The certainty provided by City Deal funding was repeatedly evidenced as facilitating positive engagement in Glasgow and more recently under the devolution deal for Cambridgeshire and Peterborough.
2. A history of collaboration: in Cambridgeshire and Peterborough, the long-standing history of cross-sector working was considered as important for enabling pre-existing relationships to be carried forward under the new arrangements of the Combined Authority. This was also reflected in the strength of relationships in the Glasgow City Region building on previous Strathclyde County days.
3. Most frequently cited was having known contacts / named individuals within provider organisations, “once you have the right contact within an organisation, engagement is much easier” (survey respondent), “key to effective delivery is a named individual ... it’s a ‘win win’ situation, they have our key contact and we have theirs” (case study interviewee).
4. The benefits of ‘in-house’ provision, whether through county or unitary status: “unitary status makes working with highways and education services much easier – we are part of the same team” (survey respondent), “having close working relationships within an authority enables shared objectives” (survey respondent).
5. Providers’ observations that their engagement on planning was significantly aided where they had been able to participate in a consortium type approach. This has been reported in Cambridgeshire and Peterborough with a water provider using Water Resources East as a mechanism to positively work with a range of stakeholders early in the process.

Case study snapshots

Staffordshire	Cambridgeshire and Peterborough	Glasgow
The Staffordshire study highlighted the transport sector, rail in particular, as uniquely complex and confusing. The new regional transport body, Midlands Connect, was, however, widely considered to add value to the set of regional governance	The Cambridgeshire and Peterborough study highlighted a strong appetite for the CPCA and the Mayor to add coherence to and campaign for better engagement with infrastructure providers on planning, widely seen as currently sub-optimal.	The Glasgow City study provided strong examples of proactive and successful engagement. It has an Infrastructure and Assets Portfolio Group that is actively contributing to public private sector dialogue, with the Metropolitan Glasgow

structures and perceived as providing a vehicle to exert influence on providers and to influence national decision making. Staffordshire County Council is represented on the strategic board of Midlands Connect. Their 25 year strategy establishes a spatial framework for targeting strategic transport investment. It aims to engage closely with all members and set a clear and robust focus.

The Non-Statutory Spatial Framework's objective to develop a *Memorandum of Understanding* with energy, water and digital utilities providers to set out "*new, agreed ways of working achieve more timely and effective delivery of utilities infrastructure*" was positively highlighted.

Strategic Drainage Partnership highlighted as a key demonstrator of effective collaborative. An annual Infrastructure Summit is held at the Glasgow City Region level. Local authorities have been proactive in engaging in providers including the utilities who have shown willingness to engage at a high level. This engagement has led to joint agreements, including on data sharing.

Principle 4: Resources, capacity and skills

“I commissioned a piece of work to understand the utility implications and limitations of doubling the size of this town and the number of people that were involved in answering that question was extraordinary, water engineers are different to power engineers and so on, so I don’t think it’s something that in terms of expertise local authorities are capable of resourcing, they can’t pay for that resource in house.” (Case study interviewee)

“Working with local authorities is ok but there is a huge number of them and not many staff to do it.” (Provider)

“... it’s [not] for the authority to have all the capacity we have to work in partnership ... it’s a combined authority – better together.” (Case study interviewee)

“There are finite budgets in local government and competing issues and infrastructure is not always seen as a priority.” (Case study interviewee)

“There is a lack of staff devoted to infrastructure planning in policy.” (Survey respondent, unitary authority)

“Resources are stretched on both sides, so data sharing would be useful but it must be reliable (updated regularly) and meaningful.” (Survey respondent, district council)

“We have a lot of data that is publicly available, and more that can be provided. We are working on a web app to enable improved data sharing, to build on it to show planning development, infrastructure proposals and gaps” (Survey respondent, unitary authority)

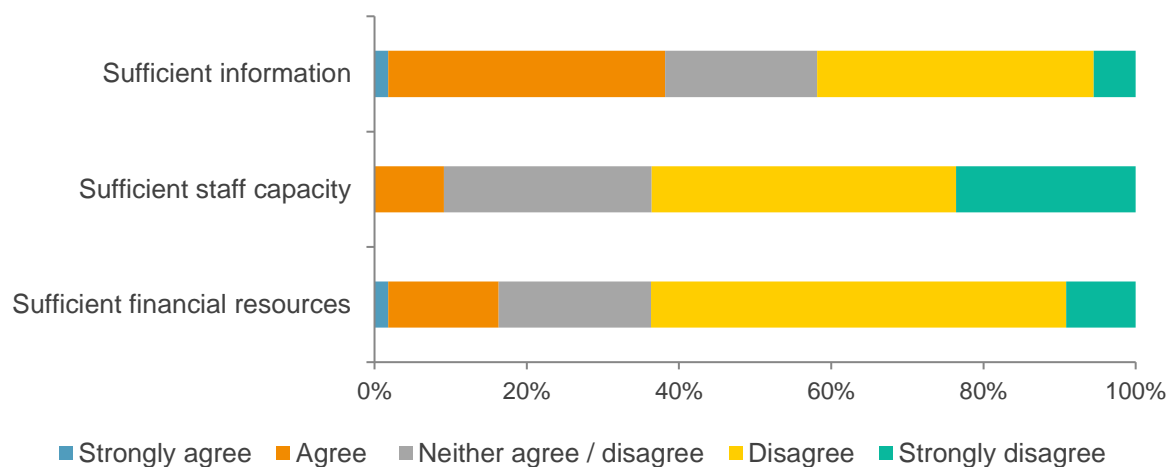
“We have shared area based ... ‘load’ information to enable providers to understand where growth of different types of development could lead to pressures and to what degree and when.” (Survey respondent, district council)

Core findings

Despite the widespread appreciation, at least at a conceptual level, of its importance to plan delivery, **infrastructure planning appears to be insufficiently visible** both within local authorities and for providers. It was variously described as a ‘sub-set’ rather than core planning activity. If infrastructure is broadly accepted as *‘everything that is not housing’* (as described by one interviewee), then this was acknowledged as being problematic.

This lack of visibility, and perhaps ownership of infrastructure planning, was reflected in findings related to the resourcing of infrastructure planning with **very few local authorities being confident they have either the funding, staff, or information** needed to deliver the infrastructure to support their vision.

Figure 4: Do local authorities have sufficient information, staff capacity and financial resources to support infrastructure planning? (% of survey respondents by level of agreement)



Over 60% of survey respondents either disagreed or strongly disagreed with the statement ‘*my authority has sufficient staff capacity to support effective infrastructure planning*’. There was very little variation by type of local authority, although it was notable that all combined authority survey respondents ‘disagreed’ or ‘strongly disagreed’. Staff resource was an issue across all three case studies, with very few having dedicated staff resource focused exclusively on infrastructure planning. Interviewees particularly bemoaned the resource requirement of fund bidding: “Processes like the Housing Infrastructure Fund are too onerous and require far too much resource with a lack of certainty over delivery”. This was affirmed by one unitary authority survey respondent noting “the HIF bidding process requires an enormous effort, with no certainty and if we are successful we will have to move lightning quick but with no capacity.” One district council member in Cambridgeshire, highlighting that staff resource was already being shared on local plan preparation, said “we need to have a way of interacting on utilities, water, energy. It’s totally impractical to work on an individual local authority basis.” For many, district geographies are simply too small for strategic infrastructure planning.

There is some **evident unease** within the planning community about the **extent and nature of the skills and knowledge** needed to support effective infrastructure planning and delivery. To some extent this unease reflects a lack of staff resource. As one case study interviewee from within a district council noted, “with one person doing infrastructure planning as an addition to their sustainability portfolio, it’s difficult for them to hold all the knowledge”. But this issue is not simply one of staff resource. One case study interviewee asked “how far planning knowledge should be reasonably expected to extend”, which was aptly reflected in the response of one survey respondent in commenting on the challenge of receiving information from providers: “it is often the case that the records were not meant to be interpreted for planning purposes and therefore they need interpretation”. For this reason, infrastructure planning is an area where specialist consultancy support is often required, posing a further financial challenge resource-strapped authorities. One case study interviewee acknowledged the potential frustration for providers of a lack of sector specific understanding: “there is concern from energy providers that there is lack of understanding of the sector and how upgrades and reinforcements are delivered and many officers do not realise that there are numerous providers that lay the pipes and that they work in a customer focused industry with strict restrictions on spending”.

Local authority participants in this study were also keen to highlight **a lack of resource for and knowledge about planning processes within infrastructure providers themselves**. Some survey respondents made very generic (but critical) statements, “*providers have a lack of specialised staff*”, “*infrastructure sectors have little understanding of the planning process and what information is required*”, and “*There are many issues with providers around capacity and resource and a lack of understanding of planning process*”. Others highlighted sector specific challenges, with health receiving particularly strong criticism: “*the NHS does not have the expertise to sit in the room*” (case study interviewee), and “*the NHS needs to hire some planners*” (survey respondent).

A particularly recurrent theme within case study interviews was the lack of knowledge and expertise within regulators on the relevance of planning to their sectors: a matter which was thought to permeate the behaviour of utilities. This finding was not, however, corroborated by some provider interviewees in the energy and water sectors who appeared knowledgeable about the planning process and actively involved in liaising with local authorities and who reported costing activities to understand where growth is likely to be to inform their capacity maps and growth plans. It is, however, likely that those we spoke to - actively engaged in partnership working - may not be representative of sectors as a whole.

There was widespread acknowledgement from nearly all respondents about the potential **benefits of greater data sharing** to increase knowledge and understanding on all sides to enable forward planning and improved decision making. However, while there is **much evidence of data being shared** between local authorities and infrastructure providers and visa versa, this appears to be very ad-hoc and sector specific; “*Sometimes we share data, it depends on the issue ...*”, “*...providers generally share information on request, or implementation, not openly ...*” (survey respondents). There is no evidence of a single, open, consistent hub for the data and evidence needed for effective planning, and sparse knowledge as to how data sharing can be used to best effect. Those survey respondents (quoted above) highlighting data tools to engage providers on growth were outliers rather than the norm. Only the Glasgow case study showed evidence of cross-sector data sharing tools facilitated by the ClydePlan team (including formal data sharing agreements), along with future plans for utility providers and the City Council to collaborate on spatial and temporal mapping.

Data sharing and the use of information appears increasingly important to providers. All four utility companies interviewed were keen to understand the future locations for growth and are diverting resources into understanding this, specifically engaging consultants to identify the growth plans of LPAs, and using these maps to inform RAG assessments and provide information about potential locations for growth and their constraints. This appears to be particularly well developed in the gas and electricity industry. Providers expressed a strong desire for standardised data sets to be made available for all using a consistent format. They also gave specific examples of their use of data: Scottish Water use growth data to inform their network management and identify capacity for their Network Impact Assessment and treatment works growth projects; Anglian Water track new development; and Highways England use growth information to input into their strategic forward plans.

Case study snapshots

Staffordshire	Cambridgeshire and Peterborough	Glasgow
<p>The Staffordshire case study provided an example of significant corporate support for investing in specialist consultancy services to support infrastructure delivery. This support was considered a significant contributory factor in the success Staffordshire has had in levering in funds: <i>“Funding has changed but the Council has been very agile in clawing funding back”</i>.</p>	<p>The Cambridgeshire and Peterborough case study provided an example of clear support for evidence base informed policy. An early action of the CPCA was to commission an Independent Economic Review, chaired by economist Kate Barker. It is presented <i>“as providing a clear understanding of the priorities which can help business and political leaders in the area to unite behind a common strategy”</i> (CPIER, 2018). A clear motivation for the commission was for priorities to be underpinned by strong evidence, through both the collation of existing data and the commissioning of new data.</p>	<p>The Glasgow case study provided clear evidence on forward thinking and the potential use of data to aid integration. The Glasgow City Region’s Infrastructure and Assets Portfolio Group is prioritising digital solutions, including the sharing of information, to assist in aligning infrastructure investment. A ‘barrier busting’ project is live in Glasgow to support digital infrastructure in the city. This involves <i>‘partnering up’</i> external providers, including mobile network operators, technology providers, and investment companies. Digital masterplanning is also part of the work on Glasgow City Plan and Digital Glasgow Strategy.</p>

Principle 5: Learning and dissemination

Each of the principles was shaped by thinking about what **‘good infrastructure planning’ looks like** and the **search for evidence of it happening in practice**. The literature review demonstrated an appetite for good practice and for lessons learnt to be identified and shared.

Across the three case studies, and supported through the survey of local authorities, examples of effective practice were put forward. These have included:

- Individual projects such as Enterprise Zones, new stations and canals, which evidence good practice at the project level
- Data sharing to inform utility provider growth plans and capacity mapping
- Infrastructure co-ordination officers, and dedicated growth and infrastructure teams, such as the Greater London Authority Infrastructure Coordination and Development Team
- Organisations such as Midlands Connect, which illustrate the potential of organisations derived on a functional geographical basis to provide an interface between the local and national levels of planning
- The use of Memorandums of Understanding to promote new ways of working
- Groups such as the Metropolitan Glasgow Strategic Drainage Partnership and Assets Portfolio Group, and the Greater Manchester Strategic Infrastructure Board, which draw planners and providers together
- Growth aligned infrastructure frameworks, such as the Cheshire East Infrastructure Delivery Plan, the Greater Essex Growth and Infrastructure Framework, the North Northamptonshire Investment Framework, and the Hertfordshire Infrastructure Funding prospectus
- Emergent working at a strategic scale using Strategic Infrastructure Plans (such as in Staffordshire) and similar, including work being led by newly formed combined authorities (for example the Greater Manchester Strategic Framework), and the Greater London Authority with its work on the London Infrastructure Plan 2050 (attempting to identify, prioritise and cost London’s future infrastructure to 2050)

These, and other narratives within the research, have shown that there are ways in which the organisational, technological, sectoral, geographical and social integration can be achieved. But these good practice examples are not widespread or widely known. Many participants in this study struggled to identify evidence of a strategic and co-ordinated approach to infrastructure planning, which seeks to draw together planning and partners at all stages in the process and particularly at an early stage. In particular, the latter examples in the list are notably ‘emergent’ and not yet ‘proven’ despite the evident aspiration and hope invested.

The future challenge is to continue to learn from existing practice and to share good practice, where it is evidenced, to effect change elsewhere. Below is an example highlighted from the survey which tells a story of success and draws together many of the key principles that have

emerged through this research. This, and similar stories, need to be shared to encourage dialogue, improve practice, enhance visibility, and importantly encourage those pursuing delivery to think about what success looks like.

Vauxhall Nine Elms Battersea (VNEB) Opportunity Area

VNEB is a good example of delivering a vision, to create a new place where people want to live and work, through the effective use of an infrastructure plan. Stretching across the two central London boroughs of Lambeth and Wandsworth, and strategically positioned on the River Thames opposite Westminster, a £15bn investment in this new mixed-use district by numerous partners and landowners will deliver 20,000 new homes and up to 25,000 new jobs. This growth is supported by a dedicated infrastructure package of over £1bn which includes a two-stop extension to the Northern Line plus other transport improvements, new schools, health centres, community and leisure facilities and a new park for London.

The Opportunity Area Planning Framework (OAPF) identified the opportunity, vision, objectives and priorities. These were brought together into a single deliverable plan which set out all elements of the strategy, its requirements, governance, costs and funding. The Development Infrastructure Funding Study identified what infrastructure was required, when, who was responsible for delivery, how it related to the delivery of development, and how it was going to be paid for.

Key elements of its success are:

- Committed leadership to champion the vision
- Establishment of a dedicated infrastructure delivery team
- Governance and partnership arrangements which have built trust and promoted collaborative working
- Recognition that there are trade-offs and compromise which require flexibility and ability to play the long game
- Understanding of cashflow, viability and land values, and for the need for the plan to be a living document and use review mechanisms

5: Conclusions and a framework for discussion

Principle 1: Place, vision and objectives

The importance attached by participants to a place led approach to infrastructure planning – in principle, if not (yet) in practice) – is reflected in the fact that survey respondents ranked “*improved leadership and integration at a local level, including cross sector coalescence around a single vision for infrastructure*” as their foremost priority for change. However, the ability to realise such a vision locally is too often stymied by the (increasing) complexity of governance arrangements, and the uneven distribution of strategic planning competencies; the mayoral combined authorities have important new (optional) powers to plan at a ‘larger than local’ level, elsewhere, progress depends on the (variable) leadership capacity of the upper tier authorities.

Who should do what now?

- **Central Government** should show leadership on the importance of strategic direction in spatial plans and in determining at what level spatial visions should be set. This should recognise that this will be different according to place, but with planning according to functional geographies of pre-eminent importance.
- **Central Government** should also review the overlapping institutional boundaries of LEPs, combined authorities, and other key governance players and seek to rationalise these where appropriate to support infrastructure planning.
- **Local Government** needs to recognise the importance of early and collaborative engagement across-boundaries to support infrastructure planning, and to align the infrastructure requirements of spatial visions. The differing and emerging forms of strategic planning (both statutory and non-statutory), and their potential contribution to infrastructure planning, need to be both acknowledged and assessed. Wider adoption of strategic, including county wide, infrastructure plans should be encouraged.
- **Providers** need to be included within strategic level dialogues about long term growth and place plans. However, further thought is needed about how to address the perverse incentives that make it difficult for this to happen within current systems and frameworks.

Principle 2: Prioritisation and funding

Local planning authorities encounter multiple obstacles to prioritising infrastructure investment. The mechanisms by which infrastructure is funded in the UK emerges as a crucial (but not the only) impediment. Infrastructure funding is an ‘uneven playing field’. A small number of mayoral combined authorities benefit from the funding, freedoms and flexibility associated with deals (although these do not receive universal approval).

Elsewhere, local planning authorities are obliged to compete for a more modest share of investment, prioritising central government priorities over local ones, in typically very short time frames. Survey respondents frequently called for “*long term funding from central government*”

rather than ad hoc bidding pots” and “more freedoms and flexibilities for local authorities to raise funding and be innovative”.

Who should do what now?

- Assessments of infrastructure requirements should happen at the spatial plan rather than project level. **Central Government** needs, therefore, to address the negative impacts of a ‘deal’ approach to infrastructure funding, which encourage a project rather than place-based approach to funding.
- **Central Government** should urgently rationalise and simplify the infrastructure funding system, addressing the disbenefits, for many players, of a funding environment focussed on bidding rather than single-pot funding settlements.
- **Central Government** should explore how local fiscal autonomy, enabling greater freedom for local government to raise and spend income locally and in accordance with local priorities, might be extended as part of, or additional to, a deal making framework
- **Local Government** needs to produce realistic, deliverable (i.e. financially viable) infrastructure delivery plans to ensure that investment is focussed on place-based solutions rather than on piecemeal developments. These can be done in conjunction with English combined authorities and upper tier authorities, through the vehicle of strategic infrastructure plans or similar.
- There are a variety of barriers and restrictions on **infrastructure providers** that impact how and what they can fund, particularly their ability to forward fund projects to improve capacity ahead of development. Further thinking is needed about how restrictions on **infrastructure providers** limit their freedoms to engage in longer term strategies that may derive benefits beyond their current regulatory and funding periods.

Principle 3: Engagement and alignment

With planners’ reliance on 3rd parties for delivery, a consistent finding across the research was the importance of nurturing relationships between organisations (planners and infrastructure providers of all kinds) as a central component of infrastructure planning and delivery. However, the research also highlighted the challenge of enabling this in practice, particularly at the strategic rather than site level. Survey respondents ranked, ‘early engagement with providers on plans / improved dialogue with providers’ as one their top two priorities for improved infrastructure planning. There was a strong sense that early engagement is a fundamental driver of success, and that strategic level bodies have a potentially significant role in facilitating engagement at this time and scale.

Who should do what now?

- The **National Infrastructure Commission** should launch an enquiry into how early engagement between local authorities, providers and other stakeholders can be better facilitated to ensure infrastructure and land use is effectively planned to minimise unnecessary additional infrastructure, and optimise quality of place for the communities of the future.
- For **Central Government**, there are important questions about the leadership role it plays

in relation to infrastructure, reflected in how it ‘tasks’ its own departments and agencies to support infrastructure planning and the level of priority and visibility planning has within Whitehall. Consideration should be given by Government to the tasking of regulators: can they be required to plan for growth, with a statutory obligation on utility providers to engage early and proactively through a duty to co-operate or similar?

- **Local Government**, whether acting at a local planning authority level, or in its role contributing to strategic functional area planning, must either establish / or contribute to a team whose objectives are focused solely on the co-ordination of infrastructure to deliver intended place outcomes.
- For **Infrastructure Providers** further thought needs to be given to how they can be incentivised, either within current or revised frameworks, to engage early in planning frameworks. A clear and positive case needs to be made for engaging early, even where there are regulatory restrictions or challenges on investing prior to an immediate revenue return. Exploration should be given as to whether statutory consultee status on certain plans and projects might be appropriate.

Principle 4: Resources, capacity and skills

With nearly 50% of survey respondents selecting ‘increased capacity, resource and skills’ as one of their top 5 priorities for improving infrastructure planning, it is clear that the resource needs of effective infrastructure planning need to be enhanced, both in overall terms but also through the more efficient use of existing resources. This goes hand in hand with the evident need to raise the profile of infrastructure planning both within providers and government at all spatial scales, so that infrastructure planning receives corporate level support.

Who should do what now?

- **The RTPI, together with education and training providers**, should review the core skills competencies and knowledge needed for infrastructure planning in order to support infrastructure planning as a core competency and as a specialism within existing planning degree and apprenticeship programmes, and to explore bespoke infrastructure planning qualifications as part of ongoing CPD.
- **Organisations, of all kinds**, need to ensure that they are employing people who can effect engagement at all levels from vision to delivery. **Central Government** needs to urgently review the capacity and capabilities of its departments and statutory agencies to support effective engagement on infrastructure planning, with health appearing as a particular priority. For **private sector providers**, there is a need to cultivate more expertise to enable meaningful direct engagement with planning professionals. For **local government**, there are further opportunities for the creative sharing of resources to address the challenges of planning for infrastructure on an individual (particularly district council) basis. There are, however, important questions, about how best to enable this. The combined authority approach or similar, with strategic capacity and leadership, provides a positive model.
- A **single, open, consistent hub for the data and evidence** needed for effective infrastructure planning would help overcome the barriers created by overlapping functional/organisational geographies. This would enable stakeholders to access the data

they need relevant to their plan or project irrespective of organisational boundaries. Organisations such as the National Infrastructure Commission, and relevant Government Catapults, such as the Connected Places Catapult, need to stimulate the conversation on how to make this happen.

Principle 5: Learning and dissemination

There is a strong desire for greater learning about what ‘good infrastructure planning looks like’ and the sharing of good practice. However, these are not widespread and largely project or site-specific, rather than representing examples of a strategic and co-ordinated approach to infrastructure planning.

Who should do what now?

- If infrastructure planning is going to thrive and deliver real change it needs to be more visible. There is a role for organisations such as **RTPI**, the **NIC**, the **Infrastructure Commission for Scotland**, the **TCPA**, and the **County Councils Network** as well as others, to champion infrastructure planning and the sharing of good practice, providing a depository of examples.
- Consideration should be given to the establishment of a **local infrastructure planning association**. Such a membership organisation, open to players and organisation of all kinds, would promote research into and dissemination of effective infrastructure planning and delivery tools and techniques, policies and strategies to accommodate future change, and case studies of effective engagement, vision setting and delivery planning.

Selected references

- Adams, D and Watkins, C. (2014). *The Value of Planning*. RTPi Research Report No.5, Royal Town Planning Institute, London.
- Arts, J. et al. (2016). Benchmarking integrated infrastructure planning across Europe –moving forward to vital infrastructure networks and urban regions. *Transportation Research Procedia*, 14, 303-312.
- Baker, M. and Hinks, S. (2009). Infrastructure Delivery and Spatial Planning: The Case of English Local Development Frameworks. *Town Planning Review*, 80, 173-199.
- Bircham Dyson Bell. (2018). *England's Economic Heartland: Identifying the barriers to delivery of strategic infrastructure governed by regulatory frameworks*. Available from: englandseconomicheartland.com/Documents/Utilities%20full%20report.pdf
- Bibby, J. (2016). *A new deal for health? The links between economic infrastructure and health and well being*. The Health Foundation. Available from: health.org.uk/blogs/a-new-deal-for-health-the-links-between-economic-infrastructure-and-health-and-wellbeing
- Connected Places Catapult. (2016). *Future of Planning: State of the Art Innovations in Digital Planning*. Available from: futurecities.catapult.org.uk/2016/12/01/future-planning-state-art-innovations-digital-planning
- Centre for Progressive Health. (2018). *Beyond sticking plasters*. Available from: progressive-policy.net/downloads/files/Beyond-sticking-plasters-CPP_181211_091637.pdf
- Glasgow and the Clyde Valley Strategic Development Plan Authority. (2017). *Clydeplan Strategic Development Plan*. Available from: clydeplan-sdpa.gov.uk/strategic-development-plan/current-plan/current-strategic-development-plan-july-2017
- Dunning R. and Taylor-Buck. (2017). Editorial: The integration of infrastructures as a response to climate change: a critical opportunity? *People, Place and Policy*, 11 (1), 1-6.
- Glasgow City Council. (2017). *Glasgow City Plan*.
- Glaeser, E. and Berry, C. (2006). *Why are smart places getting smarter?* Rappaport Institute/Taubman Center Policy Brief.
- Greenfield, A. (2013). *Against the smart city (The city is here for you to use Book 1)*, Do Projects, New York.
- Hall, J. et al. (2012). *A Fast Track Analysis of Strategies for Infrastructure Provision in Great Britain: Technical Report*. Oxford: Environmental Change Institute.
- Hickman, H., Dunning, R. and While, A. (2017). *The new politics of soft-densification*. In: UK/Ireland Planning Research Conference, Belfast, Northern Ireland, 11-13 September 2017. Available from: eprints.uwe.ac.uk/33209
- HM Government. (2016). *National Infrastructure Delivery Plan 2016-2021*. Available from: gov.uk/government/publications/national-infrastructure-delivery-plan-2016-to-2021
- HM Government. (2017). *Industrial Strategy: Building a Britain Fit for the Future*. Available from: gov.uk/government/publications/_data/file/664563/industrial-strategy-white-paper-web-ready-version.pdf
- Housing and Finance Institute. (2017). *Better Connections: A consultation paper on improving the delivery of housing Infrastructure*, London: Housing and Finance Institute
- Institute for Government. (2018). *How to transform infrastructure decision making in the UK*. Available from: instituteforgovernment.org.uk/publications/how-transform-infrastructure-decision-making-uk
- Heeres, N. Tillema, T. and Arts, J. (2016). 'Dealing with interrelatedness and fragmentation in road infrastructure planning: an analysis of integrated approaches throughout the planning process in the Netherlands', *Planning Theory & Practice*, 17 (3), 421-443.
- Joss, S. Sengers, F. Schraven, D. Caprotti, F. and Dayot, Y. (2019). 'The Smart City as Global Discourse: Storylines and Critical Junctures across 27 Cities', *Journal of Urban Technology*, 26 (1), 3-34.
- Kitchin, R. (2014). 'The real-time city? Big data and smart urbanism', *GeoJournal*, 79(1):1-14.

- Letwin, O. (2018). *Independent Review of Build Out*. Available from: assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/752124/Letwin_review_web_version.pdf
- Lowndes, V. and Gardner, A. (2016). 'Local governance under the Conservatives: super-austerity, devolution and the 'smarter state'', *Local Government Studies*, 42 (3), 357-375.
- Luque-Ayala, A. and Marvin, S. (2015). 'Developing a Critical Understanding of Smart Urbanism', *Urban Studies* 52 (2): 2105-116.
- Malekpour, S. (2015). 'Strategic planning of urban infrastructure for environmental sustainability: Understanding the past to intervene for the future', in *Cities*, 46, 67-75.
- Marshall, T. (2014). *Infrastructure, the economy and planning: the case for new approaches*. Available from: itrc.org.uk/wp-content/PDFs/Marshall-Infrastructure-the-economy-and-planning-the-case-for-new-approaches.pdf
- Mawswon, J. and McGuinness, (2017). Can localism resolve England's spatial planning conundrum? In *Town planning review* 88 (2), 283-303
- McKinsey and Co. (2016). *Financing Change: How to mobilize private sector finance for sustainable infrastructure*, New York: McKinsey.
- McClellan, A. (2017). 'Defining infrastructure integration: Abstract aspirations and institutional variations', *People, Place and Policy*, 11 (1), 15-36.
- Morphet, J. (2016). *Infrastructure Delivery Planning an effective practice approach*. Policy Press.
- National Audit Office. (2019). *Planning for New Homes' Press Release*. Available from: nao.org.uk/press-release/planning-for-new-homes/
- National Audit Office. (2019). *Planning for New Homes Full Report*. Available from: nao.org.uk/wp-content/uploads/2019/02/Planning-for-new-homes.pdf
- National Infrastructure Commission. (2018). National Infrastructure Assessment. Available from: nic.org.uk/assessment/national-infrastructure-assessment
- National Infrastructure Planning Association. (2017). Effective National Infrastructure. Available from: nipa-uk.org/uploads/news/Insights_FinalWeb.pdf
- Neuman, M. (2014). 'The long emergence of the infrastructure emergency', *Town Planning Review* 85, (6), 795-806.
- OECD, National infrastructure Commission, International Transport Forum. (2017). *Strategic Infrastructure Planning: International Best Practice*. Available from: itf-oecd.org/strategic-infrastructure-planning
- Peter Brett Associates. (2018). *Creating communities fit for the future: repurposing the development plan process by putting places first*. Available from: peterbrett.com/media/5990/places-first-vol-2-for-web.pdf
- Planning Advisory Service. (2009). *A steps approach to infrastructure planning and delivery*. Available from: local.gov.uk/sites/default/files/documents/A_steps_approach_to_infrastructure_planning_and_delivery_June_2009.pdf
- Planning Institute Australia. (2017). *Infrastructure and its Funding: Implications for Planning* <https://www.planning.org.au/documents/item/8890>
- Plimmer, G. and Tetlow, G. (2017). *Why the UK is struggling with poor infrastructure*. Available from: ft.com/content/c907081e-80c7-11e7-94e2-c5b903247afd
- Scottish Government. (2015). *Planning for Infrastructure Research Report*. Available from: gov.scot/Resource/0048/00483681.pdf
- Scottish Government. (2018). *Exploring the Economic Rationale for Infrastructure Investment*. Available from: gov.scot/publications/exploring-economic-rationale-infrastructure-investment/pages/1/
- Saidi, S. (2018). 'Integrated infrastructure systems: a review', in *Sustainable Cities and Society*, 36, 1-11.

- Town and Country Planning Association. (2016). *Planning for Climate Change: Understanding the performance of English local plans*, London: Town and Country Planning Association. Available from: tcpa.org.uk/Handlers/Download.ashx?IDMF=7d92ec4c-09f7-4b21-9d22-b1aad77fd062
- Town and Country Planning Association. (2018). *Planning 2020 - Raynsford Review of Planning in England*. Available from: tcpa.org.uk/Handlers/Download.ashx?IDMF=30864427-d8dc-4b0b-88ed-c6e0f08c0edd
- Taylor Buck, N. and While, A. (2017). Competitive urbanism and the limits to smart city innovation: The UK Future Cities initiative. *Urban Studies* (54), 501- 519.
- Tomaney, J, O'brien, P. and Pike, A. (2018). 'Planning for Infrastructure', in Fern, K and Tomaney, J. (eds) *Planning Practice, Critical Perspectives from the UK*. Routledge.
- Tewdwr-Jones M, Goddard J. (2014). 'A future for cities? Building new methodologies and systems for urban foresight' *Town Planning Review* 85 (6), 773-794.
- Williams, K. (2014). '*Urban Form and Infrastructure: a morphological review*', Government Office for Science, Part of the Future Cities Foresight Review, London.
- World Economic Forum. (2018). *The Global Competitiveness Report 2018*. Available from: reports.weforum.org/global-competitiveness-report-2018/
- Young, D. and Keil, R. (2017). 'Reconnecting the disconnected: The politics of infrastructure in the in-between city', *Cities*, 27 (2) 87-95.



RTPI

Royal Town Planning Institute

**For more information about this research,
and the three appendixes, visit:**

rtpi.org.uk/integratedinfrastructure

RTPI - Royal Town Planning Institute

research@rtpi.org.uk

Tel: 020 7929 9494

Report contact

James Harris

Royal Town Planning Institute,
41 Botolph Lane, London EC3R 8DL.

Registered Charity in England (262865) & Scotland (SC037841)

