

West of England Partnership
RESPONDING TO INFRASTRUCTURE
DELIVERY AND PLANNING ISSUES IN THE
WEST OF ENGLAND



with transport inputs from **URS**

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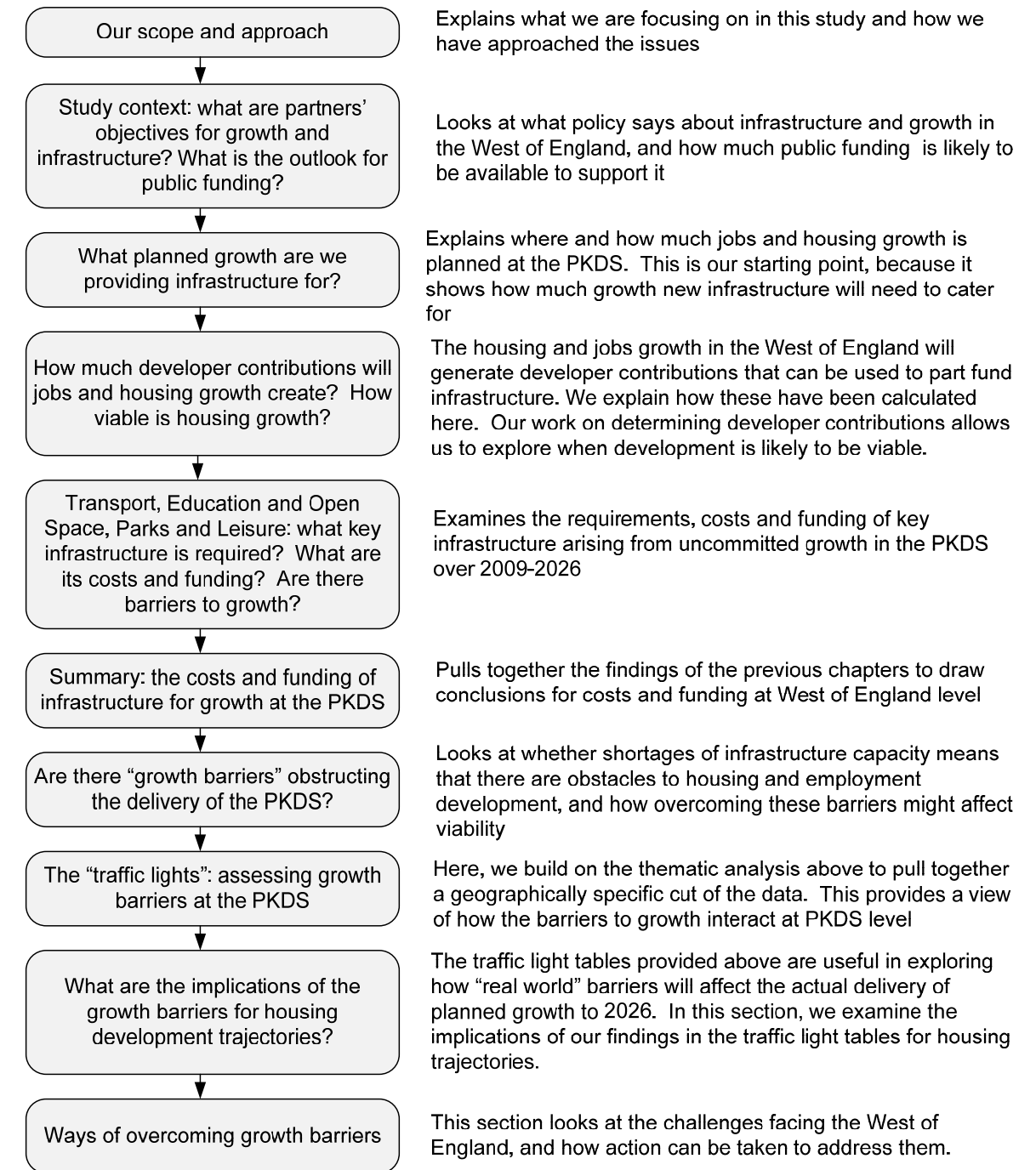
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1 INTRODUCTION

- 1.1 This report is the West of England Infrastructure Delivery and Planning Assessment. The report was written by Roger Tym & Partners with specialist transport input from URS.
- 1.2 The brief states that we are to “identify and appraise the infrastructure required to support the growth of the West of England sub-region. Priority is attached to securing advice about infrastructure requirements of strategic significance... clarifying delivery issues, and their implications for infrastructure investment priorities and the phasing of development...the study will give particular attention to establishing and clarifying linkages between development progress and infrastructure provision, and the implications of delivering infrastructure for meeting development targets and achieving other strategic priorities.”
- 1.3 In line with the brief, our emphasis in this assessment is three-fold.
- 1.4 Firstly, we need to inform partners about the key infrastructure needed to get the West of England’s Priority Key Development Sites (PKDS) developed, and the costs and funding of that infrastructure.
- 1.5 Secondly, we pull together evidence on growth barriers, infrastructure dependencies, available funding and development viability to understand infrastructure funding gaps and set up a credible story about which sites can go forward, when, and how. The resulting analysis is used to determine an alternative housing trajectory for the West of England. This allows us to investigate how close the West of England Partnership can get to delivering RSS targets for housing and employment over the plan period.
- 1.6 Thirdly, we look at what the public sector can do to support the delivery of the priority sites by examining how an action plan might go about influencing wider strategic, management and policy choices. As a result, we hope this work will be of practical use in efforts to get the PKDS built out.
- 1.7 This is necessarily a long and detailed report. However, we have tried to clarify the issues, rather than further obscure them. A quick understanding of the report can be reached by simply reading the “headline” sub-titles, whilst more detail is contained in the supporting text.
- 1.8 The diagram below shows how we have structured this report.

Figure 1.1 Report structure



Source: RTP

2 OUR SCOPE AND APPROACH

Introduction

2.1 This section defines the scope of our assessment and the approach we have taken.

The area we are looking at

2.2 The West of England Partnership area comprises the four unitary authorities of Bath & North East Somerset, Bristol, North Somerset and South Gloucestershire.

The sites we are covering

2.3 The focus for our study is the list of Priority Key Development Sites specified by the Partnership, plus one subsequent additional site. The full list of sites we will be considering is:

- Bath proposed urban extension:
 - Option 1 - Straddling the A367 south of the City
 - Option 2 - South of the A4 on the western side of the City extending up to Twerton
- Bath City Centre including Western Riverside
- Keynsham
- South East of Bristol (B&NES) - proposed urban extension
- Bristol City Centre including St Philips
- South Bristol incl. Hengrove Park Phases 1&2
- North Bristol
- Avonmouth/Severnside
- Weston Town Centre and urban area, and proposed urban extension
- South West of Bristol (North Somerset) - proposed urban extension
- North Fringe of Bristol (including proposed urban extensions- West of M32 and Cribbs Causeway)
- East Fringe of Bristol (including Emersons Green and proposed urban extension)
- Yate

2.4 In a number of instances we have broken the PKDS down into their smaller constituent parts. This is in order to pick up the finer grained detail necessary to make properly informed judgements about factors such as infrastructure requirements and viability.

The types of infrastructure we are looking at

Defining infrastructure

2.5 Generally, infrastructure has been defined as “the basic physical ... structures (eg buildings, roads and power supplies) needed for the operation of a society.”¹

We have provided an assessment of requirements, costs and funding of “big ticket” primary infrastructure

2.6 We have been asked to focus on “strategic infrastructure” in our study. Our term for this is “primary infrastructure.” This is opposed to looking at needs for additional local facilities normally funded by that development, which we would include within secondary infrastructure. We discuss secondary infrastructure in more detail below. We have also been asked to look at “big ticket items.”

2.7 Clarifying our scope therefore requires us to define a) primary infrastructure as a generic category, and then b) identify which components of primary infrastructure constitute “big ticket” items. We do this below.

Defining primary infrastructure

2.8 Primary infrastructure is required to accompany development in order to allow new households to function within a wider community. Examples include schools, health, leisure and community facilities, parks, open space, and off-site transport connections to wider networks.

2.9 This infrastructure will be largely used by the community living and working in the development but others would not be excluded from using these facilities.

2.10 It is possible, even likely, that some primary infrastructure is provided off-site. It is assumed that some developer contribution will be required to support the provision of primary infrastructure. In many instances, other mainstream central or local funding will also be used to support the delivery of primary infrastructure.

Identifying the “big ticket” primary infrastructure categories of transport, education and parks/open space

2.11 Our previous infrastructure studies have shown that the “big ticket items” are a) transport, b) education, and c) the composite category of significant parks, open space, leisure and indoor/outdoor sports. The table below shows how these three categories tend to dominate the make-up of infrastructure costs in recent infrastructure studies that we have undertaken.

¹ Concise Oxford English Dictionary

Table 2.1 Share of total costs by infrastructure category in a sample of previous RTP studies

	Transport	Education	Parks, open space, leisure and sports	Total
Leicester and Leicester shire	70%	18%	7%	95%
Harlow	54%	26%	6%	85%
Hertfordshire	42%	30%	11%	82%
Average of share	55%	24%	8%	87%

Source: RTP

2.12 The remaining costs are fractured across a wide range of infrastructure categories which are individually relatively insignificant. In the case of the work in Leicester, for example, the residual 5% of costs outside transport, education and open space fell into nine further infrastructure categories.²

2.13 We have therefore concentrated on transport, education and open space categories in our assessment.

We deal with “secondary infrastructure” differently

We have implicitly allowed for secondary infrastructure costs in the study

2.14 We assume that all sites will require secondary infrastructure, and because it will usually be paid for by developers and often be “on site”, we have not separately itemised secondary infrastructure requirements, costs and funding in this assessment.

2.15 Secondary infrastructure is to create accessible and serviced developable plots. Developers also generally pay for small scale open and play spaces together with on site and adjacent landscaping, and so this falls within the definition. Developers build these costs into their assessment of development sites.

2.16 In section 5, we consider the potential viability of the PKDS and how much developer contributions this housing and employment growth might generate to help fund primary infrastructure costs. We have therefore taken the same approach as developers in building the generic costs of secondary infrastructure into our assessment of developer contributions. An assessment of secondary infrastructure costs will usually include the following:

- internal distributor roads and internal transport
- drainage
- sewage

² Waste, ambulance, fire, police, youth centres, childrens’ social care and services, primary health care, libraries and community/cultural facilities

- gas
- electricity
- telecoms connections

2.17 A separate itemisation of all secondary infrastructure costs and requirements as part of this assessment would be a) redundant and b) unacceptably complicated. Our generic assumptions of these costs are set out in Appendix 4.

We have not precisely analysed costs and funding for utilities, and flood defence. Instead, we have treated these issues as potential “growth barriers”

2.18 Utilities and flood defence requirements are treated in a different way to transport, education and public space. Although some will be primary infrastructure and some secondary, we have not gone in detail into the costs and funding of these issues. We explain below why this is not necessary, and also explain the “growth barrier” issues that mean that these issues cannot be in any way ignored.

How this study deals with utilities

2.19 Utilities issues have been incorporated in two ways.

- In our analysis of barriers to growth: we have investigated the extent to which utilities infrastructure may represent an obstacle to jobs and housing growth. It may be, for example, that utility provision is at capacity, and that further growth is impossible until further investment takes place. Our method has explicitly picked up these issues with service providers.
- In our viability analysis: in some instances developers will need to pay for either a part or the whole of the connection costs to the mains supply. As set out above, we have allowed for generic secondary infrastructure costs in our viability and developer contributions assessment. We have also allowed for “abnormal” development costs in this analysis. Consequently, where these costs are higher than our generic allowance, we have an additional “abnormal” cost allowance which has an impact on the viability of the development, and the level of developer contributions that could be secured. We explain more in section 5. This could mean that the development will not proceed until later in the plan period (assuming that values recover in the way that we are projecting).

How this study deals with flood remediation issues

2.20 In a similar way to utilities issues mentioned above, flood issues could either a) halt certain developments which were deemed to be too vulnerable to flooding, or b) mean that the necessary flood defence costs attributable to the developer would render a site economically unviable.

2.21 We have worked with the Environment Agency to understand both these issues at a PKDS level.

We deal with affordable housing costs through their effects on potential developer contributions

2.22 Although the point can be debated, affordable housing does not constitute infrastructure in its narrow sense. It is therefore not treated as such in this study. However, affordable housing requirements must be understood as part of an infrastructure study, because the levels of affordable housing demanded have a profound onward impact on the viability of development, and on amounts of developer contribution available from each PKDS to fund infrastructure.

- 2.23 We take account of levels of affordable housing requirements through
- our assessment of viability. Our viability work is based on assumptions on levels of affordable housing to be required in the West of England. These are to be provided at developers' expense. Expected levels of affordable housing have been provided to us, and are explained in section 5.
 - our assessment of potential developer contributions.

2.24 The costs of affordable housing are therefore "internalised" in our spreadsheet model.

Understanding the categories of infrastructure which are outside our scope

National infrastructure is beyond our scope

- 2.25 It is important to note that Circular 05/2005 states that the requirement for a developer contribution should be 'directly related to the proposed development' and 'fairly and reasonably related in scale and kind to the proposed development'.
- 2.26 The precise limits of what this might mean in practice were debated within Government in the course of preparing CIL guidance. We understand that the general approach adopted was that infrastructure that is commonly seen as a core competency of national Government was to be excluded from developer contributions. The exceptions were agreed to be the infrastructure provided by the Environment Agency and the Highways Agency.
- 2.27 We have therefore adopted this approach in our assessment. This means that areas of infrastructure provision which are the core competency of national Government and their agencies (say defence infrastructure, prisons and law courts) are excluded from this assessment.

Our approach to estimating the requirements of infrastructure for growth

- 2.28 This part of our work looks at the infrastructure *required* to support planned growth.
- This work focuses on the infrastructure requirements of future growth - meaning uncommitted growth from 2009-26*
- 2.29 This infrastructure assessment will focus on the infrastructure requirements of *future growth in housing and jobs* on the PKDS in the West of England area. In practical terms, this means that our assessment of infrastructure requirements, costs and funding will look at the infrastructure requirements of all planned growth that does not yet have planning permission (ie uncommitted growth) at the time of writing.
- 2.30 If development is already built, or has signed planning agreements (ie growth that is committed), then we have made the assumption that sufficient infrastructure is already in place. In a sense, we view growth that is built or committed as "water under the bridge", and instead try to understand what the infrastructure impact is of the growth to come.
- 2.31 Because it focuses on *growth*, this study does not deal with general infrastructure demand and public spending requirements as a whole from existing housing and jobs development.

We have not looked specifically at "historic infrastructure deficits". However, historic transport deficits are impossible to exclude

- 2.32 Some areas of the country have made the point that their infrastructure is already working beyond capacity. They argue that these "historic infrastructure deficits" should be made good before new growth can be put in place. Whilst these arguments may or may not be sound, broadly speaking, our approach has been to cover the infrastructure required to ensure that infrastructure loads are not *worsened* by new growth. Because this work may be a very early (but by no means sufficient) first step towards a CIL tariff, we have excluded any historic deficits. CIL guidance implicitly suggests that it would not be reasonable to use the infrastructure assessment to load the costs of general social change, or already existing infrastructure deficits, onto developers and landowners. Circular 05/05 says much the same thing about deficits.
- 2.33 There are nuances here, however. Whilst we've avoided incorporating historic deficits into our study, in the case of transport this is very difficult to achieve with great precision. Whilst we have been careful to focus on the transport needs of new growth, it is not always possible to disentangle the different impacts of a) trend rises in transport demand, b) housing growth, and c) historic deficits in the absence of specific transport assessments related to particular PKDS. It is also the case that, particularly in the case of transport, the level of historic deficit affects the timing of investment and prioritisation.
- 2.34 While our general approach has been to concentrate on the transport implications associated with growth only, historic deficits in transport should not be entirely "tuned out", as they can have a bearing on scheme deliverability, scheme timing and priorities.
- We have not formally dealt with demographic changes, but have taken these into account informally*
- 2.35 There are two demographic issues which need to be borne in mind with this assessment. The first is the changing demographic profile of the population; the second is the relationship between the provision of new housing stock and the population growth.
- 2.36 Typically, the UK population is ageing, although there are important exceptions. Changes in the demographic profile might mean that, for example, less education infrastructure was required. There is then the matter of the relationship between new housing stock, and population growth. It is often the case that some of the residents of proposed new houses will already live in the same local authority area. In areas where the average household size is reducing, an increase in housing stock may not result in a commensurate increase in the local population, even allowing for new occupants of the vacated houses. For example, new housing might cater for divorcees, or suppressed households, who previously lived in existing households within the West of England area. This reduces the extra pressure on the local community infrastructure as a result of the proposed development. It is therefore possible that jobs and housing growth may simply represent an alteration in the location of demand, or lower population densities.
- 2.37 Time and budget does not allow us to deal with these issues formally. We will therefore use demographic projections provided to us (eg on household sizes) to take broad account of these effects, and make the assumption that the population in the new housing is similar in profile to that in the existing housing.

2.38 We have relied on service providers being broadly aware of these issues (in some cases, such as education, an understanding of these matters is core to their work).

We have population projections for the partnership area, and have used these for household size information

2.39 Demographers looked at the increase in the number of projected households for the period. Changes in household sizes have also been modelled.

2.40 Within the West of England, the overall level of the population is projected to rise by some 192,000 between 2006 and 2026. This is made up of 37,000 in BANES, 54,000 in Bristol, 52,000 in North Somerset, and 49,000 in South Gloucestershire. This assumes that additional dwellings would be built between these years in accord with emerging proposals at 2008 in the Regional Spatial Strategy.

2.41 Where we need household size figures for our assessment, we have used quoted figures to take an average of the household sizes across 2011 to 2026, and applied this to the anticipated housing growth. On this basis, the West of England Partnership area has 2.23 people per household on average over the plan period.

Table 2.2 Average household sizes

	2001	2006	2011	2016	2021	2026	Change 2006-26	% 2006-26
West of England								
Married Couple Households	195,749	188,035	183,503	179,204	178,634	177,000	- 11,036	- 6
Cohabiting Couple Households	38,173	46,968	56,548	64,180	70,936	76,551	29,583	63
Lone Parent Households	27,196	31,356	34,148	36,476	38,741	40,659	9,304	30
Other 2+ person Adult Households	30,560	31,766	34,534	36,631	38,605	39,966	8,200	26
One-person Households	124,397	137,336	153,982	170,947	189,788	206,420	69,084	50
Total Households	416,075	435,461	462,714	487,438	516,705	540,596	105,135	25
Private Household Population	972,093	997,835	1,047,962	1,089,421	1,142,952	1,188,541	190,706	19
Average Household Size	2.34	2.29	2.26	2.23	2.21	2.20	NA	NA
Total Population	994,032	1,020,126	1,070,529	1,111,958	1,165,855	1,212,263	192,137	19
Communal Establishment Population	21,939	22,291	22,568	22,536	22,902	23,722	1,431	6

Source: West of England Partnership

We have avoided the “wish list” approach to infrastructure requirements

2.42 It is not desirable to load an infrastructure assessment with a gold-plated “wish list” of perceived needs. PPS12 is clear that Core Strategies need to:

- Have evidence of deliverability, with evidence strong enough to stand up to independent scrutiny;³ and
- Have evidence of “what physical, social and green infrastructure would enable the amount of development proposed for the area, taking account of its type and distribution”.⁴

2.43 The key concepts here are those of a) enabling development, and b) deliverability. Clearly, infrastructure provision should not be so elaborate and costly that it forms a barrier to development.

³ DCLG (2008) Planning Policy Statement 12 (17)

⁴ Ibid (8)

However, this does not mean that we have excluded large infrastructure projects on the grounds of cost. Some transport schemes, for example, are very expensive, but may bring large benefits. These schemes will have to go through the proper assessment process. It is not our role to exclude them at this stage.

2.44 In this assessment, we have tried to provide a pragmatic approach that balances deliverability with providing sufficient infrastructure to ensure the growth is properly catered for. It is not our proper role to barter with service providers in order strip infrastructure requirements or costs out of their plans. But we have tried to calibrate our method to help us gauge a realistic level of infrastructure provision, in the following ways.

- Wherever possible, our approach has been to work from first principles. We have provided service providers with a map showing the location and quantum of jobs and housing growth. We have invited them to explain what requirements they have, given this planned growth, and invited them to explain why this infrastructure is required. This process has built a realism and transparency into the approach.
- Our rough rule of thumb is that the infrastructure requirements for growth in this assessment should be broadly in line with the levels of infrastructure enjoyed by the rest of society.
- We have attempted, wherever possible, to take account of service providers’ existing spare capacity. We rely on service providers’ expertise here. This has the effect of reducing infrastructure requirements, and so their costs and funding requirements.

Service delivery is continually being reconfigured. Strategies change. This affects levels of infrastructure required to support new growth

2.45 In this assessment, we are aiming at a moving target. Public services, and hence the infrastructure they demand for delivery, are in a constant state of flux. For example, reviews of transport policy could have big implications for infrastructure requirements. Technology is likely to affect infrastructure requirements over the next few years in ways which may be difficult to predict. In other service areas, joint use community / education/ PCT buildings infrastructure are currently being examined, all of which alter infrastructure demand. Funding levels (and, consequently, legitimate infrastructure requirements) vary with political exigencies of the moment. Most service providers do not plan beyond three years, and so cannot by definition be expected to know their precise requirements in (say) ten years time.

2.46 This means that infrastructure requirements as a result of growth are difficult to predict and are necessarily subject to a considerable margin of error. The requirements listed in an infrastructure assessment should thus be kept under review and updated as important changes are introduced.

In most instances, the precise nature of growth is unknown - meaning that being precise about the required infrastructure is not possible

2.47 It is important to point out that we are dealing with infrastructure requirements at a high level. In the great majority of cases, we are working far in advance of detailed masterplanning work at the PKDS. In each instance, Environmental Assessments and Transport Assessments will be carried out that would map out likely infrastructure needs and costings in more detail and precision. We are therefore certain that more detail will emerge as the planning process proceeds, and that this detail will supersede the assumptions made here.

Our approach to estimating the costs of infrastructure for growth

- 2.48 Each subsequent section on service provision looks at the costs of infrastructure required for growth. The cost of infrastructure required for growth is just that - the capital costs of the infrastructure necessary to allow growth to take place.
- 2.49 Here again we explain our overall approach.
- We are quoting capital costs in this study*
- 2.50 Primary infrastructure is generally capital investment. We are therefore concentrating on capital investment in this assessment: after all, infrastructure is generally understood to be a capital item. In this we are following the spirit of the guidance of Circular 2005/05. It was (and, through policy discussions around CIL apparently remains) DCLG's view that capital costs would primarily be covered by developer contributions, with ongoing revenue costs being incorporated into service providers' budgets. The Government appears to wish to avoid significant planning contributions going to revenue funding: documentation on CIL shows the general direction of travel of the Government in this respect, and points out that planning contributions are primarily aimed at capital and not revenue expenditure.⁵
- 2.51 It is, however, the case that some agencies meet capital costs through revenue expenditure, for instance through leasing or borrowing, and that contributions to revenue costs are sometimes made through Section 106 contributions, and individual developer contribution payments on specific sites will no doubt reflect these requirements.
- 2.52 We are also aware that different agencies use different methods in generating cost figures. For example, some use whole life costs, whilst others use different accounting techniques.
- 2.53 CLG does anticipate that some commuted sums are paid by developers (for example, for SUDS maintenance, or "infrastructure substitutes" such as transport Smarter Choices schemes). However, these are locally very variable in cost, and are the subject to the outcome of individual negotiations. It is not possible to quantify these in a strategic study of this type.
- We've used service providers' cost estimates where possible, and "ready reckoner" figures where necessary*
- 2.54 Where possible, we have used service providers' own estimates of the cost of their infrastructure requirements. However, in many cases these estimates do not exist. In these instances, we have used various sources including case studies, published guides and interpretations of data from cost guides such as Spons and the Building Cost Information Service (BCIS). We have also used case studies and benchmarks from elsewhere when appropriate.
- 2.55 Where we have sourced costs figures, figures used do not allow for contingencies and internal project management costs but usually include professional fees (such as architects, surveyors, and so on). Costs are provided at current 2008 prices unless stated otherwise. They do not include VAT or any other tax.

Our approach to estimating the mainstream funding for infrastructure for growth

- 2.56 Our aim in these sections is to show the mainstream funding available for the infrastructure in question. We have a broad definition of "mainstream funding", by which we mean funding from the public purse via local and regional authorities, public agencies and central Government. This might include Private Finance Initiative (PFI), or special purpose funding such as Growth Infrastructure Fund (GIF).
- 2.57 It is important to note that, as we have pointed out above, these estimates are necessarily going to be subject to a relatively wide margin of error.
- We have assumed that service providers use mainstream funding to cope with the needs of growth wherever possible*
- 2.58 We start from the basic assumption that, where possible, mainstream funding should be used in the first instance to pick up the capital infrastructure requirements following a growth in population in a given area. We have adopted this principle in order to
- avoid the inefficiency, possible perverse incentives and lack of transparency caused when developer contributions are used to fund services which should be paid for by mainstream funding (see below in our remarks on double funding); and
 - free up more funding for service themes - such as open space and community facilities - for which there are often no obvious other capital funding streams.
- 2.59 This approach is important, because it works to reduce the funding shortfall overall that our model shows. It also tends to reduce the demands placed on developer contributions, because the assumption is that mainstream funding will be available to pick up costs rather than immediately turning to developer contributions for funding.
- Funding for some service providers is related to population - so as population grows, funding grows*
- 2.60 Some service providers have a funding formula which calculates funding by reference to population sizes. This means that as population grows as a result of new housing, their Government funding rises. However, this is not the whole picture: there are a number of components of these funding formulas (including factors such as population deprivation, rurality, and so on).
- 2.61 Service providers in this position include Education (which receives a local authority grant, but one ring fenced by central Government), Health / PCTs, Police, Fire Service, and the Ambulance Service.
- 2.62 Local authorities are also funded on a formula that includes population numbers and their characteristics. The services that local authorities provide (such as libraries and waste) can therefore be said to be at least partially funded on a per capita basis.
- We need to avoid "double funding" service providers - funding them once through the development process, and again from capitation-related mainstream funding*
- 2.63 Double funding occurs when service provider agencies that receive capitation based funding seek reimbursement from developers of the capital cost of providing facilities.

⁵ Work from the DCLG is implicit rather than explicit on this point. See DCLG (2008) *The Community Infrastructure Levy* para 2.19 onwards

2.64 We believe that this double funding has become increasingly common practice over the past few years, as more service public agencies have used Section 106 payments as a means of bolstering their budgets. In our view, developers have for the most part acquiesced to this in order to reduce uncertainty, expedite planning permissions and in the context of a situation in which the overall scale of demands made through Section 106 Agreements was more affordable during times when markets were strong.

2.65 Double funding is undesirable. In effect, one part of the economy is paying hidden subsidies to another part. This would artificially depress activity in one part of the economy (in this case the example might be house building and employment space development) and inflate it in another part beyond the level anticipated by either policy or strategy. Firstly, this is a textbook example of a cause of economic inefficiency. Secondly, whilst the effect of this process may be no bad thing, if this is the choice that society wishes to make, then it should be made explicitly and balanced against possible reductions in overall delivery of housing and employment.

Too much detail on funding can be obstructive. Our approach allows the necessary latitude to service providers

2.66 Too much detail on funding is actively unhelpful, for the following reasons.

- If service providers are going to make best use of their own resources, they will require the flexibility to juggle funding streams (whether S106, CIL, or mainstream funding). It would be counterproductive (and probably impossible) to effectively pin them down to specific investments and contributions. Too much detail could 'tie their hands' and lead to inflexibility if they need to juggle budgets to cater for slippages in overall programmes.
- Funding streams alter frequently, making commitment difficult and detail redundant.

2.67 As a result, in the spreadsheet model we provide, there is no direct read-across from specific infrastructure requirements (such as a school) to a particular funding stream. We treat mainstream public sector infrastructure funding on a service rather than geographical basis. An example helps: there may be new schools required on a particular PKDS, but because the LEA works across the whole UA, it is impossible to isolate the exact infrastructure funding that will be allocated to education on that PKDS.

2.68 Our work shows whether the new development is covered by mainstream public sector funding applied over a spatial scale by the relevant service provider. This will be based in part on service providers' views. These views may be subject to debate.

This assessment can only provide a strategic overview.

2.69 There are important caveats to be attached to this work

2.70 Our objective is to provide a focus for long term strategic financial decisions that will inevitably need to be refined and realigned as the process and time unfolds. The assessment is not intended to set out every piece of infrastructure required to support every single PKDS. As particular PKDS come forward, it is very likely that there could be localised issues and impacts, which are not within the remit of this assessment to cover. These will nevertheless need to be addressed to enable development to proceed. However, the process is valuable as it offers a framework highlighting the decisions and choices which will need to be made.

2.71 There are a number of important points which must be borne in mind when using this document.

- Infrastructure providers reserve the right to update the information provided to ensure that it is relevant and useful. As might be expected at this early stage in the process, there are gaps in knowledge and understanding of what is needed and how it might be paid for. This is a point appreciated by PPS12.⁶ The estimates will need to be refined over time. The assessment can, therefore, only ever be a snapshot of current infrastructure needs, commitments, options and ideas.
- Authorities are at different stages in the preparation of their LDFs and as such in many cases further work is needed to identify specific infrastructure requirements.
- The estimates of infrastructure requirements, costs and funding provided here involve a high level of spatial and temporal generalisation. Quite simply, it is not realistic to match resources to needs to places with the degree of precision necessary to reach sound decisions on what might make development viable or sustainable on any one given site or with any one service provider.
- This infrastructure assessment is not a policy document. Information included in the assessment does not override or amend the various agreed/adopted strategies, policies and commitments which local authorities in the West of England and other infrastructure providers currently have in place. In many respects the assessment reflects existing strategies, policies and commitments, but it also includes information and evidence which will help shape future policy making and investment decisions.
- Our assessment of potential developer contributions from the PKDS sites do not purport to offer a valuation of any particular piece of land. They were prepared with the objective of giving a high level indication of the potential amount of developer contribution which could be available from development to help fund infrastructure. They are not suited to any other purpose.
- It is not possible to translate our findings here into a Community Infrastructure Levy (CIL) charge, tariff figure, planning charge or Section 106 Development Study Document. This work can be seen as a very early step in work to develop an West of England-wide approach to CIL, Developer Contributions or Section 106 strategy, but more detailed inputs would be required at a local authority level before this work could be used for this purpose.
- Developers and Local Planning Authorities will not be able to use this work to negotiate Section 106 agreements. These estimates are not at the level of accuracy that allows this function to be performed. Instead, service providers' development contribution guidelines, policies and strategies and the development contribution practices and procedures undertaken by the County Council and local planning authorities should always be used.
- Our analysis says nothing about whether a five year supply of housing is available. This would need to be determined separately.

⁶ PPS12 states that that "the Government recognises that the budgeting processes of different agencies may mean that less information may be available when the core strategy is being prepared than would be ideal." DCLG PPS12 (9)

2.72 It is also important to note that, as we explain in section 4, the level of growth assessed by the study is drawn from the RSS Proposed Changes. The West of England authorities have major reservations about the ability of the sub-region to accommodate this scale of change. The Partnership and the local authorities have set out their concerns in their formal response to the Secretary of State and may exercise their legal rights in response to the Government's decision on the RSS.

3 STUDY CONTEXT: WHAT ARE PARTNERS' OBJECTIVES FOR GROWTH AND INFRASTRUCTURE? WHAT IS THE OUTLOOK FOR PUBLIC SPENDING?

Introduction

- 3.1 In this section we examine relevant policy objectives towards growth. This is not intended to be an exhaustive review and will instead concentrate on the key details which directly relate to the study in hand.
- 3.2 We have also briefly reviewed the broad outlook for public spending on infrastructure in this section.

Draft Regional Spatial Strategy and Proposed Changes

The draft Regional Spatial Strategy (RSS) sets the direction and quantum of growth that forms the basis for this infrastructure study

- 3.3 The emerging Regional Spatial Strategy acknowledges the growth potential of the West of England and many of the spatial priorities of the Partnership. The draft RSS agreed by the South West Regional Assembly in 2006 proposes that an additional 92,500 dwellings be provided in the West of England between 2006 and 2026. Proposed Changes to the draft RSS however have increased this requirement to 117,350 dwellings. The Proposed Changes to the RSS indicate that 36,500 homes are planned in Bristol, 32,800 in South Gloucestershire, 26,750 in North Somerset and 21,300 in Bath and North East Somerset. Although housing numbers have been revised substantially upwards since the draft RSS figures, the planned employment growth has not changed⁷.
- 3.4 The West of England Partnership has requested a reduction to this figure, based on major reservations about the ability of the West of England to accommodate the scale of change and the implied delivery rates proposed by the Secretary of State, without further consideration of the possible effects on sustainability, the environment and quality of life.

The draft RSS identifies a set of economic activity zones

- 3.5 These zones are based upon a typography of economic characteristics. The West of England is in the North East Triangle, along with Swindon and Cheltenham/Gloucester. This location contains one of the stronger local economies in the region with opportunities for further growth.
- 3.6 Within the SW, Bristol is considered the 'office capital' with over one million m² of office space and is ranked well above other regional centres. However, in common with many other SSCTs, over 60% of the office stock was built before 1980. This could prove a problem in attracting potential occupiers who may require more modern and adaptable stock.

The RSS sets the spatial strategy for the sub-region

- 3.7 The spatial strategy for the sub-region focuses new development on the main urban areas of Bristol, Bath and Weston-super-Mare. It seeks to achieve a more balanced pattern of development. We discuss the local priorities in more detail below.

Bristol: a better balance between homes and jobs is proposed and emphasis placed on expanding the role of the City Centre and regenerating South Bristol. Major urban extensions are proposed to the south-west, south-east and north and north-east

- 3.8 The scale and timing of housing growth in Bristol needs to be in step with economic growth to achieve a better balance between jobs and homes. The key strategic development issue for Bristol is to provide for growth while improving the attractiveness of the urban area.
- 3.9 A major strategic objective is to revitalise the South Bristol area which is characterised by some of the most significant concentrations of multiple deprivation in the region. This will require concerted action and investment including education and health, as well as transport infrastructure. In addition:
- There is significant potential to extend and develop the capacity of Bristol city centre for housing, employment and retail services
 - The cluster of retail uses at Cribbs Causeway serves both the northern part of the city as well as a wide catchment reliant on access by motorway. The current scale of retail facilities will meet the needs of planned population growth in the northern part of the SSCT and additional demand arising from growth should support a more even distribution of local centres around the urban area
 - The Bristol North Fringe is an important area of economic activity, much of it having been attracted by a skilled workforce and by motorway-based accessibility. It contains a nationally and internationally significant aerospace and advanced engineering cluster. Development in this location will support its important role in the economy of the sub-region, including proposals for a science park. The strategy is for predominantly for housing development in the North Fringe to balance the existing employment areas.
 - The Avonmouth/Sevenside area performs an important role in terms of manufacturing and distribution activity and, given its proximity to the port, has potential to develop its role further. However, much of the extensive area of land subject to a planning permission dating from the 1950s is at risk of tidal flooding, and development could also have a significant impact on the strategic road network. The area needs to be planned carefully and comprehensively to secure the most sustainable solution.
- 3.10 Substantial amounts of new housing will be required, within the existing urban area and urban extensions. These should be sustainable communities. There is considerable potential for urban extensions to the south west and south east of Bristol, including land in the City of Bristol administrative area, which can support and complement the regeneration of South Bristol. In South Gloucestershire three areas are identified for urban extensions.

⁷ The RSS uses a SHMA area for the West of England, which takes in part of West Wiltshire District in addition to the four Unitary Authorities making up the West of England Partnership.

Bath: expansion of the employment, service, retail and cultural roles of the city centre is supported and provision made for an urban extension to the south/ south-west of the City

- 3.11 Bath is recognised as being of international significance for its historic environment and as a cultural centre and tourist destination. There are strong commuting patterns between Bath and Bristol and with the towns and villages in north and east Somerset and the west part of Wiltshire, and these have put considerable traffic pressure on the city.
- 3.12 Development should achieve a careful balance between protecting and enhancing important environmental and cultural assets, and enabling the city to continue its economic, social and cultural development, including meeting housing needs. The key strategic development issue for Bath is to support continuing economic prosperity while accommodating sufficient housing to meet future needs in the city itself, rather than relying on dispersed provision in settlements beyond the green belt. This will assist in tackling damaging commuting patterns. To meet housing needs, the reuse of existing sites and buildings in the urban area will need to be accompanied by an urban extension.

Weston-super-Mare: employment led regeneration is proposed with housing growth to be phased and linked directly to job growth. Revitalisation of the town centre and seafront, and an urban extension to the south east of the town are proposed

- 3.13 Weston-super-Mare has experienced major restructuring in local industry and the tourism sector, and its economic decline is reflected in the relatively poor state of the town centre's retail and leisure offer. Major housing development has not been accompanied by commensurate employment growth and the imbalance between homes and jobs in the town is such that Weston-super-Mare is the least self-contained SSCT in the region. Job growth in Bristol city centre and at Bristol North Fringe has resulted in significant levels of unsustainable out-commuting from the town with significant congestion impacts on Junction 21 of the M5.
- 3.14 The key strategic development issue for Weston-super-Mare is to attract new investment and jobs to the town to address imbalances between employment and housing and the resulting out-commuting flows to Bristol. New development, both in the centre of town and in an urban extension, should be closely linked to job growth so that additional housing is not provided out of step with expansion of the economy and local employment⁸.

Yate and Keynsham: opportunities at both towns for housing and employment growth

- 3.15 Although physically detached from the main urban area, the towns of Yate and Keynsham have strong functional relationships with Bristol and form part of the SSCT. There are opportunities at both towns for housing and employment growth to strengthen their roles, so they can better serve their own populations and that in the surrounding areas.

Regional Economic Strategy (RES)

- 3.16 The RES sets out the need for economic growth within environmental limits and to take population growth as an opportunity. Delivery activities include delivery of sustainable sites and premises for business growth and the development of S-Park for Bristol and Bath is noted as recent progress.⁹
- The RES recognises the lead role of the West of England, particularly Bristol, as a city-region of international-significance*
- 3.17 It also recognises the deprivation in parts of Bristol, particularly around low skills, unemployment, poor housing and poor health. Delivery activities include support for areas with the greatest levels of multiple deprivation, as well as renaissance of the SW's largest cities and reducing congestion.
- The RES makes the point that there is an important economic rationale to an efficient infrastructure system*
- 3.18 Congestion in Bristol is seen as a major transport challenge, constraining economic growth. It states that "strong and sustainable regions have a comprehensive and efficient communications infrastructure. Perceptions about transport and communications within and beyond the region are critical factors in private sector investment and location decisions. The work on regional productivity highlighted issues around connectivity and access to markets".¹⁰

West of England Partnership

The West of England vision and ambitions

- 3.19 The West of England vision is that "By 2026 the area will be one of Europe's fastest growing and most prosperous sub regions which has closed the gap between disadvantaged and other communities, driven by major developments in employment and infrastructure improvements in South Bristol and North Somerset." Specific ambitions for the West of England include:¹¹
- Regeneration of South Bristol including homes, jobs and infrastructure
 - Employment-led sustainable community regeneration in Weston-super-Mare
 - A major mixed-use regeneration project at Bath's Western Riverside
 - Substantial transport investment (£250m over the next ten years), starting with the £66m Greater Bristol Bus Network
 - Development of a new Science Park (S Park)
 - Around 46,250 additional homes by 2016, up to 30 per cent affordable
 - Knowledge, technology and leadership are at the heart of successful cities. This means increasing investment in infrastructure, culture and regeneration.

⁹ The Regional Economic Strategy⁹ (RES) has three strategic objectives 1) Successful and competitive businesses; 2) Strong and inclusive communities - this includes regenerating disadvantaged areas and investing in successful and dynamic cities; 3) An effective and confident region - this includes improved transport networks.

¹⁰ SWRDA (2006) Regional Economic Strategy for South West England (10)

¹¹ <http://www.communities.gov.uk/housing/housingsupply/growthareas/newgrowthpoints/newgrowthpoints/southwestgrowth/westengland/>

⁸ The MAA indicates that the employment-led strategy for Weston Regeneration Area envisages an average of 1.5 jobs per home by 2026 and that with the current deficit of jobs, it is necessary for 2.4 jobs to be provided per home in the early years.

- 3.20 The West of England sub-region was named as a first round growth point and awarded growth point status by CLG in October 2006. The partnership was awarded £23.8m for 2008/9-2010/11.

Multi Area Agreement 2

- 3.21 The Multi Area Agreement (MAA) sets out some of the West of England Partnership's priorities.¹²
MAA notes that the current economic recession has caused a dramatic reduction in development and job opportunities
- 3.22 MAA states that the recession will need to be considered in finalising the RSS. In the medium term it is still envisaged that housing growth in the sub-region will be substantial. However, short-term housing targets will need to be revised downwards, and the authorities continue to reserve their right to challenge levels of growth in the Government's Proposed Changes to draft RSS.
- 3.23 The current economic recession potentially affects the viability of sites currently coming forward though the planning process and there is pressure from developers to dilute the requirements to provide appropriate infrastructure, to reduce the level of affordable housing and to compromise on standards of sustainable construction.
- 3.24 Whilst the MAA states that the West of England authorities will work positively with developers to examine whether some flexibility around the exact nature or timing of Section 106 contributions might assist in bringing forward development, they are unwilling to compromise on the longer term objective of delivering sustainable communities.
The MAA refers to the draft 2009 West of England Strategic Housing Market Assessment which shows an increasing need for affordable housing
- 3.25 The MAA indicates that the planning system cannot be the only source of new affordable housing and that there is a need for other interventions to support RSLs.
MAA sets out how growth can be used to address disadvantage
- 3.26 Growth can providing opportunities for employment, facilities, services, homes and education/training. The West of England's strategy for development aims to
- Secure the prosperity of its SSCTs
 - Regenerate areas that failed to benefit from past housing and employment growth
 - Minimise growth on greenfield and Greenbelt locations

¹² The MAA is a set of five priority 'outcomes'. 1) To mitigate the impact of the current economic recession and act to support an early upturn, including modifying proposed development that does not deliver mixed and sustainable communities and consider other means to finance essential infrastructure where S106 is inoperable under current market conditions; 2) To plan and manage the growth in homes and jobs in order to build mixed and sustainable communities, including strategic area investment frameworks, level 3 of the Code for Sustainable Homes, and promotion of investment in stalled sites; 3) To improve access and reduce traffic congestion to increase competitiveness and quality of life, including proposals to speed up the approval process for projects up to £10m and bring forward projects through shared risk arrangements, more formal arrangements with Network Rail, rail operators and the Highways Agency to reduce constraints; 4) To attract and grow business investment to increase economic growth and competitiveness, including joint investment planning to bring forward strategic employment locations; 5) To improve skills and reduce worklessness to increase competitiveness, growth and regeneration.

MAA Spatial Priorities

The successful regeneration of South Bristol is an immediate high priority

- 3.27 The MAA notes that development will include programmes of estate renewal in Knowle West and brownfield land regeneration at Hengrove Park will create denser, more sustainable communities supported by diversifying land use to bring homes and jobs closer together and a socio-economic mix to stimulate local economies. This will help address imbalances in employment opportunities and travel to work patterns in the city that have arisen as a result of extensive development on the north fringe of the Bristol urban area. It will also improve the current poor retail and service provision in the area and provide a focus. The regeneration of South Bristol will require the release of lower 'value' open space sites and reconfiguration of poor quality urban form to support better comprehensive redevelopment opportunities. This would result in better quality open space and a mix of different housing types and tenures.
The MAA identifies comprehensive approaches to regeneration
- 3.28 The MAA identifies comprehensive approaches to regeneration for the "Northern Arc" and the 'Inner City/East'. Growth and regeneration in these areas will focus on providing higher-density development in existing centres and in accessible areas.
- 3.29 The biggest housing and regeneration project in central Bath is the Bath Western Riverside. This requires relocation of some existing uses, access improvements, cultural facilities, renewable energy infrastructure, flood attenuation and skills development. This area has a significant gap between development costs and values. The lower Bristol Road area is another area of potential major change, with a lack of coherence and inefficient land use.
- 3.30 The regeneration priorities for Weston-super-Mare are to stimulate retail, leisure and subsidiary residential development in the town centre and to ensure that the urban extension (3,000 homes in the town centre and 9,000 in the Weston Regeneration area) is high quality, sustainable and employment-led. There is a strategic objective of 1.5 jobs per home by 2026, which will require 2.4 jobs per home to make up for the deficit. The key strategic issues are flood alleviation and management, transportation and site remediation.
- 3.31 The planning and development of the urban extension will take into account plans for the regeneration of South Bristol.
- 3.32 Possible development in the east Fringe of Bristol (proposed Area of Search C in the draft RSS) is recognised as challenging. South Gloucestershire points out issues with loss of Green Belt, the difficulty of integrating rural communities into urban ones, the lack of existing job opportunities and the need to provide new ones and the need for the provision of major new transport infrastructure.
- 3.33 The North Fringe development needs to balance housing and jobs to create the character and facilities of a modern urban area. Significant investment is needed in public transport.
- Cribbs Causeway/Filton development is within the urban area but will need to be balanced with protection of Filton Airfield and aerospace jobs. It will also require integration with existing communities as well as access to services and transport links
 - The proposed Area of Search D (M32) extends the development already planned for Harry Stoke. It would be primarily housing.

- 3.34 The East Fringe has limited open space, declining traditional retail centres and pressure for development on infill sites. Levels of employment are relatively low and small businesses squeezed out by housing development. There is a need to protect employment sites and achieve a better balance between homes and jobs.
- 3.35 Avonmouth and Severnside are strategic employment sites. The main issues are flood risk, biodiversity, extant planning permissions and transport .
- 3.36 The objective for the proposed Urban Extension at Yate would be to enhance the self containment of Yate /Chipping Sodbury.

Transport Policy

National policy seeks to reduce transport and consequent demand for new infrastructure

- 3.37 Planning Policy Guidance 13 (1994 - revised in 2001) followed by A New Deal for Transport in 1998 and the White Paper Transport 10 Year Plan 2000 set the context and direction for transport policy in the UK. The policies demonstrated that unrestrained growth in road traffic was neither desirable nor feasible based on concerns related to rising congestion levels, the effect of road traffic on the environment (both natural and built) and worries that an emphasis on road transport discriminated against vulnerable groups in society such as the poor, the elderly and the disabled.
- 3.38 Government transport policy is also set out in the White Paper entitled "The Future of Transport: a network for 2030" (July 2004), indicating how the Government will maximise the benefits of transport while minimising the negative impact on people and the environment. The Government is seeking a coherent transport network that can meet the challenges of a growing economy and the increasing demand for travel
- 3.39 More recently Developing a Sustainable Transport System (DaSTS)¹³ has responded to the Eddington transport study, which looked at the long-term links between transport and the UK's economic productivity, growth and stability; and the Stern Review, on the economics of climate change. The DaSTS ethos is to achieve five key goals:
- To support national economic competitiveness and growth, by delivering reliable and efficient transport networks
 - To reduce transport's emissions of carbon dioxide and other greenhouse gases, with the desired outcome of tackling climate change
 - To contribute to better safety, security and health and longer life expectancy by reducing the risk of death, injury or illness arising from transport, and by promoting travel modes that are beneficial to health
 - To promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society
 - To improve quality of life for transport users and non-transport users, and to promote a healthy natural environment

Regional policy on transport infrastructure refines and applies the national approach

- 3.40 Transport policies and objectives in the Government framework have been refined through the regional and sub-regional planning process. The Regional Transport Strategy (RTS)¹⁴, which supports the Regional Planning Guidance for the South West (RPG10) provides a series of five regional transport objectives:
1. Support the spatial strategy of RPG 10 and to service existing and new development efficiently and in an integrated fashion
 2. Reduce the impact of transport on the environment..... which is increasing as a result of growth in road traffic, noise and pollution, by:
 - Reducing the need to travel, encouraging travel by more sustainable means (especially by walking and cycling)
 - Locating development at accessible locations, particularly by public transport
 - Achieving environmental improvements by directing investment to those locations where infrastructure is required to offset the damaging effects arising from the impact of traffic and transport
 3. Secure improved accessibility..... to work, shopping, leisure and services by public transport, walking and cycling
 4. Create a modern, efficient and integrated transport system..... that will meet the demands of a dynamic regional economy, help overcome regional peripherality and meet all travel needs.
 5. Ensure the safe use of the regional transport network.....and its associated facilities.
- 3.41 Notably the draft RSS does not specify the transport and other infrastructure required to enable delivery of the proposals for growth.

'Our Future Transport' sets the transport vision for the West of England to 2026

- 3.42 The future vision and identification of the allied strategic transport needs for the West of England area is confirmed by 'Our Future Transport'¹⁵ and updated by 'Our Future Transport - The Update'¹⁶. The vision aims to:¹⁷
- Reduce the need to travel, promote cycling and walking and the use of public transport through short term measures including bus corridors, park and ride schemes and real time information systems and through longer term measures including innovative schemes such as alternative rapid transit and ways to discourage car use.
 - Secure a strategic road network that:
 - Improves access to, and movement in and around south Bristol;

¹³ Delivering a Sustainable Transport System: Main Report (Nov 2008). DfT

¹⁴ South West Regional Assembly: RPG10 Note: The Secretary of State withdrew recognition of the South West Regional Assembly as Regional Planning Body with effect on and from 8 May 2009. The function has now been replaced by the South West Strategic Leaders' Board (the executive arm of South West Councils).

¹⁵ WEP: 'Our Future Transport - West of England Sub Region'. October 2007

¹⁶ WEP: 'Our Future Transport - The Update'. March 2008

¹⁷ West of England Vision to 2026

- Provides efficient links between Bristol International Airport and Bath, Bristol and Weston-super-Mare;
- Improves connectivity to the motorway network in North Somerset and South Gloucestershire;
- Reduces road congestion and local traffic on the motorway network;
- and as a result increases business investment, economic growth and productivity, accelerates regeneration and improves the local environment.
- Secure an increase in rail capacity to strengthen public transport by:
 - Improving rail access to Weston-super-Mare to support the regeneration of the town and the development of Employment land at RAF Locking
 - Ensuring a passenger rail link between Portishead and Bristol and improving services to suburban stations.
- Secure a local link between Avonmouth and Portbury to support the expansion of the Port and to reduce local traffic on the motorway.

The future transport vision has been drawn from GBSTS

- 3.43 The Greater Bristol Strategic Transport Study (GBSTS) published in June 2006 underpins the future transport vision. GBSTS identified the strategic transport improvements needed for the Greater Bristol area to 2031 and confirmed the considerable investment required to cope with predicted growth.
- 3.44 Crucially GBSTS pointed to the fact that much of the investment was necessary before 2016 simply to deal with existing issues and that even with a strong package of public transport investment and demand management, car use is projected to increase.
- 3.45 The study was linked to spatial development scenarios supported by a network of bus based rapid transit routes, smarter choices and new transport links. While the housing and employment figures tested have since increased, the identified transport infrastructure need remains.
- 3.46 The authorities forming the West of England Partnership (WEP) have worked closely to take policy forward to develop a Joint LTP submission (JLPT2); this is drawn from GBSTS.

South West Regional Assembly - Infrastructure Planning

- 3.47 SWRA has recently issued an Infrastructure Planning Advice Note that confirmed the necessity of a sub-regional approach and specified:
- The importance of early corporate, cross-departmental and cross-organisational sign-up, based on strong Local Authority leadership and capacity
 - The need for clear links with the Sustainable Community Strategy's Vision
 - The role for an iterative and on-going process, including contingency and alternative scenario planning

- The need to deal with difficult infrastructure prioritisation decisions based on strategic fit, significance within the overall vision, deliverability, value for money and contribution to critical interdependencies and sequencing.¹⁸

- 3.48 The Advice Note also reviewed funding routes such as S106, the Community Infrastructure Levy (with its cross boundary funding opportunities), the SW Regional Infrastructure Fund, Local Infrastructure Finance Trusts and Local Education Partnerships.

What is the outlook for public funding?

Public infrastructure funding will be cut back hard in coming years

- 3.49 The central Government response to the credit crunch has had a very large impact on the public finances. Recent work by Price WaterhouseCoopers projects a £43bn pa fiscal gap by 2013/14. This will have to be plugged over time. A number of scenarios were set up to investigate how this might take place. Assuming NHS and education were to keep their public spending gains of recent years, all other spending would have to receive three years of 3% pa spending cuts. Areas cut would include police, local government support, and social care.
- 3.50 Clearly, this will have a large and ongoing effect on the ability of central Government to fund infrastructure investment. Following the budget, the FT pointed out that "public spending is set to fall from 48 per cent of national income, a level not seen since 1982-83, to 39 per cent in 2017-18...the numbers amount to the most sustained squeeze on the public sector in decades. For all the talk of infrastructure, public sector capital investment will be halved in cash terms from £44bn this year to £22bn in 2013-14."¹⁹

Price WaterhouseCoopers note that there is a need for a "transformational" Government efficiency drive

- 3.51 A number of PwC's recommendations have significant delivery implications for this study.
- Collaborative procurement. Nationally, Price WaterhouseCoopers estimate that this could result in of potential savings of £24 billion by 2015/16. The West of England Partnership could be the forum through which some of these collaborative procurement decisions are made.
 - Property and facilities. Price WaterhouseCoopers estimate of potential savings of £5 billion by 2015/16. Property is a business asset that benefits from a collective approach. A collaborative geographical approach would provide a manageable scale, and enable both delivery at a local level and cross-sector working to support a variety of policy initiatives.

¹⁸ We see from the SQW Sub-regional Delivery Plan that the West of England Partnership is the prioritising body and that prioritisation can be spatial, thematic or project by project (Part 2, Ch 9)

¹⁹ FT, April 22 2009 Chris Giles, Economics Editor. *Q&A: The Budget in Numbers*

4 WHAT IS THE PLANNED GROWTH WE ARE PROVIDING INFRASTRUCTURE FOR?

Introduction

- 4.1 In this section we explain what jobs and housing growth we are providing infrastructure for. This is important, as this assessment must start from an agreed set of assumptions about housing and jobs growth.
- 4.2 We have set out the overall growth for the West of England proposed in the RSS and how it has been represented in the Multi Area Agreement for the West of England. We then set out how part of this proposed growth may be delivered through the Priority Key Development Sites that we have been asked to consider within this study.
- 4.3 The first part of this discussion relates to the housing growth. The second part relates to the employment growth.

Where is housing growth located? How is it phased?

The level of housing growth in RSS Proposed Changes is contested

- 4.4 The level of growth assessed by the study is drawn from the RSS Proposed Changes. The West of England authorities have major reservations about the ability of the sub-region to accommodate the scale of change shown by the Proposed Changes without further consideration of possible effects on sustainability, the environment and quality of life. The Partnership and the local authorities have set out their concerns in their formal response to the Secretary of State and may exercise their legal rights in response to the Government's decision on the RSS.
- 4.5 On 25th September 2009, the Government advised that a new Sustainability Appraisal of proposed Changes to the RSS is to be undertaken to ensure that alternatives to its proposals are properly tested. This further work is to be completed early in the New Year. The Government will then decide what actions to take to progress the Strategy.

Without prejudice to the reservations above, the starting point for this study is the RSS Proposed Changes, which covers all sites in the West of England from 2006 to 2026

- 4.6 RSS Proposed Changes and sets out the spatial distribution of the proposed housing growth in the West of England (including parts of Wiltshire and Mendip)²⁰. These proposed changes set out that in the West of England HMA provision will be made for:
- Growth of about 137,200 jobs
 - Growth of at least 137,950 homes

²⁰ The South West Assembly published the draft South West RSS for consultation in June 2006. An Independent Panel held an Examination in Public about the draft RSS between April and July 2007, and their report setting out recommendations to change the draft RSS was published in January 2008. The Secretary of State has now considered the Panel report and has published a set of Proposed Changes to the draft RSS for further consultation. Please note that the RSS uses the West of England Housing Market Area as the spatial unit. This includes parts of Wiltshire and Mendip District in Somerset, outside our study area.

- 4.7 The housing growth is distributed between the local authorities as detailed in the table below:

Table 4.1 Housing Growth in the West of England HMA (also showing West Wiltshire and Mendip)

Area	New Housing
Bristol	36,500
South Gloucestershire	32,800
North Somerset	26,750
Bath and North East Somerset	21,300
West of England Partnership Area	117,350
Sub-total	
West Wiltshire	12,300
Mendip	8,300
West of England HMA Total	137,950

Source: RSS Proposed Changes

- 4.8 The RSS proposes 117,350 new dwellings 2006-26 for the West of England Partnership. The MAA identifies the key locations for about this quantum of growth (116,395 dwellings), which include the PKDS discussed in section 2 of this report.²¹ Most of the locations are part of the PKDS forming the focus for this study and we have indicated by shading the locations not included.
- 4.9 A table detailing this trajectory has been provided as Appendix 1.
- We focus in on a sub-set of this data. We look at future growth without planning permission ("uncommitted growth") in the Priority Key Development Sites only*
- 4.10 The housing growth set out in the RSS is spread over the plan period 2006-2026. As set out in section 2,
- We are only looking at the PKDS, not all of the sites in the West of England. However, the PKDS form the great majority of sites for growth in the West of England: overall the PKDS are expected to deliver housing growth of 104,597 between 2006 and 2026, forming 89% of the total Proposed Changes RSS target for the West of England.
 - Our study is focussed on the housing that has not yet been built or with planning consent within specific parts of the sub-region.²²

²¹ The Multi Area Agreement 2 (MAA) version 3 contains housing numbers based on the RSS Proposed Changes and this has provided us with starting point for the housing growth trajectory used in this assessment.

²² Unless it is clear that the planning consent in its present form will not be implemented

4.11 These numbers are shown in the shaded column of the table in Appendix 2. The table also provides data on the build out anticipated over the full 2006-26 period.²³

Employment growth expected for the West of England

The RSS sets out plans for employment land. We have used WEP estimates of employment space proposed for the PKDS

4.12 The West of England Partnership has undertaken a preliminary assessment²⁴ of how RSS job growth and employment land targets for the West of England may be achieved, including the role that may be played by the PKDS.²⁵

4.13 The assessment considered:

- The implications of delivering RSS job targets for the broad pattern of business development across the sub-region over the future, taking into account employment projections consistent with the RSS targets, the types of locations required by business, the role of existing business locations and development allocations in meeting future business site requirements and planning priorities
- The role of the proposed urban extensions in meeting any shortfalls in opportunity to meet business development requirements
- The pattern of job growth across the sub-region arising in the context of RSS growth levels, the conclusions drawn about the levels and patterns of business development and the expansion of local and other services

4.14 This work has provided us with some rough levels of employment land growth to inform our assessment of necessary infrastructure. We have included it as Appendix 3.

4.15 We have used this work in discussion with WEP, combined with input from the Unitary Authorities to estimate the employment space proposed for the PKDS. This should be considered as a snap shot for this study, based on work in progress, and have been derived from an initial technical exercise. These are initial assumptions which may be subject to change as work continues. The figures discussed below represent the estimated uncommitted employment space - i.e. excluding space already constructed or with planning permission.

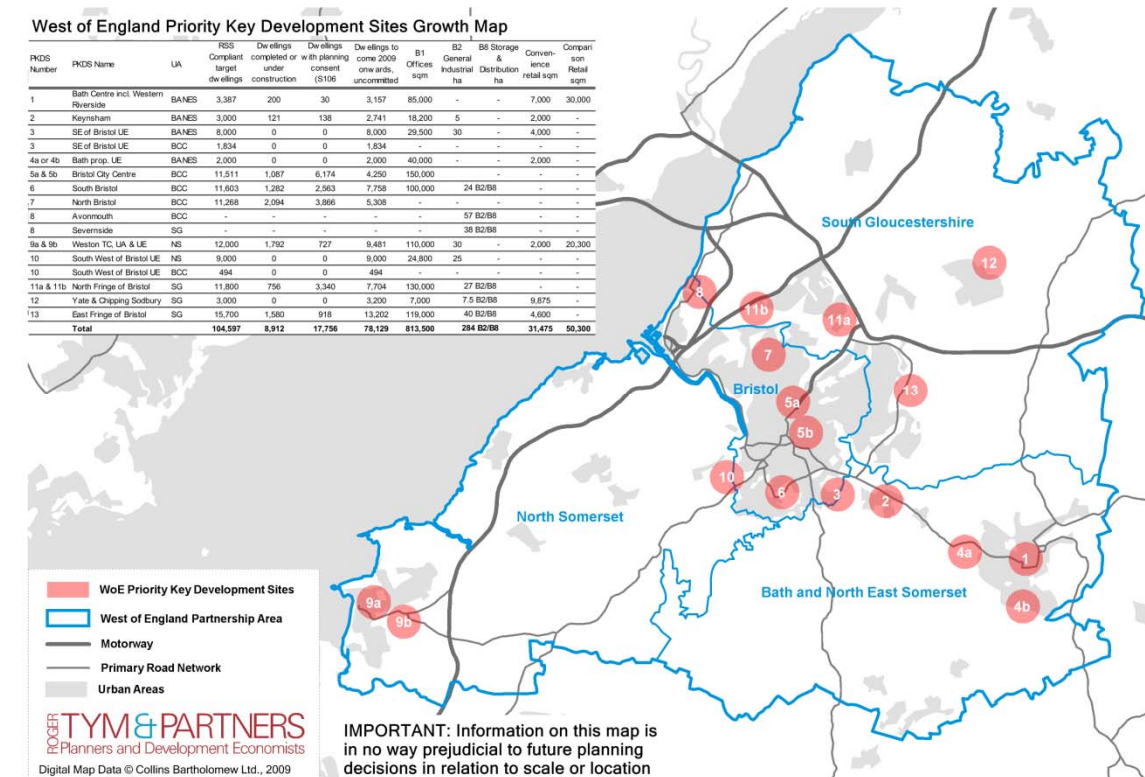
4.16 Overall the PKDS are expected to deliver 813,500 sqm office floorspace, 284 ha of B2/B8 uses, and at least 31,545 sqm of convenience and 50,300 sqm of comparison floorspace. The table below summarises the new employment floor space by Unitary Authority. The RSS targets included 425 ha

of employment space and the B2/B8 uses will account for 67% of this, plus the land take for the office and retail development.

Mapping housing and jobs growth in the PKDS

4.17 We have pulled together plans of housing and employment space growth at the PKDS as follows.

Figure 4.1 PKDS Planned housing and employment growth



Source: RTP/MAA/West of England Partnership

²³ Unitary Authorities with the West of England Partnership have provided the following figures for each of the PKDS: The RSS compliant target dwellings 2006-26; the dwellings completed or under construction since 2006m which is often based on 2008 annual monitoring figures; Dwellings with planning consent and their expected annual run rate; the uncommitted dwellings forming a) the balance between the developed/committed and the target and b) the focus for this study

²⁴ West of England Partnership, 2009, Meeting targets for business sites and job growth - a sub-regional assessment

²⁵ The draft RSS sets out that planning for employment will provide for 92,000 jobs in the Bristol TTWA including the provision of about 352 ha of employment land; 20,200 jobs in the Bath TTWA including the provision of about 39 ha of employment land; and 10,000 jobs in the Weston-super-Mare TTWA including the provision of about 34 ha of employment land.

5 HOW MUCH DEVELOPER CONTRIBUTION WILL JOBS AND HOUSING GROWTH CREATE? HOW VIABLE IS HOUSING GROWTH?

Introduction

- 5.1 Given the planned growth explored in the section above, in this section we use some high level assumptions to look at what level of developer contributions could potentially be secured from employment and uncommitted housing growth in the PKDS to help fund infrastructure. This analysis forms part of the overall assessment of infrastructure funding, which contributes to our findings discussed in section 9.
- 5.2 At this point, it's important to reiterate the caveats we have put in this report. The assumptions we use to look at developer contribution and site viability here may not be correct in each individual instance. Indeed, there is certain to be a very significant margin of error. However, it is not our objective to value any individual site. Instead, our work intends to create a strategic overview on the ability of sites to bear developer contributions. Our work on determining developer contributions here allows us to explore the rough parameters of when development is likely to be viable, and what developer contribution it might generate. It should not be relied on for advice or predictions about outturn on any individual site.
- 5.3 Housing viability will be a key factor to consider when assessing the likely realistic trajectory of housing development in the PKDS, and forms part of our "traffic light" analysis in sections 10 and 11.

What are the key issues that affect viability and potential developer contributions?

What is financial viability?

- 5.4 Development in the PKDS by the private sector will only usually be undertaken where it is considered financially viable - ie. where a development is assessed to generate a sufficient return²⁶.
- 5.5 It should be noted that an assessment of return will be undertaken on a regular basis, particularly before important decisions in the development process. Examples of such points are when assessing how much to pay for land at the start of the process, negotiating a Section 106 agreement, and when actually committing to site preparation and construction works. The scheme therefore needs to be assessed as financially viable, based on the developers required return, at each stage of the process for development to be delivered.

Developer contribution requirements affects viability

- 5.6 The assessment of financial viability should include an assumption on developer contribution requirements. This contribution is traditionally secured through a Section 106 agreement attached to

the planning permission. Developer contribution requirements, particularly affordable housing, will affect the financial viability of development. A scheme can be financially viable where it is not required to contribute to, for example, strategic infrastructure requirements such as transport and education that arise from the development, but unviable where it is.

- 5.7 Conversely, a development could contribute more than is required, and is justifiable by the local planning authority (LPA), and still be viable. For example, where a large strategic development site has been optioned (rather than acquired) by a developer, contribution requirements can usually be passed on to the landowner to an extent, through a lower land cost.

Some variables have a greater impact on viability than others

- 5.8 However, there are still a number of market and site specific factors that will also affect viability, some to a much greater extent. It is important to recognise that small differences in the level of planning contributions do not have a major impact on development viability when compared with, for instance, changes in the value of the completed development, the impact of affordable housing and layout requirements and costs involved in dealing with adverse ground conditions.
- 5.9 For example, a £1,000 difference in the level of planning contributions per dwelling might only involve a net difference of £50,000 per hectare on the land value, depending on the density, on a typical residential site. This will have a significantly lower impact on viability than a 1% increase in house prices.

The recession is having far reaching effects on house prices, demand and borrowing

- 5.10 The general effects of the recession on the housing market are now well known and we have not therefore provided a detailed analysis of these. In short, house prices and demand have fallen significantly nationwide, and the West of England is no different.
- 5.11 Falling values are making previously viable development schemes currently financially unviable. The recession has also reduced demand for new houses. This is affecting how quickly houses can be sold and therefore a developer's "cashflow" i.e. the timing of income and costs. Finally, access to capital has been severely restricted and the financial condition of developers will impact on whether they will be able to bring forward development.

A major determinant of development viability is the existing use value of a site. This is often relatively high in the case of urban sites

- 5.12 A key determinant of viability is the existing use value of the site.
- 5.13 The existing use value of traditional "greenfield" land is agricultural. The current value of agricultural land in the South West according to the Valuation Office Agency (VOA) is approximately £17,500 per ha (excluding farm and other buildings).²⁷ Although a landowner will require a significant value uplift to sell the land, typically between £250,000 - £500,000 per ha on the grant of planning permission, this is still often substantially less than the value of urban development sites where there is an existing use. In particular, where there are useable buildings still on a site, this can produce a

²⁶ Developers have different criteria for assessing return. Many smaller developers assess the margin on cost of a development, while larger housebuilders assess the return on capital employed.

²⁷ As at 1st January 2009

relatively high level on a per hectare basis in comparison with greenfield sites, even if the rental values on the buildings are relatively low. For example, land with older but functional existing industrial built to a typical plot ratio of 70% could be worth in the order of at least £3m per hectare.

- 5.14 Where a Compulsory Purchase Order (CPO) is required to assemble a site in multiple ownership, these costs can be significantly higher. Such costs can prove a significant barrier to development, and can often render sites unviable without vastly reduced planning requirements and/or public sector gap funding.

If land has already been acquired, the structure of any agreement is critical to both viability and higher levels of developer contributions

- 5.15 Development land acquired before the recession did so in a climate of rising house prices. Land values also rose to reflect an assumption this trend would continue in the future, or at least were relatively high on the basis that house prices would maintain those levels. As developers were actively buying land, land was transacted at these high prices.

- 5.16 Land values have now fallen to reflect the new economic and development conditions. The VOA reported residential land values at January 2008 of between approximately £2.75m - £3.75m per ha in the South West, in comparison to between approximately £2m - £2.5m per ha in January 2009. Indeed, this data is historic and may understate the fall in the value as there are limited transactions.

- 5.17 The problem for developers who acquired land at a higher price than current land values, is that it is currently unprofitable to undertake development on those sites; the land cost was fixed at pre-recession levels, but the value they currently expect to generate from development on the site in the short-medium term has fallen significantly.

- 5.18 DCLG and VOA evidence from the 1990s shows that the percentage fall in housing land values greatly exceeded the percentage fall in house prices²⁸. Land values did not recover to their previous levels for around a decade. Even if house prices return to previous pre-recession levels, assuming other variables remain relatively constant (e.g. build costs), development will largely take place first on sites already acquired by developers. Although developers won't wish to exhaust their "land banks", they may need to undertake development at lower return margins on existing sites.

- 5.19 There are broadly three key factors relating to land acquisition that will affect viability and potential ability of the development within the PKDS to contribute towards infrastructure:

- Whether the land acquired at the peak of the market,
- Where the site has been "optioned", whether higher costs and/or lower income be passed on to the landowner rather than the developer, and
- Where the site has not yet been acquired or optioned by a developer, or is being sold by a developer, whether land values sufficient for the landowner to sell.

Some sites may have high abnormal costs which could render them unviable

- 5.20 Different development sites incur different types and levels of costs. In the case of new development, all sites will incur costs such as site preparation, build costs, external works and professional fees. These are known as "normal" development costs.

- 5.21 However, costs such as decontamination, major utilities servicing works, demolition, drainage and flood protection are not common to all development sites. These are known as "abnormal" development costs.

- 5.22 The level of "abnormal" costs can be the difference between a development site being viable and unviable. While site preparation and secondary infrastructure costs are typically in the region of £250,000 per ha, abnormal costs can vary considerably from nothing on a straightforward greenfield site with no issues, to over £2m per ha on brownfield sites with a number of major issues. For example, we are aware there are gas holders at Bath Western Riverside and the costs of removing these holders, and the associated decontamination, on its own is likely to be substantial. However, most brownfield sites are likely to have lower abnormal costs than this.

Planning obligations impact on development viability

- 5.23 Planning obligations, such as affordable housing, sustainability and contributions to infrastructure can all have a significant impact on the financial viability of development.

- 5.24 For example, the effective (or opportunity) cost to a developer of providing an affordable housing unit in place of a private unit may vary between approximately £50,000 and £150,000 (depending in particular on the size, value of unit and grant funding level). Assuming an effective cost of an affordable house of £100,000, this means in a small development of ten units where three are affordable would cost a developer £300,000 in lower sales value from these units than private units.

- 5.25 Finally, higher sustainability requirements can result in significantly higher build costs for developers. DCLG's Cost Analysis of The Code for Sustainable Homes (July 2008)²⁹ estimated a cost increase of 37% for Code Level 6 from general build costs at that time. Carbon emissions standards are to be progressively tightened up to 2016. Energy efficiency standards reflected in Code 5 were chosen as a sensible mid-point.³⁰

Our approach to assessing developer contributions from housing and housing viability

- 5.26 A detailed explanation of our methodology is set out in Appendix 4. However, we summarise the key points below.

²⁸ The steeper fall is because land values are the result of subtracting the anticipated costs of development from the anticipated receipts. So therefore if, say, the price of land absorbs roughly one quarter of receipts from house sales, and if those receipts fall while costs stay the same, the value of land might be expected to fall four times as fast as house prices. In reality it doesn't quite play out that way and at certain stages the value of land 'undershoots' what might be expected on the basis of house prices in the same way as it can 'overshoot' at other points in the cycle.

²⁹ <http://www.communities.gov.uk/publications/planningandbuilding/codecostanalysis>

³⁰ DCLG (2007) *Building a Greener Future* This policy statement confirms the Government's intention for all new homes to be zero carbon by 2016 with a major progressive tightening of the energy efficiency building regulations - by 25 per cent in 2010 and by 44 per cent in 2013 - up to the zero carbon target in 2016.

We have undertaken a high level assessment

- 5.27 Although it is necessary to assess the viability and developer contributions of the PKDS as part of our analysis for this study, it is not possible to accurately assess these on an individual basis.
- 5.28 Conversely, there will be significant differences between and within PKDS that needs to be reflected to achieve a robust and sufficiently detailed level of analysis. For example, it cannot be assumed that residential units in different PKDS will be able to afford the same level of developer contributions to infrastructure.

Broad development areas within each PKDS have been assigned a development category

- 5.29 We have undertaken indicative development appraisals for different “categories” of development that, we believe, best reflect the key differences between and within the PKDS. We have then applied these categories to broad development areas within the PKDS to understand the overall potential viability of the PKDS and the level of potential developer contribution that could be secured from development.
- 5.30 The development variables used for this study are:
- Type of PKDS development area. Each PKDS (or sub-area, within each PKDS) is categorised into the three categories of Urban extension, Suburban, Urban
 - Relative value of PKDS development area. Each PKDS (or sub-area, within each PKDS) is categorised into the three categories of Low, Medium, High
 - Abnormal costs of PKDS development area. Each PKDS (or sub-area, within each PKDS) is categorised into the three categories of Low, Medium, High

- 5.31 This means there are effectively 27 different development categories. A full list of the broad development areas within the PKDS and the associated assumed development categories is attached at Appendix 4.

We have assessed the impacts of market conditions

House prices are falling

- 5.32 We are currently in an unstable housing market, with house prices having fallen significantly since 2007/8.
- 5.33 The Royal Institution of Chartered Surveyors (RICS) reported the consensus view is that residential prices (based on the mortgage approval indices compiled by HBOS and the Nationwide Building Society) are likely to decline by a further 10% - 15% over the course of 2009, with the peak to trough drop of somewhere between 25% and 30%³¹.

Predicted timescales for recovery

- 5.34 There is, however, no consensus view on when values will recover fully to their 2007/8 peak. The RICS Housing Market Survey in June 2009 showed a reported decline in the rate of price falls

nationally, with the South West performing better with more agents surveyed reporting a rise in house prices for the first time since prices “peaked” in 2007/8. As noted by the Nationwide though, this is based on abnormally low supply levels. It predicts additional supply is likely to come from homeowners who see their financial position impacted by higher unemployment and lower incomes. Increased demand is therefore one potential obstacle to continuing to build towards a recovery.

- 5.35 In November 2008, Savills Research predicted that growth would return to the mainstream by early 2011, with a full recovery to 2007 values in the South East by 2012, and the South West, East Midlands, East of England, London and Scotland by 2013³². Its latest research in May 2009 predicts growth will not return to the mainstream now until late 2011 or early 2012³³. Knight Frank reported last year that “prices will take some time to recover to their 2007 peak, a process which, on average, will be complete by 2015, led by central London (2012) and concluded by Northern Ireland (2019)”.
- 5.36 Price Waterhouse Coopers UK Economic Outlook (July 2009) includes a more pessimistic analysis of potential housing market recovery scenarios. Analysis of different economic conditions shows that even in 2020, after five years of relatively strong growth, real house prices are projected in a median scenario to be only around 8% above 2008 levels in real inflation-adjusted terms. Furthermore, their analysis shows there is a 30% chance that real house prices in 2020 could still be below 2008 levels.

We have had to make a large number of assumptions

- 5.37 A large number of assumptions are needed to provide even a high level assessment of viability and potential developer contributions (see important information on the methodology below).
- 5.38 Accurate estimations of development values and costs on many individual development sites in the PKDS will not be known at present. This is reflected in our conversations with developers in the PKDS, where many had not undertaken their own viability assessments, and no information on development values and costs were provided.
- 5.39 Although a full list of assumptions is set out in Appendix 4, we have set out the key assumptions in our analysis in this section.

Market conditions assumptions

- 5.40 With no consensus on the recovery of the housing market, we have assumed the following base recovery scenario between these predications for assessing the impacts of market conditions on viability and indicative developer contributions is:
- Bottom of the market (sales values 25% lower than “peak” levels):
Now -December 2011
 - Partial recovery (sales values 10% lower than “peak” levels):
January 2012 - December 2014
 - Full recovery (sales values return to “peak” levels):
January 2015 onwards

³¹ RICS Economics - 2009 Housing Forecast (December 2008)

³² Savills Research - UK Residential Forecast: Boom and Bust - The Inevitable Cycle? (November 2008)

³³ Savills Research - Residential Property Focus: Housing market recovery, the four stages (May 2009)

Planning requirement assumptions

- 5.41 We agreed the following key planning requirement assumptions with the client group for our analysis. A full list of assumptions is set out in Appendix 4.
- 5.42 It should be noted some of these requirements, such as Code Level 5 sustainability standards, are higher than current requirements for permitted development. Consequently, there is likely to be a difference in our viability and developer contribution analysis than that being experienced in the current market place.
- 5.43 In addition, it should be noted that a minimum density may not realistically be achievable at all PKDS, for example where sites for predominately housing have significant slopes.

Table 5.1 Key planning requirement assumptions

Assumption	
Affordable Housing	35% of residential units (20% on urban areas to reflect viability)
Affordable Housing Mix	75% socially rented / 25% intermediate
Affordable Housing Grant Funding	No grant
Housing density	35 dph minimum
Sustainability	Code Level 5

Source: RTP

PKDS classification assumptions

- 5.44 A summary of our assumptions for the development areas within the PKDS is set out below. The figures in Table 5.2 are indicative only and represent the best information available at the time.

Table 5.2 PKDS classification assumptions

Map Ref	PKDS	Development Area	Assumed Housing No's	Category: Type of site	Category: Value / Abnormal
1	Bath City Centre inc. Western Riverside	Western Riverside	2,200	Urban	High Value/High Abnormals
1	Bath City Centre inc. Western Riverside	Bath City Centre	957	Urban	High Value/Medium Abnormals
2	Keynsham	Town Centre	179	Urban	Medium Value/Low Abnormals
2	Keynsham	Cadbury	400	Suburban	High Value/Medium Abnormals
2	Keynsham	Keynsham Urban extension	1,637	Urban Extension	High Value/Medium Abnormals
2	Keynsham	K2 site	525	Urban Extension	High Value/Medium Abnormals
3	SE of Bristol prop. UE	Whitchurch	6,834	Urban Extension	High Value/Medium Abnormals
3	SE of Bristol prop. UE	Hicks Gate	3,000	Urban Extension	High Value/Medium Abnormals
4	Bath prop. UE	Option A - West at Twerton	2,000	Urban Extension	High Value/Medium Abnormals
4	Bath prop. UE	Option B - South of City at A367	2,000	Urban Extension	High Value/Medium Abnormals
5	Bristol City Centre & St Phillips	St Phillips	1,000	Urban	High Value/High Abnormals
5	Bristol City Centre & St Phillips	Rest of City Centre	3,250	Urban	High Value/Medium Abnormals
6	S.Bristol inc. Hengrove Park	Hengrove Park	2,262	Suburban	Medium Value/Medium Abnormals
6	S.Bristol inc. Hengrove Park	Knowle West	2,442	Suburban	Medium Value/High Abnormals
6	S.Bristol inc. Hengrove Park	Other S.Bristol	3,054	Suburban	Medium Value/Medium Abnormals
7	North Bristol	PRC Sites (Lockleaze, Henbury, Lawrence Weston, Seamills)	341	Suburban	Medium Value/Medium Abnormals
7	North Bristol	Other sites (Bonnington Walk, City of Bristol College, Blackberry Hill Hospital, Anderson Lees site, St Matthias Rd School site)	4,967	Suburban	High Value/Medium Abnormals
8	Avonmouth & Severnside	Avonmouth	0	N/a	
8	Avonmouth & Severnside	Severnside	0	N/a	
9	Weston TC, UE & urban area	Weston Town Centre & Urban Area	481	Urban	Low Value/Medium Abnormals
9	Weston TC, UE & urban area	Weston Urban Extension-Locking Parklands	1,500	Urban Extension	Low Value/Medium Abnormals
9	Weston TC, UE & urban area	Weston Urban Extension-NW of Locking	3,750	Urban Extension	Low Value/Medium Abnormals
9	Weston TC, UE & urban area	Weston Urban Extension-Airfield	3,750	Urban Extension	Low Value/Medium Abnormals
10	South West of Bristol prop. UE	South West of Bristol prop. UE	9,494	Urban Extension	High Value/Medium Abnormals
11	North Fringe of Bristol	Cribbs Filton	2,500	Urban Extension	Medium Value/Low Abnormals
11	North Fringe of Bristol	West of M32, Harry Stoke & East of Coldharbour Lane	3,700	Urban Extension	Medium Value/Medium Abnormals
11	North Fringe of Bristol	Rest of North Fringe	1,504	Urban Extension	Medium Value/Medium Abnormals
12	Yate UE	Yate Urban Extension	3,200	Urban Extension	High Value/Low Abnormals
13	East Fringe of Bristol	Emersons Green	2,750	Urban Extension	High Value/Low Abnormals
13	East Fringe of Bristol	East of Kingswood	8,002	Urban Extension	High Value/Low Abnormals
13	East Fringe of Bristol	Other East Fringe of Bristol	2,450	Urban Extension	High Value/Medium Abnormals
			78,129		

Source: RTP

We have estimated the theoretical surplus from development rather than a residualised land value

5.45 Our analysis of viability and potential developer contributions is based on a high level estimate of the indicative theoretical surplus from residential development in the PKDS. This estimate has been undertaken for the different development categories and under varying market condition scenarios as set out above.

5.46 Our approach is summarised below:

Figure 5.1 Estimation of theoretical surplus from development

$$\begin{array}{r} \text{Total Development Value} \\ \text{Minus} \\ \text{Reasonable Land Acquisition Costs} \\ \text{Minus} \\ \text{Total Construction Costs} \\ \text{Minus} \\ \text{Reasonable Developers Profit} \\ \\ \text{= Theoretical Surplus from Development} \end{array}$$

5.47 Land value is often residualised based on an assumed level of developer contributions, rather than a theoretical surplus from development at a fixed land acquisition cost. If sufficient residual land value is estimated, a development is considered likely to be viable.

5.48 Although we are assessing viability at a high level in the PKDS, we also need to make an assumption on potential developer contributions for use in the spreadsheet model. We have adopted an estimated theoretical surplus from development approach as this can directly be used to make an assumption on developer contributions, especially where sensitivity analysis is needed to test the potential impact of changes to key variables on infrastructure funding.

Relating theoretical surplus worth to viability

5.49 Where there is a negative indicative theoretical surplus, this indicates that development is unlikely to be financially viable based on the assumptions made, as well as potentially being unable to afford developer contributions.

5.50 Where the indicative theoretical surplus is zero, this indicates the development is theoretically viable but there is no theoretical surplus for potential developer contributions; if developer contributions are required from such development, it will also be unviable on this basis.

5.51 Where there is a positive indicative theoretical surplus, this indicates the development is theoretically viable and able to provide this level of developer contributions to infrastructure funding (assuming this level can be justified as required by a local authority).

Important information relating to our approach and findings

5.52 Our assessment of viability and developer contributions in the spreadsheet model is necessarily at a high level in this study. Important information on our approach and findings is set out in Appendix 4 and should be read in conjunction with this section. However, we have summarised the key points below:

- **Figures reported are not based on, and do not constitute, “Red Book” valuations** - the figures that will be reported from this exercise need to be treated as indicative figures on the basis of the inputs and assumptions made. They are not based on, and do not constitute, “Red Book” valuations (RICS Valuation Standards 6th Edition).
- **The figures reported are only indicative and are highly sensitive to the assumptions** - given the amount of analysis required to assess the impact of different types of sites, market conditions, value and abnormal cost categories, we have not rounded the figures. However, these figures are highly sensitive to the assumptions made, and should therefore only be used as an indication of potential viability and level of developer contributions that could be secured.
- **The figures are not appropriate for site specific conclusions** - it is not our intention in this work to attempt to provide a substitute for a detailed site viability assessment. We have tried to understand broad viability and potential developer contribution issues at a PKDS level; the assessment is not at site specific level.
- **It is more difficult to assess PKDS with urban development sites** - some urban development sites have complex issues, such as land assembly, varying existing use values and remediation. It is therefore more difficult to make assumptions for PKDS with a number of these sites, such as Weston Town Centre, Bristol City Centre (including St Phillips) and Bath City Centre (including Western Riverside)

The results of our high level theoretical surplus assessment

- 5.53 Table 5.3 shows the results of our high level estimation of the theoretical surplus from development for the different categories and at different market conditions, based on the assumptions set out above and in Appendix 4. As previously noted, we have not rounded these figures for simplicity, but that these are only indicative and should not be taken as a precise calculation.

Table 5.3 Indicative residential theoretical surplus (per unit)

Urban Extension	Bottom Market	Partial Recovery	Full Recovery
Low Value/Low Abnormals	-£43,726	-£23,614	-£13,140
Low Value/Medium Abnormals	-£55,293	-£35,182	-£24,707
Low Value/High Abnormals	-£66,860	-£46,749	-£36,274
Medium Value/Low Abnormals	-£26,158	-£1,118	£12,642
Medium Value/Medium Abnormals	-£37,725	-£12,686	£1,075
Medium Value/High Abnormals	-£49,293	-£24,253	-£10,492
High Value/Low Abnormals	-£20,298	£7,206	£22,562
High Value/Medium Abnormals	-£31,866	-£4,362	£10,995
High Value/High Abnormals	-£43,433	-£15,929	-£572

Suburban	Bottom Market	Partial Recovery	Full Recovery
Low Value/Low Abnormals	-£58,004	-£38,879	-£27,779
Low Value/Medium Abnormals	-£67,436	-£48,311	-£37,211
Low Value/High Abnormals	-£76,868	-£57,744	-£46,643
Medium Value/Low Abnormals	-£34,780	-£11,147	£2,959
Medium Value/Medium Abnormals	-£44,212	-£20,579	-£6,473
Medium Value/High Abnormals	-£53,644	-£30,011	-£15,905
High Value/Low Abnormals	-£24,191	£1,696	£17,305
High Value/Medium Abnormals	-£33,623	-£7,736	£7,873
High Value/High Abnormals	-£43,055	-£17,168	-£1,560

Urban	Bottom Market	Partial Recovery	Full Recovery
Low Value/Low Abnormals	-£78,234	-£56,496	-£42,003
Low Value/Medium Abnormals	-£90,782	-£69,043	-£54,551
Low Value/High Abnormals	-£115,877	-£94,139	-£79,646
Medium Value/Low Abnormals	-£63,307	-£37,165	-£19,736
Medium Value/Medium Abnormals	-£75,854	-£49,712	-£32,284
Medium Value/High Abnormals	-£100,950	-£74,807	-£57,379
High Value/Low Abnormals	-£49,022	-£14,073	£9,227
High Value/Medium Abnormals	-£57,069	-£22,120	£1,180
High Value/High Abnormals	-£73,163	-£38,214	-£14,914

Source: RTP

How the theoretical indicative surplus worth is used in the traffic light tables

- 5.54 We have used the results of our indicative estimate of theoretical surplus worth from the different development categories in Table 5.3 in the viability section of the traffic light assessment of barriers to growth in Section 11.
- 5.55 As set out above, there is certain to be a significant margin of error in our viability assessments when applied to PKDS development areas given the high level nature of the exercise. We have therefore used the following indicative “rules” in the traffic light tables as a guide to potential viability:

Red (likely to be unviable) - less than - £7,500 per unit
 Amber (likely to be marginally viable) - between - £7,500 per unit and £7,500 per unit
 Green (likely to be viable) - greater than £7,500 per unit

Viable development based on the above “rules” does not assume sufficient developer contributions to help fund all identified infrastructure requirements

- 5.56 It is important to note that where development has been assumed as viable (i.e. green) in the traffic light tables, this does not necessarily mean it will be able to provide sufficient developer contributions to help fund all the identified infrastructure requirements. A developer contribution strategy would be required to balance the infrastructure needs of development with viability issues, and the need for this is discussed later on in the report.

The current market conditions render development potentially unviable

- 5.57 Our analysis shows that in the “bottom of the market” scenario, where values are approximately 25% lower than previous peak values, all development sites are potentially unviable. It should be noted this is based on 35% affordable housing (20% in urban areas) and a requirement for Code for Sustainable Homes Level 5. This is particularly pronounced in lower value areas, where there is a significant viability gap.

Urban sites appear less viable than others

- 5.58 The other key strategic conclusion drawn from our high level analysis is that some urban development categories appear to be unviable, even in the “full recovery” scenario. Importantly, this includes the High Value/High Abnormals category which we have assigned some of the Bristol and Bath city centre broad development areas.

- 5.59 In addition, even in the High Value/Medium Abnormals category, which could apply to more straightforward sites in these city centres, the indicative theoretical surplus that could be captured as developer contribution to fund infrastructure is low in comparison to respective high value urban extension and suburban development categories.

- 5.60 This suggests that if there is to be significant growth from these urban sites in the West of England, then the following responses could be needed:

- Planning requirements may need to be lowered to improve viability, and/or
- Sites will need to have low infrastructure needs to ensure potentially low levels of developer contributions that can be secured from them are sufficient
- Developers may need to renegotiate any prices on land options

5.61 As set out in Appendix 4, it should be noted that the methodology used depresses slightly the theoretical surplus from urban sites in comparison to the urban extension and suburban sites.

Some sites have high potential theoretical surplus for developer contributions

5.62 Our analysis shows that some development categories have relatively high levels of theoretical surplus that could be secured (where justifiable) to fund infrastructure requirements. In the high value urban extension categories, the indicative theoretical surplus is approximately £11,000 - £22,500 per unit for medium and low abnormal assumptions respectively. As we have assumed approximately half of the PKDS housing is in this development category, securing the full justifiable level of developer contributions from these areas will be critical to funding the necessary infrastructure.

Such levels of contribution are higher than previous average contribution levels

5.63 The RTP report in March 2006 set out the following typical Section 106 receipts around that time:

Table 5.4 Typical previous Section 106 Receipts (£s per dwelling)

Broad Range	
Large Greenfield Sites	£3,500 - £8,000
Small Greenfield Sites	£1,800 - £3,200
Large Brownfield Sites	£1,500 - £4,000
Small Brownfield Sites	Limited

Note: These data exclude the value of affordable housing contributions.

5.64 This indicates that if theoretical surplus above £10,000 per unit is to be secured as developer contributions to help fund infrastructure, this will be in excess of what developers previously paid in Section 106 contributions around the time of the previous “peak” in the housing market.

Developer contribution assumptions for the spreadsheet model

5.65 Based on the above analysis and assumptions, we have used the following indicative developer contributions in our spreadsheet model to estimate the overall potential level of contributions from uncommitted growth in the PKDS. The overall findings from the spreadsheet model are set out in section 9.

Table 5.5 Assumed indicative developer contributions in the spreadsheet model

Urban Extension	Bottom Market	Partial Recovery	Full Recovery
Low Value/Low Abnormals	£0	£0	£0
Low Value/Medium Abnormals	£0	£0	£0
Low Value/High Abnormals	£0	£0	£0
Medium Value/Low Abnormals	£0	£0	£12,642
Medium Value/Medium Abnormals	£0	£0	£1,075
Medium Value/High Abnormals	£0	£0	£0
High Value/Low Abnormals	£0	£7,206	£22,562
High Value/Medium Abnormals	£0	£0	£10,995
High Value/High Abnormals	£0	£0	£0

Suburban	Bottom Market	Partial Recovery	Full Recovery
Low Value/Low Abnormals	£0	£0	£0
Low Value/Medium Abnormals	£0	£0	£0
Low Value/High Abnormals	£0	£0	£0
Medium Value/Low Abnormals	£0	£0	£2,959
Medium Value/Medium Abnormals	£0	£0	£0
Medium Value/High Abnormals	£0	£0	£0
High Value/Low Abnormals	£0	£1,696	£17,305
High Value/Medium Abnormals	£0	£0	£7,873
High Value/High Abnormals	£0	£0	£0

Urban	Bottom Market	Partial Recovery	Full Recovery
Low Value/Low Abnormals	£0	£0	£0
Low Value/Medium Abnormals	£0	£0	£0
Low Value/High Abnormals	£0	£0	£0
Medium Value/Low Abnormals	£0	£0	£0
Medium Value/Medium Abnormals	£0	£0	£0
Medium Value/High Abnormals	£0	£0	£0
High Value/Low Abnormals	£0	£0	£9,227
High Value/Medium Abnormals	£0	£0	£1,180
High Value/High Abnormals	£0	£0	£0

Source: RTP

Applying the developer contribution assumptions to the PKDS

5.66 By applying the relevant indicative potential developer contribution level in Table 5.5 to the corresponding assumed category to the PKDS development areas in , we have derived indicative developer contributions for the PKDS to help fund infrastructure.

- 5.67 Due to the high level nature level of the exercise, our indicative developer contribution levels are unlikely to be accurate at an individual PKDS level, although they aim to provide a broad indication of what could be secured. They are helpful in estimating what the overall level of contributions from the PKDS could be, and also broadly identify which PKDS are more likely to be able to afford higher contribution levels.
- 5.68 It should be noted we have applied the market condition assumptions in 5.40 to the assumed trajectory of development. This means PKDS development areas do not provide developer contributions at the bottom of the market based on the assumptions made, but these contribution levels increase over time until it is assumed the market has recovered.

Table 5.6 Indicative developer contribution by PKDS, and the overall assumed total developer contributions of approximately £500m. This is explained further in section 9 in relation to the overall infrastructure costs and funding estimates in the study.

Table 5.6 Indicative developer contribution by PKDS

Map Ref	PKDS	Assumed developer contribution	Assumed Housing No's	Indicative developer contribution (per unit)
1	Bath City Centre inc. Western Riverside	£6.7m	3,157	£2,132
2	Keynsham	£21.4m	2,741	£7,814
3	SE of Bristol prop. UE	£99.5m	9,834	£10,116
4	Bath prop. UE	£20.2m	2,000	£10,116
5	Bristol City Centre & St Phillips	£2.5m	4,250	£584
6	S.Bristol inc. Hengrove Park	£0.0m	7,758	£0
7	North Bristol	£25.3m	5,308	£4,767
8	Avonmouth & Severnside	£0.0m	0	
9	Weston TC, UE & urban area	£12.0m	9,481	£1,266
10	South West of Bristol prop. UE	£92.3m	9,494	£9,725
11	North Fringe of Bristol	£32.3m	7,704	£4,195
12	Yate UE	£29.5m	3,200	£9,227
13	East Fringe of Bristol	£166.8m	13,202	£12,638
Total		£508.7m	78,129	£6,510

Sensitivity testing: the impact of changes to key assumptions

- 5.69 Achieving viable development, securing sufficient developer contributions and achieving other objectives such as regeneration is a difficult balance to achieve.
- 5.70 Although identifying the optimal balance, or a range of potential scenarios, is outside the scope of this study, we have undertaken some sensitivity testing to show the impact of changes to some key assumptions and provide some information to help take forward this process.

- 5.71 Again, it should be noted these figures aren't definitive; we are seeking to test the impact relative to the base case scenario above, and provide an indication of what the viability and developer contributions could be for different PKDS.
- 5.72 Achieving acceptable development and infrastructure provision in the future is likely to require the public and private sectors working together. We have therefore tested the impact of varying two types of variables: firstly, planning requirement assumptions (public sector) and secondly land cost assumptions (private sector).

The potential impact of reduced planning requirements

- 5.73 High planning requirements can render development unviable, or at least unable to provide sufficient contributions to meet infrastructure requirements, We have varied the assumptions in Table 5.7 as follows to demonstrate the potential impact of reduced planning requirements:

Table 5.7 Revised key residential planning requirement assumptions

	Base Assumptions	Reduced Planning Requirement Assumptions
Affordable Housing	35% of residential units (20% in urban areas)	17.5% of residential units (10% in urban areas)
Affordable Housing Grant Funding	£0 per unit	£20,000 per unit
Sustainability	Code Level 5	Code Level 3

Source: RTP

5.74 The results of this high level analysis are set out below:

Table 5.8 Indicative residential theoretical surplus for developer contribution (per unit); lower planning requirements

Urban Extension	Bottom Market	Partial Recovery	Full Recovery
Low Value/Low Abnormals	-£26,326	-£3,930	£11,001
Low Value/Medium Abnormals	-£39,434	-£17,038	-£2,108
Low Value/High Abnormals	-£52,542	-£30,146	-£15,216
Medium Value/Low Abnormals	-£6,900	£20,984	£39,574
Medium Value/Medium Abnormals	-£20,009	£7,876	£26,466
Medium Value/High Abnormals	-£33,117	-£5,232	£13,357
High Value/Low Abnormals	£2,882	£33,511	£53,930
High Value/Medium Abnormals	-£10,226	£20,403	£40,822
High Value/High Abnormals	-£23,334	£7,295	£27,714

Suburban	Bottom Market	Partial Recovery	Full Recovery
Low Value/Low Abnormals	-£37,764	-£16,480	-£2,291
Low Value/Medium Abnormals	-£48,637	-£27,352	-£13,163
Low Value/High Abnormals	-£59,509	-£38,225	-£24,035
Medium Value/Low Abnormals	-£3,136	£22,872	£40,210
Medium Value/Medium Abnormals	-£14,009	£11,999	£29,338
Medium Value/High Abnormals	-£24,881	£1,127	£18,465
High Value/Low Abnormals	£1,400	£30,211	£49,418
High Value/Medium Abnormals	-£9,472	£19,339	£38,546
High Value/High Abnormals	-£20,344	£8,466	£27,674

Urban	Bottom Market	Partial Recovery	Full Recovery
Low Value/Low Abnormals	-£75,672	-£52,640	-£37,285
Low Value/Medium Abnormals	-£86,368	-£63,335	-£47,980
Low Value/High Abnormals	-£107,758	-£84,725	-£69,371
Medium Value/Low Abnormals	-£58,388	-£30,690	-£12,224
Medium Value/Medium Abnormals	-£69,083	-£41,385	-£22,920
Medium Value/High Abnormals	-£90,473	-£62,775	-£44,310
High Value/Low Abnormals	-£21,364	£15,665	£40,351
High Value/Medium Abnormals	-£29,973	£7,056	£31,742
High Value/High Abnormals	-£47,191	-£10,162	£14,524

Source: RTP

Using these changed planning requirement assumptions, some development categories become viable in depressed market conditions

- 5.75 Changing the assumptions on this basis has a positive effect on site viability. Our analysis in relation to the market scenarios set out in 5.40 indicates that:
- Some development categories produce a theoretical surplus, and are therefore viable on this basis, in the “bottom of the market” scenario.
 - More categories are viable in the “partial recovery” scenario, in particular all but one of the medium and high value urban extension and suburban categories.
 - High levels of theoretical surplus are generated from medium and high value urban extension and suburban categories in the “full recovery” scenario.
- 5.76 For those categories of site producing very high levels of surplus (e.g. over £50,000 per unit in the High Value/Low Abnormal category) could be justified as necessary and reasonable developer contributions to infrastructure.

The potential impact of lower land costs

- 5.77 As noted in 5.19 above, land costs have a significant impact on viability and theoretical surplus. We have not been provided with information from developers we contacted on their land acquisition costs or structures. We have therefore had to make broad assumptions on land costs within our assessment. These are set out in Appendix 4 and range from £250,000 per ha in low value to £500,000 per ha in the urban extension and suburban categories, and are based on our general development knowledge for greenfield site “options”.
- 5.78 As with house prices, land costs are assumed at previous “peak” levels. Like house prices, land values have fallen to reflect the current recession. However, there has been limited land acquisition by developers in recent times as they seek to use their land banks before acquiring new sites.
- 5.79 We understand that many of the large sites in the PKDS have already been optioned. If developers wish to bring forward development in the short term, they may need to renegotiate options if they were agreed during the previous peak in the housing market to reflect the lower income they will receive at the moment. This will reduce land costs.
- 5.80 Land not yet acquired in the PKDS could also be optioned at a lower cost when house prices recover to reflect higher developer contribution, affordable housing and sustainability requirements. We have therefore tested the impact of lower land costs of £100,000 - £300,000 per ha in the urban extension and suburban categories, as set out below. However, we have not varied the urban categories as land costs are likely to be based on existing use values in many instances.

Table 5.9 Indicative residential theoretical surplus for developer contribution (per unit); lower land costs

Urban Extension	Bottom Market	Partial Recovery	Full Recovery
Low Value/Low Abnormals	-£39,583	-£19,472	-£6,064
Low Value/Medium Abnormals	-£51,150	-£31,039	-£17,631
Low Value/High Abnormals	-£62,717	-£42,606	-£29,199
Medium Value/Low Abnormals	-£22,015	£3,025	£19,718
Medium Value/Medium Abnormals	-£33,582	-£8,543	£8,150
Medium Value/High Abnormals	-£45,150	-£20,110	-£3,417
High Value/Low Abnormals	-£13,844	£13,660	£31,996
High Value/Medium Abnormals	-£25,411	£2,093	£20,429
High Value/High Abnormals	-£36,978	-£9,474	£8,862

Suburban	Bottom Market	Partial Recovery	Full Recovery
Low Value/Low Abnormals	-£53,884	-£34,760	-£22,010
Low Value/Medium Abnormals	-£63,316	-£44,192	-£31,442
Low Value/High Abnormals	-£72,748	-£53,624	-£40,874
Medium Value/Low Abnormals	-£31,069	-£7,436	£8,319
Medium Value/Medium Abnormals	-£40,502	-£16,868	-£1,113
Medium Value/High Abnormals	-£49,934	-£26,301	-£10,545
High Value/Low Abnormals	-£20,071	£5,816	£23,074
High Value/Medium Abnormals	-£29,504	-£3,616	£13,642
High Value/High Abnormals	-£38,936	-£13,048	£4,210

Urban	Bottom Market	Partial Recovery	Full Recovery
Low Value/Low Abnormals	-£94,817	-£73,078	-£58,586
Low Value/Medium Abnormals	-£104,324	-£82,585	-£68,092
Low Value/High Abnormals	-£123,337	-£101,598	-£87,106
Medium Value/Low Abnormals	-£78,171	-£52,029	-£34,600
Medium Value/Medium Abnormals	-£87,678	-£61,535	-£44,107
Medium Value/High Abnormals	-£106,691	-£80,549	-£63,121
High Value/Low Abnormals	-£49,022	-£14,073	£9,227
High Value/Medium Abnormals	-£57,069	-£22,120	£1,180
High Value/High Abnormals	-£73,163	-£38,214	-£14,914

Source: RTP

These have a lesser, but nevertheless significant, impact on viability and potential developer contribution levels

- 5.81 Whether lower land costs are possible in the future, particularly when house prices recover, will depend on landowner and developers views as to the robustness and longevity of increasing planning requirements, and whether such land values are still sufficient for landowners to bring land to the market (or renegotiate existing option agreements).
- 5.82 It should be noted we have not varied land costs in the “urban” category as we have assumed the majority of these will be based on existing use values and will be less influenced by the above factors.

Our approach to assessing developer contributions from employment at the PKDS

We assume that non-retail employment makes no developer contribution

- 5.83 The ability of employment sites to contribute towards funding of strategic infrastructure is modest. We do not wish to give any impression that we are ‘taxing’ job creation. If we did, employment may go elsewhere. Accordingly, we do not wish to load employment provision with significant further infrastructure charges.

We assume that retail development generates developer contributions for use against wider social and economic impacts

- 5.84 Large retail sites (both within and at the edge of town centres) can and generally do make some additional planning contribution beyond transport. In our experience, though, the level of contribution varies greatly. Contributions to public transport improvements are typical. Some schemes have paid for improvements in public realm in the centres where they are located. Some superstore operators have also been known to offer planning gain to pay for ‘community benefits’ - for instance swimming pools or other sports facilities - largely unrelated to their scheme.
- 5.85 The exact sum of developer contribution can only be ascertained during the actual detailed planning negotiations and will vary considerably from scheme to scheme. Without assessing each individual retail development assumed in the assessment, it is therefore impossible to estimate this. However, in order to allow some contributions from retail, we have assumed for the purposes of this assessment that convenience retail (i.e. foodstores) generates a developer contribution of £2 million, whereas comparison retail (such as retail warehousing and in-town retail development) produces a contribution of £1 million. As actual future development will generate significantly more or less than this, depending on size, location, site assembly costs etc, we would recommend this is assessed in more detail, although it should be noted that the quantum of contributions generated by retail development will be relatively low in comparison to that of residential development.

6 TRANSPORT: WHAT KEY INFRASTRUCTURE IS REQUIRED? WHAT ARE ITS COSTS AND FUNDING? DO BARRIERS TO GROWTH EXIST?

Introduction

6.1 In this section we examine the transport infrastructure required to support planned jobs and housing growth. We then look at the cost of that infrastructure; and how that infrastructure might be funded.

6.2 We begin by examining the context for transport infrastructure in the West of England.

Context

Historic deficit cannot be ignored as it affects timing and prioritisation

6.3 We have explained in the introduction that our objective is to understand the infrastructure requirements *growth in housing and jobs* at the PKDS. In theory, this means that we have to “tune out” changes in infrastructure requirements due to other factors - such as trend growth in transport demand, or historic deficits in infrastructure provision.

6.4 While our general approach has been to concentrate on the transport implications associated with growth only, historic deficits in transport should not be entirely “tuned out”, as they can have a bearing on scheme requirements, deliverability, timing and priorities.

6.5 It is clear from GBSTS that there are existing deficiencies in the transport network even before RSS growth takes place, which are evident from congested roads, overcrowded trains and extended journey times for buses. Such shortcomings can compromise delivery of the spatial strategy if left unchecked as effective linkages supporting new development is closely related to resolving existing constraints on the transport network. Where such ‘historic deficit’ exists then additional development pressure will aggravate conditions and the attractiveness of the development may be reduced. In addition the ability of any development to fulfil its potential may be restricted as travel delays have a measurable economic impact in terms of journey time.

Schemes exist to tackle historic deficit

6.6 This means that it is important to tackle existing transport deficit either in advance or in tandem with development impact. Doing so will boost capacity on the transport network, which can then be used to cater for the new demand for travel. When combined with any improvements required to handle trips generated by new development, travel conditions can be improved for all. Key areas of deficit are outlined in the WEP JLTP2.

6.7 Many schemes have evolved to tackle the historic transport deficit. For example

- the Bath Package is well progressed and was developed to cater for existing issues in and around the city;
- the Greater Bristol Bus Network is being implemented and will improve connectivity between communities, employment and facilities; and

- the Greater Bristol Metro project will also enable increased sub-regional travel by sustainable modes, improving opportunities for existing residents and reducing the need to travel across the sub-region (particularly through/ around Bristol) by car.

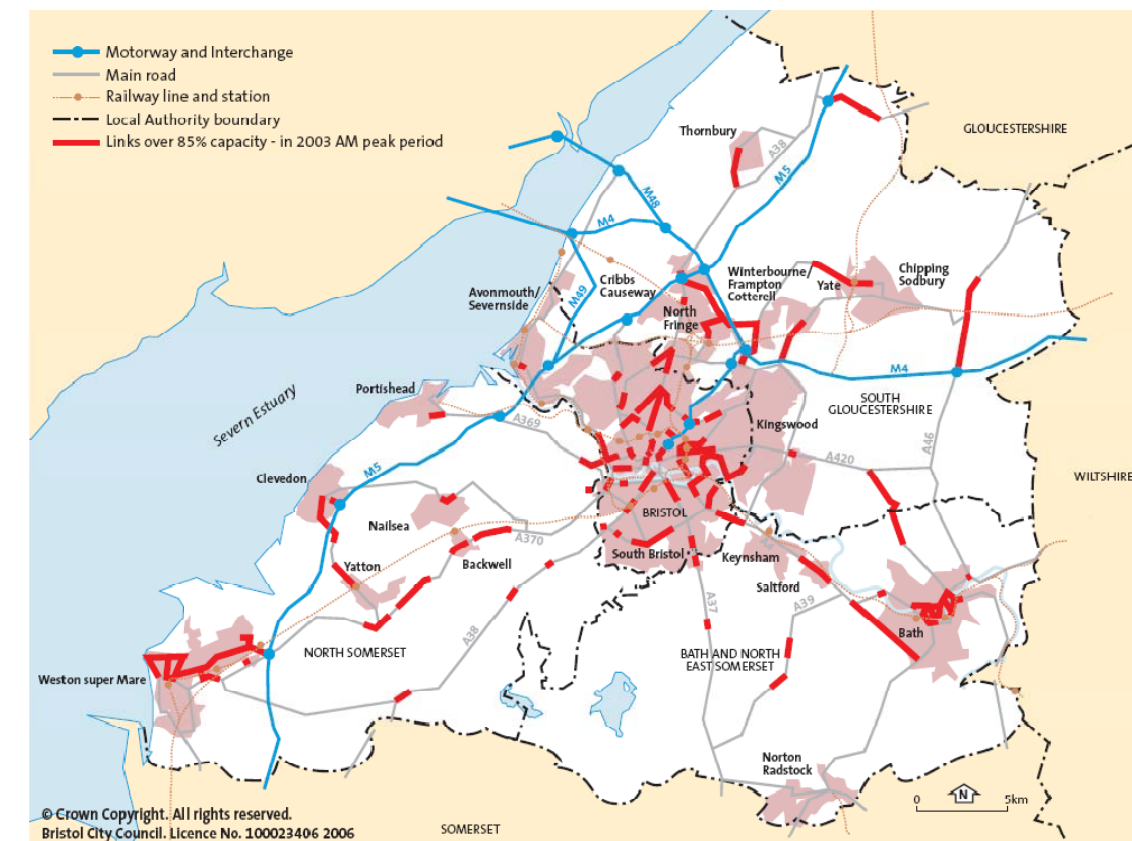
Developer contributions cannot be used to tackle historic deficit

6.8 Generally the cost to remedy matters of historic transport deficit cannot be justified from developer contributions, and so other sources of funding must be found. However, developers may legitimately be required to make contributions towards schemes designed to address historic deficit in proportion to the impact that their new developments will have.

The sub-region is highly dependent on car transport

6.9 Car ownership in the JLTP area is high, and driver attitudes have led to car dependency. 21% of car journeys in the sub-region are under 2 kilometres with 45% of these made by car. Historically, the road network has tended to be modified to supply capacity for the increasing demands of the car, with other modes left relatively behind. These issues are not unique to the JLTP area but excess demand has led to congestion on the local and strategic road network (affecting both private vehicles and public transport) including Central Bath, Central Weston-super-Mare and the corridor to the M5, orbital routes in the Bristol North Fringe and South Bristol, routes into Bristol from Yate, and the radial approaches to Bristol City Centre (see Figure 6.1). The impact is also witnessed on the adjoining motorway network with wider implications for journeys and the economy of the South West region as a whole.

Figure 6.1: Congestion on the West of England Road Network



Source: Final Joint Local Transport Plan 2006/7 - 2010/11, West of England Partnership. Page 30

Policy is attempting to erode this “high car dependence” in favour of other modes

6.10 As a result the highway authorities have universally responded to national and regional policy demands by seeking to reduce dependency on the car and managing car use through a series of integrated packages. The benefits will be to:

- Improve the general health and wellbeing for residents;
- Achieve reductions in congestion;
- Assist the movement of public transport; and
- Improve conditions for transport that contributes to the economy (such as freight).

6.11 At the same time there is pragmatic recognition that the car remains important for the mobility of many and a reasonable balance must be achieved to develop a viable and yet sustainable transport strategy for the future.

Authorities are seeking to make bus travel more attractive. It currently is poorly perceived

6.12 The authorities in the sub-region are therefore seeking to make bus travel a realistic and attractive mode, and aim to increase passenger numbers through mode shift from car. This will help to ease congestion on the road network.

6.13 However, JLTP2 suggests that bus services are poorly perceived as unreliable and expensive. Whether realistic or not, such views need to be challenged. Whilst there are some isolated communities, the Unitary Authorities are restricted in what they can provide in terms of supported services.

Improvements in the rail network are being sought. The network is currently constrained

6.14 Increases in the quality and frequency of train services serving the sub-region, particularly providing for cross-Bristol services from other towns, are being sought.

6.15 Rail is a relatively underused asset in the area³⁴ although this may largely be because of a relatively sparse network, which in some places is poorly related to development (for example the location of Keynsham station relative to the town). Infrastructure constraints take the form of signalling, a lack of places to change train direction at the end of a route (i.e. no ‘turnback’) or where old infrastructure is disused and could relieve pressure on the road network.

Encouraging walking is an objective

6.16 The high level of car use for short journeys to work suggests that for many walking is not considered attractive as a travel option. This can have impacts on health both in terms of reduced air quality and less exercise for those driving journeys that could be walked. The local authorities therefore seek to increase walking for short journeys, in tandem with more lengthy journeys that can take advantage of public transport.

Cycling has a history of improvement

6.17 Despite the historical car dependencies identified above the Greater Bristol Area has witnessed increasing levels of cycling since 2001 including a rise of 50% over the period 2003/04 to 2008/09.

However, the safety of cyclists remains an issue and there is a need to improve the provision of cycling routes and facilities. There are measures in place to achieve this.

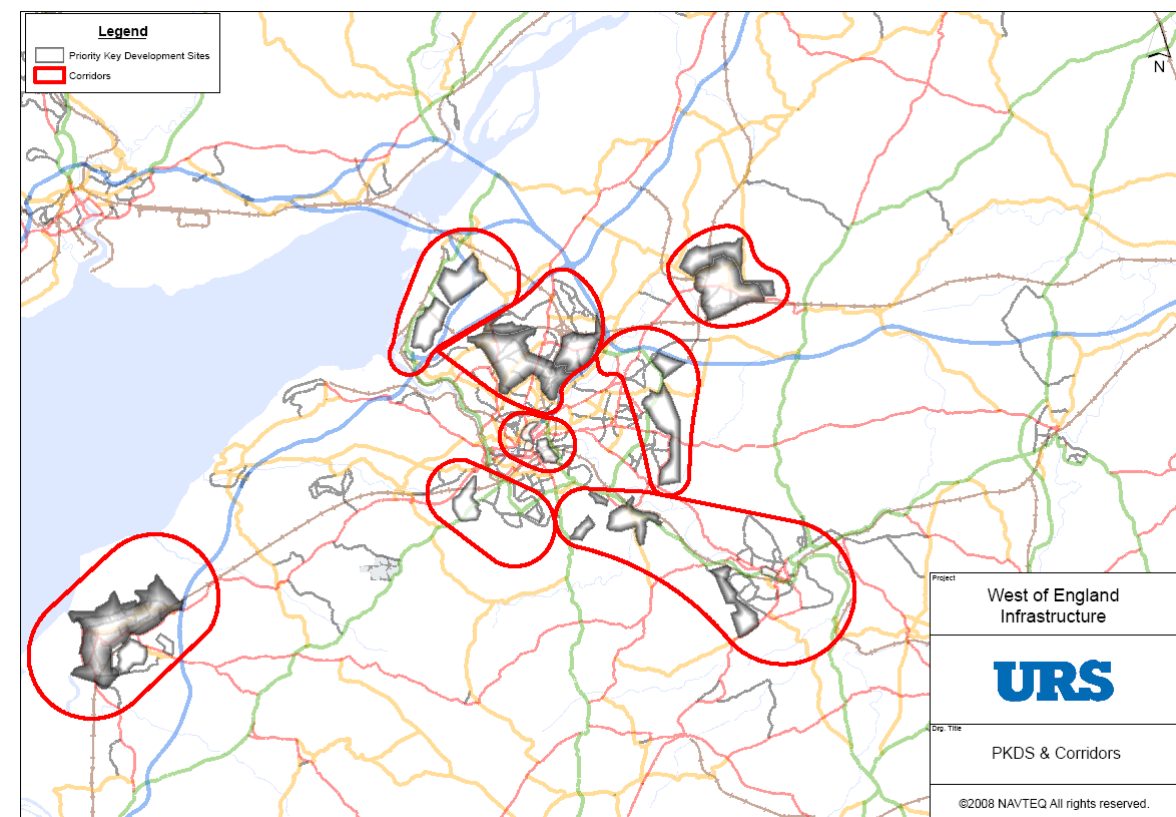
The work to date has been mainly structured on a ‘package’ approach

6.18 A series of transport ‘packages’ have been developed by the WEP and local highway authorities to tackle predicted transport demand and in support of this spatial strategy. Each package is tailored to a distinct area with specific objectives and outcomes in mind. They are all focussed to make the best use of the network in a sustainable way.

6.19 Within each package it is possible to identify a management approach that maps transport needs aligned with sustainable travel interventions to strategic corridors and associated areas.

6.20 The packages have been supplemented by strategic corridors. These are common areas of development that contain a number of schemes relevant to that cluster of growth and are presented as Figure 6.2. The corridors have been identified by URS and compliment the package philosophy adopted in the sub-region.

Figure 6.2: Strategic Corridors that Supplement Packages



Source: URS

These ‘packages’ and strategic corridors can all be mapped to PKDS

6.21 The individual schemes, packages, and corridors relate to many of the PKDS. From the scheme list collated through a review of documents and discussions with stakeholders (known as the “Infrastructure Capture Table”, or ICT), the existing evidence base, and URS’s gravity modelling

³⁴ JLTP2 Supporting Statement -Rail

software all schemes have been assessed against the relevant PKDS. These schemes are mapped in Appendix 5.

RFA 2 schemes

- 6.22 At this stage it is important to formally acknowledge the principal schemes within the West of England that were approved for Regional Funding Allocation 2 (RFA2) submission to the Department for Transport in February 2009, and those that were not approved but for which there is still an aspiration to pursue. These are presented in Table 6.1 including the package or corridor to which it belongs where appropriate.

Table 6.1 Schemes Approved and Submitted for RFA2 in the West of England

Scheme	Package/ Corridor
Approved for inclusion in South West Councils RFA2 submission to the Department for Transport, February 2009	
Greater Bristol Bus Network	Multi-Corridor
Bath Package	
Weston Package Phase 1	
Rapid Transit Ashton Vale to Emerson's Green Phase 1 (Ashton Vale to Temple Meads)	South Bristol Corridor
North Fringe to Hengrove Package	
South Bristol Link	South Bristol Corridor
Portishead Railway	Central Bristol Corridor
Greater Bristol Metro	Multi-Corridor
Callington Road Link/ bath Road Improvements	South Bristol Corridor
M5 J21 Bypass	Weston Corridor
Rapid Transit - Ashton Vale to Temple Meads Phase 2 (Emerson's Green to Temple Meads)	East Fringe Package
Submitted for inclusion in the South West Councils RFA2 list but not approved	
Rapid Transit to Bristol International Airport	South Bristol Corridor
Rapid Transit to Cribbs Causeway	Multi-Corridor
Rapid Transit to Kingswood	Multi-Corridor
Weston Package Phase 2	
Cycling Major Scheme	Multi-Corridor
M5 Junction 19	Multi-Corridor

Our approach

- 6.23 Getting an answer here regarding the requirements, costs, and funding of transport infrastructure required to support growth meant we had to take a number of steps. We explain the process below.

Step 1: URS ODYSSEUS gravity modelling was used to indicate development impact in 2026, and at intermediate stages

- 6.24 The evidence informing our transport infrastructure assessment has been gathered from a review of documents, including the GBSTS and JLTP2, consultation with the West of England Partnership officers, individual authorities, and the Highways Agency. To help determine potential scheme priorities our process has also been supplemented by observations of journey to work patterns sourced from the Office of National Statistics 'CommuterView' that presents 2001 travel to work Census data for the region. CommuterView outputs can be found in Appendix 5.
- 6.25 GBSTS network modelling previously focussed on network operations in 2031 on assessment of full build-out, known as Scenario F, to reflect anticipated sub-regional growth. This presents us with two problems. Firstly, this study is focussed on growth scenarios to 2026, not 2031; and secondly, this study requires us to have some view of the impact of partial build out of the PKDS.
- 6.26 We have therefore turned to URS gravity modelling software ODYSSEUS to inform our assessment of the likely impact of proposed future development up to 2026. ODYSSEUS uses trip rates and population data to assign development related trips to the road network. It has been used as a guide to isolate and examine the impact of the PKDS travel demand that could be added to the historic and background growth that is predicted to be experienced on the transport network. The ODYSSEUS outputs are presented in Appendix 5. The land use inputs to ODYSSEUS are those for residential and employment provided by the West of England Partnership to RTP. Within the constraints of this study it has not been possible to undertake tests for interim years (e.g. 2016 and 2021) and so judgements about phasing are necessarily based on the sequencing of schemes deemed to be required to deliver the PKDS.

Step 2: create an Infrastructure Capture Table (ICT) which shows costs, requirements and funding

- 6.27 We have compiled an "Infrastructure Capture Table" (ICT), which has collated all existing infrastructure identified for the West of England and relevant to this study. This has been confirmed with comments from the West of England Partnership and its constituent local authorities and provides a reference source about each of the schemes including cost, timing, and funding. Where practicable all scheme costs have been calculated for a 2008 price base.

Step 3: identify which schemes in the ICT most assist PKDS growth in a Scheme Assessment Table

- 6.28 All the schemes identified have been included in a "Scheme Assessment Table" (SAT) and related to a PKDS, noting where any are relevant to more than one PKDS. A view has been taken on the significance to the delivery of transportation infrastructure when cross referenced with the phasing of housing and employment growth in the sub-region.
- 6.29 The SAT does not seek to query the existing evidence base (for example no challenges have been made to supporting information for business cases) but uses the available data to assess each scheme against the PKDS. It also provides an assortment of scheme related information and includes assessment criteria. The West of England Partnership Sub-Regional Delivery Plan 2007 includes prioritisation categories. These have been interpreted to provide our assessment criteria:
- Scale - is the impact of the scheme cross boundary or more locally based;

- Evidence Base - does the scheme have policy support and does it feature in a variety of documents;
- Growth Enabling - can the scheme be considered absolutely essential for growth to go ahead, to enable growth, or is it more of a 'nice to have' in terms of the function it will serve for development;
- Deliverability - how certain is the funding, does the timescale seem realistic, and are there any scheme growth barriers;
- Robustness - this is a summary assessment of all the criteria and a judgement about deliverability; and
- Phasing Significance - a judgement has been made with regard to whether a scheme is required before development can proceed.

6.30 The SAT can be viewed in Appendix 6.

6.31 Priority Items have been identified using the criteria above in the SAT. Schemes assessed with a High *Phasing Significance* and *Robustness* rating of either Low or Low-Medium risk have been identified as a priority from the process.

6.32 Assessment of the PKDS on balance with existing infrastructure items has identified specific schemes that are considered of high significance to support delivery of the PKDS, identified in Table 6.2. Whilst all schemes in the table are judged to have a high significance not all are considered priority items because, for example, they are assessed as having a medium or high risk in terms of robustness. The package/ corridor that each scheme falls within and the status of each scheme (e.g. RFA2/ HA/ LHA/ Network Rail) can be found in the SAT.

Table 6.2 Schemes considered of high significance to support delivery of the PKDS

High Significance Schemes	Priority Item
BRT between Newbridge P&R and A4 P&R	✓
RT Ashton Vale to Emerson's Green (P1 AV-TM)	✓
M5 J21 improvements	✓
Weston Gateway	✓
Worle Station	✓
Improved existing and new bus services in Weston-super-Mare	✓
Bus/ rail interchange at the Southgate development in Bath	✓
A new bus station for Bristol	✗
The walking and cycle facilities related to Harbourside and Courage, Redcliffe, and Bristol Bridge developments in central Bristol	✓
A4147 Avon Ring Road junction improvements	✗
Improved interchange at the University of the West of England	✗
Romney Avenue Bus Link	✗
A38-Cribbs Causeway link	✗

High Significance Schemes	Priority Item
South Bristol Ring Road Phases 1 and 2	✓
Callington Road link/ Bath Road improvements	✗
RT Ashton Vale to Temple Mead (P2 EM-TM)	✓
M5 J21 Bypass	✓
Greater Bristol Bus Network (GBBN)	✓
Greater Bristol Metro Project (GBMP)	✓
Smarter Choices	✗
Cycling major scheme	✓
M4/ M5 Managed motorways.	✓

Source: URS

6.33 We have highlighted earlier in this chapter that much of the transport network across the West of England is already at capacity and so the omission of a particular scheme from those listed above does not diminish from the case for those schemes that are required to address historic deficit. Almost every scheme identified in this study caters for existing deficit and to a greater or lesser extent the demand for travel generated by the PKDS. Nor does it imply that the schemes not listed in Table 6.2 do not help to enable the PKDS (schemes that are not Priority Items are not by default only meeting historic deficit). As mentioned above the schemes included in the table are those considered to have the highest significance for the growth sites but does not suggest that all other schemes do not have a role to play in accommodating the increased demand for travel.

There are schemes that do not directly assist growth in the PKDS

6.34 Following assessment we have found that a small number of schemes do not map to any particular PKDS. These are catering almost wholly for historic deficit and are:

- Portishead railway: Needed almost entirely because the passenger service was not reinstated at the same time as freight services. The scheme will not directly address any of the PKDS included in this study, although it is promising that it would form part of the Greater Bristol Metro Project;
- Long Ashton Bypass widening: Evidence from the JLTP2 and ODYSSEUS suggests that this would have little benefit for development traffic;
- A38-A370 Barrow Gurney Bypass: Evidence from ODYSSEUS suggests that this would have little benefit for development traffic; and
- Although residents in new development are likely to use rapid transit to Bristol International Airport this scheme would not in itself support PKDS development.

Step 4: identify potential new schemes which may assist PKDS development

- 6.35 In addition to the schemes identified from the existing evidence base we have identified further schemes for consideration by the West of England Partnership to support PKDS growth. While it is recognised that these do not have any policy commitment, they have been assessed in the SAT with approximate costs calculated.³⁵ They are:
- Orbital BRT East Fringe-Keynsham-SE Bristol UE-S Bristol: It is evident from URS's analysis that improved orbital links will be required between the East Fringe and SW Bristol Urban Extension (UE). The South Bristol Link Phases 1 & 2 will provide part of this and a recent report suggested that a combined highway/ BRT option would be most beneficial. URS suggests that the BRT element of this be extended from the South Bristol Link to include SE Bristol UE, Keynsham, and the East Fringe. As it is likely that this would require an element of RFA funding it is anticipated that this could not be implemented until 2021.
 - An integrated Smartcard system to include the Greater Bristol Bus Network, (Bus) Rapid Transit, and the Greater Bristol Metro Project: The West of England Partnership's vision for transport is heavily reliant on public transport, and in particular bus. We suggest there is merit in considering a smartcard system deployed across the sub-region to ease trip making and speed interchange between modes (for example BRT and the Greater Bristol Metro Project), especially if a range of ticket types potentially being available. It is suggested that to wait for RFA funding to become available may mean waiting too long (2021). A system installed early in the process could provide benefits to those currently travelling throughout the sub-region. We understand that a TIF bid is still considered feasible by the West of England partners³⁶ and this may present an opportunity to implement smartcards earlier than RFA funding would allow if a system was included in the bid. Ultimately smartcards could be linked to other services (e.g. libraries and school services), which may provide further opportunities for funding.
 - Extension of Greater Bristol Bus Network in Yate Urban Extension: Public transport links between Yate and Bristol have been identified as a key requirement for travel demand from Yate. To ensure this demand is catered for the extension of the GBBN will be required to offer connections to Yate station and directly into north and east Bristol, including the growth areas in the North Fringe and East Fringe. It is anticipated that this could be funded predominantly by local developers. There could be significant advantages from routing all services on the GBBN via Yate station.
 - Extension of Greater Bristol Bus Network throughout Bath: The urban extension south of Bath is likely to need improved links into the city centre. There is also a need for other direct links to Bristol where rail does not service predicted travel demand. This is either because the timing of the GBMP is not conducive to encouraging sustainable trip making or because the origins and destinations are not conveniently located for direct access to the local rail network. It is anticipated that this could be substantially funded by local developers.
 - A36 Route Treatment (Bath): It is apparent that the A36 between Sydney Gardens and Twerton (How Hill) in Bath would come under increased pressure, in particular the section immediately

³⁵ Inclusion in this report does not imply that the schemes have been adopted by the West of England Partnership.

³⁶ Local Transport Today, Issue 522, 19 June 2009. Page 3.

south of Sydney Gardens. To supplement the traffic management proposed for Bath it is considered that a route treatment of the A36 through the city would improve travel conditions. Junction remodelling and further bus priority measures may offer possibilities in this context.

- A420 Route Treatment: The A420 around Kingswood is already under pressure and on the approach to Bristol city centre. While there are substantial orbital trips anticipated to and from the East Fringe there will also be an increase in radial trips to and from the city centre. Existing congestion compounded by further demand from growth is expected to lead to a requirement for route improvements at key junctions along this route.
- Extension of Greater Bristol Bus Network to Avonmouth & Severnside: Analysis indicates there is likely to be substantial traffic demand both to and from Avonmouth and Severnside, in particular coming from and through North Bristol and the North Fringe of Bristol (Appendix 5 - 2026 ODYSSEUS). An extension to the GBBN would allow for flexible services travelling through or originating in the north of Bristol (or other locations such as Yate) using Severn Road to provide services into the heart of Avonmouth and Severnside. In addition the existing proposed service planned to terminate Avonmouth south could be extended north to improve accessibility to employment in that area and cater for a demand from central Bristol and potentially further afield.

Step 5: pulling the analysis together. We present detailed findings here in tabular form, and then summarise this for the traffic light tables found in section 11

- 6.36 The schemes in the SAT have been collected into a series of tables to show those that are relevant in support of each PKDS. The tables also indicate the anticipated date when the scheme is due to be built, whether it is a priority item, and if funding is available for the scheme. The table does not however show any potential funding gap associated with the scheme as this can be calculated from the SAT. The PKDS tables are included in Appendix 7.
- 6.37 Our evidence indicates that almost all PKDS have schemes that can be considered as priority items. The PKDS tables also show (through blue highlighting) those schemes that feature for more than one PKDS.
- 6.38 Table 6.3 below considers the issues at each PKDS.

What are the infrastructure requirements and costs resulting from housing and jobs growth?

- 6.39 In the section below we show what requirements arise from housing and jobs growth in the West of England. As discussed above, elements of these requirements arise from dealing with historic deficits. The following sub-sections seek to isolate costs for PKDS growth only.
- 6.40 This work has been presented in tabular form for clarity. Note that this work is summarised in the traffic light tables in section 11.

What the summary table shows

- 6.41 These have been identified from the existing evidence base and through consultation with stakeholders. The table also shows schemes that have been mapped against the PKDS (not all are mentioned in this table), and the significance of the scheme to the development. It includes presentation of the years that amber and green are reached in the main Traffic Lights tables (see

guide example below). For ease of reference we have included the text summary from the traffic light tables, which is directly informed by the more detailed comments in the table below.

PKDS title	Year Amber achieved	Year Green achieved
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E: Where Amber or Green are not achieved NA is inserted and means Not Applicable

- 6.42 In a few cases a PKDS is the umbrella for a number of sub-sites. In these cases we have included additional traffic lights to show any variation in the years that amber and green are achieved. It is outside the scope of this study to assess the need for each scheme to relieve historic deficit.
- 6.43 Table 6.3 introduces the concept of ‘pain’ on the transport network. The term has been used in relation to the potential burden that is likely to be imposed from development (in whole or part) on an already stressed network in the absence of enabling facilities and improvements. In these circumstances there is a high risk that the outcome would result in or compound an unmanageable situation.
- 6.44 The decision whether or not it is acceptable to allow such stress, and over what timescale, rests with the appropriate highway authority or other infrastructure provider. It is not within the remit of this study to identify in detail when and where such situations may arise nor offer judgement on whether it is appropriate to allow such stress situations to develop. Key considerations would be political judgements and the implications for sustainable transport, the economy and the overall local environment. As a consequence the decision on what constitutes an acceptable level of network stress for individual developments lies outside the scope of this study.
- 6.45 It is important to note that when judging the Traffic Lights for transport the rule of thumb we have used is:
- Red: the red bar shows when there is insufficient transport capacity to properly cope with the development. This means that, in our view, additional housing demand at certain points on the network resulting from jobs or housing growth could put unacceptable strain on the network. Of course, development of either jobs or housing is *possible* during this “red” period. It is important to recognise that a designation of ‘Red’ should not be interpreted with the meaning that development must not go ahead, or would have planning permission withheld on transport grounds. But in these circumstances, development is likely to have three effects. Firstly, congestion is likely to rise further, with consequent economic impacts; secondly, where there is an absence of proper alternatives to car use from the start of a new development, new residents attracted to developments will have commuting patterns and habits of car use that will militate against the sustainable use of public transport in future; thirdly, there may in some instances be air quality management problems; and fourthly, there are clear sustainability issues involved.
 - Amber: denotes where transport infrastructure appears to be sufficient to cope with PKDS growth, and so no barrier to development, but careful judgements will have to be made in individual cases particularly with respect to phasing (only Priority Items may be complete).
 - Green: denotes where sufficient transport infrastructure is expected to be in place to cope with PKDS growth (all required schemes are complete).

Table 6.3 Transport infrastructure requirements: detailed findings

ISSUES	SCHEMES	SIGNIFICANCE FOR PKDS
Bath City Centre including Western Riverside	2012	NA
Priority Items on stream by 2011 and are complete by 2016 but other required measures not completed until 2016. More measures needed to address growth than currently identified (e.g. Bath Package created for pre-RSS growth), may need to be defined on a site-by-site basis. P&R sites subject to planning permission, not yet granted for 2 out of 4. URS has recommended extension of GBBN and A36 route treatment as further schemes.		
Unacceptable levels of through traffic on strategic roads	A36 Route Treatment Bristol Bath Corridor Transport Package Bath Package Greater Bristol Bus Network Smarter Choices	The priority items will largely deal with existing deficit, the Bath Package was developed to address existing issues before RSS growth allocations were identified. The LDF identifies that the Western Riverside development is dependent on P&R and improved bus services, ODYSSEUS supports this, particularly on the eastern approaches to the city centre (A36 and A4). Other schemes, such as Active Traffic management, may help to release some additional capacity within the city centre but this may be taken up by background traffic growth before development traffic has a real impact on the road network.
Bus interchange & network improvements required	Bath Package Bus/ Rail Interchange for Southgate development URS suggested Smartcard	The Bath Package has benefits for historic deficit and will contribute to enabling growth, however, it should be noted that there is potential for uncertainty given the Department for Communities & Local Government directive preventing B&NES approving planning permissions for two P&R sites required for the package ³⁷ . The success of the package is drawn into question without these permissions and although the scheme remains priority items the intervention of the government department makes the date of implementation less certain.
Improved rail frequency between Cardiff and Southampton required	Greater Bristol Metro Project Bath Spa capacity enhancement	Although the GBBN and Bath Package will enable Bath Western Riverside they may not solve the issue of congestion traffic on the strategic road network. Improved rail frequencies required. The Great Western Rail Utilisation Strategy published by Network Rail (Aug 09) recommends a new hourly Bath-Bristol shuttle calling at all intermediate stations.
Western Riverside dependent on P&R and improved bus services	Bath Package Greater Bristol Bus Network	
Bath package devised before growth and so does not cover it. Additional infrastructure will be required.	URS schemes suggested for Bath	

³⁷ <http://www.thisisbath.co.uk/brt/Bleas-considers-public-inquiry-BRT/article-1023584-detail/article.html>, article dated 26th May 2009.

ISSUES	SCHEMES	SIGNIFICANCE FOR PKDS
Keynsham	2011	2021
Greater Bristol Bus Network complete by 2011, Greater Bristol Metro Project not completed until 2021 and required for medium distance commuting. Without orbital BRT suggested by URS high dependence on car is likely to impact Bristol suburbs. URS suggest orbital BRT passing through Keynsham, although unlikely this could be implemented before 2021 due to RFA funding commitments.		
60% of employed residents currently work outside Keynsham	Greater Bristol Bus Network Greater Bristol Metro Project Bristol Bath Corridor Transport Package URS suggested Orbital BRT Callington Road Link/ Bath Road Improvements	Proposed schemes serving Keynsham will go some way to catering for the demand generated by the 2,910 houses and substantial employment identified for the town. It is evident, though, that that primary routes through the town will come under pressure and further schemes will be required to alleviate this. In part Smarter Choices will go some way to achieving this but large local improvements to the transport network may be required once the location of development has been identified (site specific). The Greater Bristol Bus Network will improve links to surrounding towns, in particular Bath, Bristol, Midsomer Norton, and Radstock, which CommuterView indicates are the primary urban areas that people come to work from outside of Keynsham itself.
Edge of town rail station	Greater Bristol Bus Network Smarter Choices	Callington Road Link/ Bath Road Improvements not identified as a Priority Item due to current progress in development but South Bristol may experience significant 'pain' until this is completed if Keynsham build out is substantial before construction.
Impact of growth to the southeast of Bristol	URS suggested Orbital BRT Bristol Bath Corridor Transport Package	
Improved rail frequency between Cardiff and Southampton required	Greater Bristol Metro Project	
B&NES think development at Keynsham market town is contrary to RSS but transport improvements may not be viable if no development to help pay for it (bus) or increase potential patronage (rail)		
SE Bristol proposed Urban Extension	2021	2023
Greater Bristol Bus Network not sufficient because currently no orbital routes. Potential Whitchurch bypass has no funding status and along with Callington Road Link/ Bath Road Improvements considered to have only localised impact		

ISSUES	SCHEMES	SIGNIFICANCE FOR PKDS
[GBSTS]. URS suggested Orbital BRT couldn't come on stream before 2021 as some RFA funding likely to be required (currently all allocated to 2019). No effective schemes have funding.		
B&NES concerned about orbital travel continuing from South Bristol Link Phase 1 & 2 and the solution to demand for this movement.	Bristol Bath Corridor Transport Package URS suggested Orbital BRT South East Bristol Transport Package Smarter Choices Callington Road Link/ Bath Road Improvements	The congestion on the road network on radial and orbital routes in Bristol, combined with the evidence presented by ODYSSEUS that these routes would be heavily utilised by development traffic, suggests that highway improvements in the SE Bristol Transport Package would play an important role in improving movement around the southeast of Bristol for both existing and future new traffic. In particular they would relieve pressure on the roads within the existing Bristol urban area and enable movement to and from south Bristol, where extensive new employment opportunities are to be accommodated.
Development to the Southeast of Bristol is largely focused on the end of radial corridors, which are acknowledged as having poor levels of accessibility in Bristol's Preferred Options	Smarter Choices South East Bristol Transport Package URS suggested Orbital BRT	The schemes in the SE Bristol Transport Package are yet to be formally identified. Bath Road/ Callington Road/ Hengrove Way are already under pressure which will increase as time goes on and without further testing of the proposal for the Callington Road Link / Bath Road improvements it is not clear whether this will be sufficient to accommodate the growth in traffic. Further measures may be required.
Away from the A4 public transport becomes less viable.	Bristol Bath Corridor Transport Package URS suggested Orbital BRT South East Bristol Transport Package	ODYSSEUS highlights potential significant orbital movements between the east and southwest of Bristol. An orbital BRT system could link to the South Bristol Link Phases 1 & 2 to reduce the need for orbital trips by car.
Bath proposed Urban Extension	2012	NA
Priority Items completed by 2012 but other enabling infrastructure not completed until 2016. Will require substantial additional infrastructure to cater for travel demand for development (e.g. Bath Package created for pre-RSS growth). The additional transport measures to enable full development at this PKDS are not yet identified and cannot be until there are firmer plans for development locations. URS suggest extension of GBBN throughout Bath including this PKDS.		
Bus interchange & network improvements required	Bath Package Bus/ Rail Interchange for Southgate development URS suggested Smartcard Bristol Bath Corridor Transport Package	There is already substantial pressure on the road network through Salford and URS has assessed that this will increase dramatically with development traffic. At present the implementation year of 2021 may not be sufficient. Public transport schemes will help to relieve stress on the existing transport network but further schemes will be required as the Bath Package was not designed to cater for
Improved rail frequency	Greater Bristol Metro	

ISSUES	SCHEMES	SIGNIFICANCE FOR PKDS
between Cardiff and Southampton required	Project Bath Spa capacity enhancement	traffic from RSS growth and other schemes that have been identified are unlikely to be sufficient to fill this deficit, particularly locally. It is likely that new schemes will need to be identified once a clearer pattern of spatial distribution for the Bath UE has been identified.
Bath package devised before growth and so does not cover it. Additional infrastructure will be required.	URS schemes suggested for Bath	Rail improvements will not provide direct links to Cardiff and Southampton but will improve opportunities for interchange at Bristol.
Bristol City Centre & St Philips	2009	2021
Although development could proceed without them the GBBN, BRT, and GBMP will play a significant role in providing for sustainable commuting to the city centre. GBBN is completed by 2011 but BRT and GBMP are not completed until 2021.		
Central Bristol development on hold due to BRT.	RT Ashton Vale to Temple Mead Greater Bristol Bus Network URS suggested Smartcard	Discussions with planning professionals have suggested that development at this PKDS is being held up because the BRT routes are not in place. In particular this is likely to affect the large amount of B1 employment that is planned for the area. All of the schemes identified for this PKDS are significant because they will reduce pressure on accessing the city centre by private car.
Restricted space for transport improvements, particularly in the city centre and other existing built up areas	Smarter Choices M32 P&R BRT and Rapid Transit	The M32 corridor into the centre of Bristol will come under increasing pressure from early on in the growth period as new development draws additional traffic in. A P&R site could play a major role in ensuring that this route operates smoothly, combined with other public transport improvements to the north of the city centre
Costly new infrastructure (bridges or road capacity) may also be required	Smarter Choices Cycling Major Scheme	The uncertainty over the requirement for costly new infrastructure means that substantial amounts of development could not be accommodated until this issue has been clarified.
South Bristol inc Hengrove Park	2016	2021
Priority Items not completed until 2016 including South Bristol Link P1&2. Orbital BRT suggested by URS could not be completed until 2021 earliest due to existing RFA funding being committed.		
Development in South Bristol is largely focused on the end of radial corridors, which are acknowledged as having poor levels of accessibility in the	Rapid Transit Hengrove to North Fringe South Bristol Link Phases 1 & 2 URS suggested Orbital	In South Bristol the priority item is the South Bristol Link, which will link radial routes to the southeast and southwest of the city. It will help to alleviate pressure on an already congested corridor and should also help to reduce pressure on local roads. Whilst the Callington Road Link/ Bath Road Improvements could play an important role in South Bristol

ISSUES	SCHEMES	SIGNIFICANCE FOR PKDS
Preferred Options document	BRT Callington Road Link/ Bath Road Improvements	it has not been designated a priority item because it is not clear whether it would be sufficient ensure efficient transport links around south Bristol on its own or if further measures may be required.
Hengrove development dependent on/ blighted by slow development of improvements in transport infrastructure, dependent on implementation of BRT in S Bristol	Various BRT schemes	The South Bristol Link is considered essential by planning officers and URS's evidence supports this. If it can be implemented the Hengrove to North Fringe rapid transit would also play an important role in reducing car trips between these two large growth areas and at intermediate locations, although the Greater Bristol Bus Network should go some way to providing for this function in the interim.
B&NES concerned about orbital travel continuing from South Bristol Link Phase 1 & 2 and the solution to demand for this movement.	South East Bristol Transport Package URS suggested BRT	The GBSTS Model Results Report (dated the 11th of December 2005) suggests that the Callington Link Road/ Bath Road Improvements and the Whitchurch Bypass (a potential scheme in the SE Bristol Transport Package) would only have localised improvements.
North Bristol	2013	2018
Managed Motorways critical for development and not completed until 2012. All other schemes not complete until 2017.		
Congestion on the strategic road network	M4/ M5 Managed Motorways Rapid Transit Hengrove to North Fringe Greater Bristol Bus Network URS suggested extension to GBBN	Whilst Managed Motorways is a priority item for North Bristol it will primarily serve the transport deficit and also help to generate some spare capacity on the strategic road network for background traffic growth and the demand from new development. Extension to the GBBN could provide sustainable links to Avonmouth & Severnside, with potential for through services from Yate & Chipping Sodbury.
Concern about viability of S106 type access to development sites.		
Avonmouth & Severnside	2009	NA
The network around Avonmouth and Severnside is under considerable stress. A new junction on the M49 may be required to bring development in this area forward. Depending on scale, at present the HA may object to any development but are working pragmatically to accommodate planned growth to 2026. New allocations beyond the current plan period (such as the allocation of currently greenfield sites for employment) would be likely to attract HA opposition. There are currently no HA plans for a new junction. Extant permissions from 1957 mean that the ability of Highways Agency to a) successfully object to growth, or b) require financial contributions to transport improvements appears to be limited.		
Difficulties in getting HA (and EA) to agree to	M4/ M5 managed	The Second Avonmouth Crossing (deficit item) has not been designated a priority item because analysis suggests

ISSUES	SCHEMES	SIGNIFICANCE FOR PKDS
development of greenfield land. Existing permissions mean some impact cannot be mitigated though developer contributions. Land without permissions may mean new junction on M49 required but HA have no plans for such a junction and are not minded to approve any plans for development until more detail is provided.	Motorways Second Avonmouth Crossing URS suggested extension to GBBN	that whilst the GBSTS indicates it could have a substantial impact on the road network URS analysis suggests that there is relatively little local traffic that would be travelling from, for example, Portishead to Avonmouth. Furthermore the scheme does not have any funding status within RFA2. Because of existing permissions it is unclear from existing evidence what the impact of greenfield development would be, particularly as the precise scale and mix is uncertain resulting in a lack of clarity in trip rates. South Gloucestershire will require an intermediate junction on the M49 before any new green field planning permissions are granted as they state that the local network is already inadequate to deal with the traffic generated by development. Consultant team discussions with the Highways Agency indicate that they would not be inclined to approve this at the present time. Any change to this position would require evidence that development traffic that would use the junction would not cause the existing strategic transport network to 'collapse'. Justification for a new junction would need to be proven for development beyond existing permissions (if it is deemed to be required). The Highways Agency would also need to be satisfied that any new development would not be to the detriment of the operation of the adjacent motorway network (either with or without a new junction).
Weston TC & UA	2016	2021
Significantly different issues across the PKDS. Priority Items not completed until 2021, high dependence on improvements to M5 J21, improvements to J21 to cater for historic deficit (and enable capacity for growth) will provide stop gap for bypass but would be better to bring larger scheme forward in time.		
Congestion, with high levels of commuting, worsened by free workplace and retail parking.	M5 J21 improvements M5 J21 bypass Weston Gateway Greater Bristol Bus Network	Weston Packages 1 & 2 are key to transport provision for this PKDS. If the Airfield development were not to be progressed then the Cross Airfield Link and Airfield Bridge Link would not be required. Although other sites would make use of these links they are not essential to support, for example, Locking Parklands and so would not restrict other sites at this PKDS.
Access to the M5;	M5 J21 improvements M5 J21 bypass	
Poor public transport use;	Greater Bristol Bus Network Greater Bristol Metro Project	Weston has few inbound and outbound routes, with the route to the M5 arguably being the main one. The improvements to J21 are, therefore essential to enable development as analysis shows that this would be the

ISSUES	SCHEMES	SIGNIFICANCE FOR PKDS
	URS suggested Smartcard	principal route to and from the rest of the sub-region.
Local road, rail, and cycling constraints	Banwell Bypass Worle Station improvements Weston-super-Mare Station Bay platform reinstatement Worle junction to Weston Milton redoubling	The policy of substantially increasing employment to internalise commuting is acknowledged but it would be unrealistic to expect this alone to solve the problem. It is also understood that there may be some viability issues with respect to this approach. The Banwell Bypass appears to serve the transport deficit more than development traffic, although there is some development traffic travelling between Bath and Weston. The rail improvements will also principally accommodate an existing need but will also improve the implementation of the Greater Bristol Metro Project. The proposed improved existing and new bus services, a priority item, will have a critical role to play in enabling development. The rail schemes will be delivered by Network Rail and although the schemes are not fully progressed their implementation seems certain (subject to third party funding) as they are in Control Period programmes, although delays from 2011 to 2014 have recently been announced.
Accessibility is focused on radial corridors		
Reliance on the car due to a dispersed settlement pattern in the district	Greater Bristol Bus Network	
Poor rail facilities	Worle Station improvements Weston-super-Mare Station Bay platform reinstatement	
Surface Access to BIA and ports	WSM to Bristol International Airport to South Bristol Link	
Threshold approach to infrastructure but triggers not known. Growth both making existing problems worse but also being the mechanism by which infrastructure improvements can be delivered. Different issues facing the town centre (Area Action Plan) and other Development (Weston Regeneration Area).		
South West of Bristol proposed Urban Extension	2016	2021

ISSUES	SCHEMES	SIGNIFICANCE FOR PKDS
Priority Items not completed until 2016. Critical requirement for South Bristol Link Phases 1&2. Substantial orbital movement will not be catered for sustainably unless provision is made. Realistically an Orbital BRT route (suggested by URS) could not be implemented until 2021 at the earliest due to RFA funding constraints.		
Accessibility is focussed on radial corridors	South Bristol link RT Ashton Vale to Temple Mead URS suggested Orbital BRT	The South Bristol Link is a priority item for the South West Bristol UE and considered essential to enable the urban extension to proceed. The BRT is, to a large extent, a deficit item, although an extension from the existing urban area into the UE, paid for by the development, would improve accessibility into the city centre through parts of south Bristol.
Surface Access to BIA and ports	Rapid Transit to Bristol International Airport	Rapid Transit to Bristol International airport would be of benefit to those residing in new developments but is principally considered a deficit item. URS has suggested orbital BRT because analysis of ODYSSEUS suggests a high demand for orbital movement between the East Fringe of Bristol and SW Bristol UE. It is not believed that existing BRT proposals will cater for this demand.
North Fringe of Bristol	2016	2021
Cribbs Causeway	NA	2021
Managed Motorways not completed until 2012. Priority Items not Complete until 2021 although main PT completed by 2016. Existing capacity must be released to allow for increased transport demand from development. Stoke Gifford link would go some way to providing this capacity.		
The North Fringe is located adjacent to the M32, a corridor that already experiences congestion in peak periods	Rapid Transit Hengrove to North Fringe M4/ M5 Managed Motorways M32 P&R	The schemes in the North Fringe to Hengrove package are included in the RFA programme and are well advanced and an outline business case for programme entry into the DfT major scheme programme is planned for March 2010. Stoke Gifford transport link is required to support any potential urban extension to the west of the M32.
Proximity to M32 & A38	M32 P&R	RT to this part of the PKDS has a high significance and is not due for completion until 2018/19. The ratio of jobs to resident workers emphasises the need to ensure that there are sustainable links to the PKDS from the start to habitualise travel by modes other than the private car.
Public transport provision is insufficient, rail is not fully utilised	Greater Bristol Bus Network Greater Bristol Metro Project	The Greater Bristol Metro Project will have a role to play in relieving the stress caused by the North Fringe's role as a gateway into Bristol. It may also be able to improve public transport into the PKDS but this will be dependent on the
Bus services are poor other than into Bristol	Greater Bristol Bus Network may make small contribution	

ISSUES	SCHEMES	SIGNIFICANCE FOR PKDS
		final frequencies, timetabling, and routes that are provided.
Land south of the Ring Road does not link well with existing and proposed communities at the west of M32 development	Stoke Gifford Link	SGLP sites H1(9) and (4) are under construction and have the benefit of planning[permission respectively and are therefore 'out of scope' of the study. SGLP site H1 (13) Harry Stoke is relatively well advanced, transport schemes have been identified for it (and Land East of Coldharbour Lane) and will therefore be taken forward as soon as possible. This judgment therefore applies predominantly to the Area of Search west of M32 (Jct1) However, there is no evidence that the developments out of scope address their strategic impact on the transport network and as a result seem likely to generate 'pain' whilst the infrastructure that will accommodate the PKDS is put in place.
Development in the east of Cribbs Causeway would not currently be accessible to public transport	Greater Bristol Bus Network Rapid Transit to Cribbs Causeway	
Impact on M32 J1 needs addressing with HA		
The role of the existing transport network around the North Fringe as a gateway to Bristol means that there are broader concerns than simply providing for travel to and from that area	Greater Bristol Bus Network M32 P&R	
Approximately twice as many jobs as resident workers Principle of putting in sustainable infrastructure prior to site development to establish good travel patterns.		
Yate	2021	NA
Yate Urban Area	2011	NA
Priority Items particularly Greater Bristol Metro Project not completed until 2021. Sufficient infrastructure has not been identified for this location. Upgraded sustainable linkages to locations throughout Bristol are considered a must. Uncertainty over funding for Yate Turnback: likely to be required to enable Greater Bristol Metro Project.		
Yate station poorly connected to the town	Greater Bristol Bus Network Greater Bristol Metro Project	The turnback is not considered a priority item because analysis suggests that it is primarily a deficit issue, although this is not to disregard the value that it would have for development in Yate and the adjacent urban extension.
Bus services to locations		The rail services enabled by the turnback will not be

ISSUES	SCHEMES	SIGNIFICANCE FOR PKDS
other than Bristol are poor		sufficient to encourage sustainable transport on its own, particularly for trips where rail does not provide a journey that is direct over a short distance (for example the East Fringe and parts of the North Fringe of Bristol. Further measures will be required particularly where modal interchange may be necessary.
No rail provision for Chipping Sodbury	Greater Bristol Bus Network Greater Bristol Metro Project	
'Turnback' required to improve train frequency between Yate and Bristol	Yate Turnback	It is likely that small pockets of development (with the amount subject to testing) could be released in Yate Urban Area once GBBN complete but it will be important to route bus services via the station.
Motorway access fro freight needs improving		With development expected to compound existing problems on the transport network it will be important to identify additional schemes as soon as the spatial pattern of growth has been determined.
Public transport provision in and around the area needs improving	Greater Bristol Bus Network Greater Bristol Metro Project URS suggested Smartcard	It is acknowledged that there is a strategy to increase self-containment but CommuterView suggests that it is already relatively self-contained. Employment is not increasing substantially and there are already problems on the road network. At present only growth is identified but not how to cater for it. It is unlikely contributions will meet all infrastructure enhancement requirements due to historic deficit and at present no funding is identified for major transport improvements that may be required.
Proposed options for development will focus commuting on existing congested areas	URS suggested extension to GBBN	
Barrier to development is transport links to North Fringe	Greater Bristol Bus Network Greater Bristol Metro Project	
Role to hinterland as market towns		
East Fringe of Bristol	2021	NA
No substantial infrastructure is completed before 2021. M4 link unlikely to be permitted by HA but URS analysis suggests not required, (GBSTS recommends scheme not adopted). Infrastructure requirements not identified, aggravated by lack of spatial planning. URS anticipate substantial development pressure on A4174 corridor which will need remediation. Orbital BRT suggested by URS as part of this. Emerson's Green is relatively well advanced and this judgment applies predominantly to the Proposed Area of Search East of Kingswood. URS suggest A420 route treatment into Bristol to facilitate this PKDS.		
Development in South Bristol and at the East Fringe is largely focused on the end of radial corridors, which are acknowledged as having	BRT Emerson's Green to Temple Mead Rapid Transit North Fringe to Emerson's Green are considered robust. URS recommended Orbital	Relatively little progress has been made on identifying schemes specifically to support development in the East fringe by the WEP and South Gloucestershire to date. It is recognised that a major study is required to provide this (Core Strategy 2008 Issues and Options). Despite the lack of direct work it is possible to identify a number of schemes

ISSUES	SCHEMES	SIGNIFICANCE FOR PKDS
poor levels of accessibility in the Preferred Options document	BRT	that will enable development The schemes with most significance for the East Fringe are likely to be those that will improve public transport. As well as helping to free some existing capacity on the road network the BRT Phase 2, Rapid Transit to Kingswood, and improved interchange at the University of West England will ensure good connectivity to central Bristol and across the north of the city, the North Fringe. However, there are likely to be issues that the existing schemes cannot address. The importance of a detailed study once the development sites have been more specifically identified cannot be over-estimated.
A4147 Ring Road at capacity	A4147 Avon Ring Road junction improvements	Although there may be local pressure for a link from the M4 into the East Fringe the GBSTS did not recommend the scheme, nor does it have support from the Highways Agency. Furthermore URS's analysis suggests that there is no great demand for access to the motorway to/ from the east for development traffic. As a consequence it is recommended that this scheme is not considered as an option and it has not been included in the scheme list or the funding model.
BRT route 2 critical to deliverability	BRT Emersons Green to Temple Meads Rapid Transit North Fringe to Emersons Green	The rapid transit route to Kingswood could be extended into the East Fringe. It is understood that Emerson's Green is at a relatively advanced stage, that transport schemes have been identified for it, and that the site will therefore be taken forward. However, schemes that will cater for the travel demand at a strategic level are not clearly defined for the most part and where they do exist (e.g. Rapid Transit North Fringe to Emerson's Green) will not be completed in the short term. This is likely to lead to 'pain' on the transport network in the period between substantial development at the site and the completion of infrastructure required to cater for travel demand at full build-out.
Ensuring robust links between existing communities and urban extensions	URS suggested Orbital BRT URS suggested A420 Route Treatment A4147 Avon Ring Road junction improvements Cycling Major Scheme Rapid Transit to Kingswood	
M4 link has not been recommended by GBSTS due to impacts on strategic and local road network (including traffic generation) despite strong economic case. Not supported by the HA. Concerns from residents that this is required		
Transport is poorly developed, detailed study required to identify improvements but funding for this not identified Very little housing could be delivered without substantial transport improvements. Detailed study required. What triggers before new infrastructure required?		

ISSUES	SCHEMES	SIGNIFICANCE FOR PKDS
Potential for scattered development will reduce public transport viability and sustainable accessibility		

Transport costs and funding have previously been identified for the sub-region

- 6.46 The published Transport Vision for the sub-region has previously been estimated at a cost of £2.5b to 2026. The money allocated to committed schemes and funding from other organisations and bodies already accounts for over £750m.
- 6.47 Assuming that existing funding continues at the same level up to 2026, there is still a shortfall of at least £1.7 billion.
- 6.48 We have calculated the costs and available funding for schemes in the sub-region through this study. Our assessment has however generated different figures, particularly in the case of costs. Given these differences it is important to bear in mind the following, which together account for at least some of the variation:
- At the request of the WEP we have re-based our costs to 2008 wherever practicable to provide a common price base; and
 - As identified above our scheme data excludes preparation and land costs as well as the cost of smaller schemes that fall below the scope of this study because of their scale.

Total costs have been calculated

- 6.49 In this section we look at costs of transport infrastructure for the West of England and the PKDS. It is important to note that these numbers are subject to the same caveats as others in this report. These are discussed in detail in section 1.

Total costs of transport schemes (including both PKDS growth and historic deficit) in the West of England is £1.7b

- 6.50 The cost of all schemes identified in the ICT comes to £1.601billion (including £127.1m for schemes that do not map to PKDS), with the additional cost of the schemes suggested by URS at £116m. This delivers a total transport infrastructure cost of £1.716b. This figure represents the total cost of all schemes and therefore includes cost elements associated with both the PKDS and historic deficit. The following sub-sections identify costs against packages and corridors and then between the PKDS and deficit.

The costs of the individual packages and transport corridors

- 6.51 The contribution to this cost from each package and corridor is shown in Table 6.4. Care must be exercised when comparing the relative costs of packages and corridors as not all costs cannot be identified for every scheme due to insufficient published evidence or a lack of confirmed scheme detail at this time. We do however discuss it here but only as a guide.
- 6.52 Collectively the greatest cost of schemes flow from the South Bristol Corridor, which includes schemes such as the South Bristol Link Phases 1 & 2 and the Callington Road Link/ Bath Road Improvements. The least expensive (where all costs are available) is the Weston package phase 2, although at present this only contains the Banwell Bypass/ A370 Locking Road Link.

Table 6.4 Costs of Packages and Corridors

Package/ Corridor	Cost (£ m)
Bath Package	53.1
East Fringe Package	57.1
North Fringe to Hengrove package	134.4
South East Bristol Package	108.1
Weston package phase 1	39.2
Weston package phase 2	49.5
Yate Package	45.0
Bath-Bristol Corridor	219.5
Central Bristol Corridor	26.8
East Bristol Corridor	20.0
Estuary Corridor	210.1
North Bristol Corridor	20.2
South Bristol Corridor	253.5
Weston Corridor	184.3
Multi-Corridor	180.3
URS Suggested Schemes	115.5
Total	1,716.4

Source: URS

Stripping out historic deficit costs to isolate an infrastructure cost generated by the PKDS

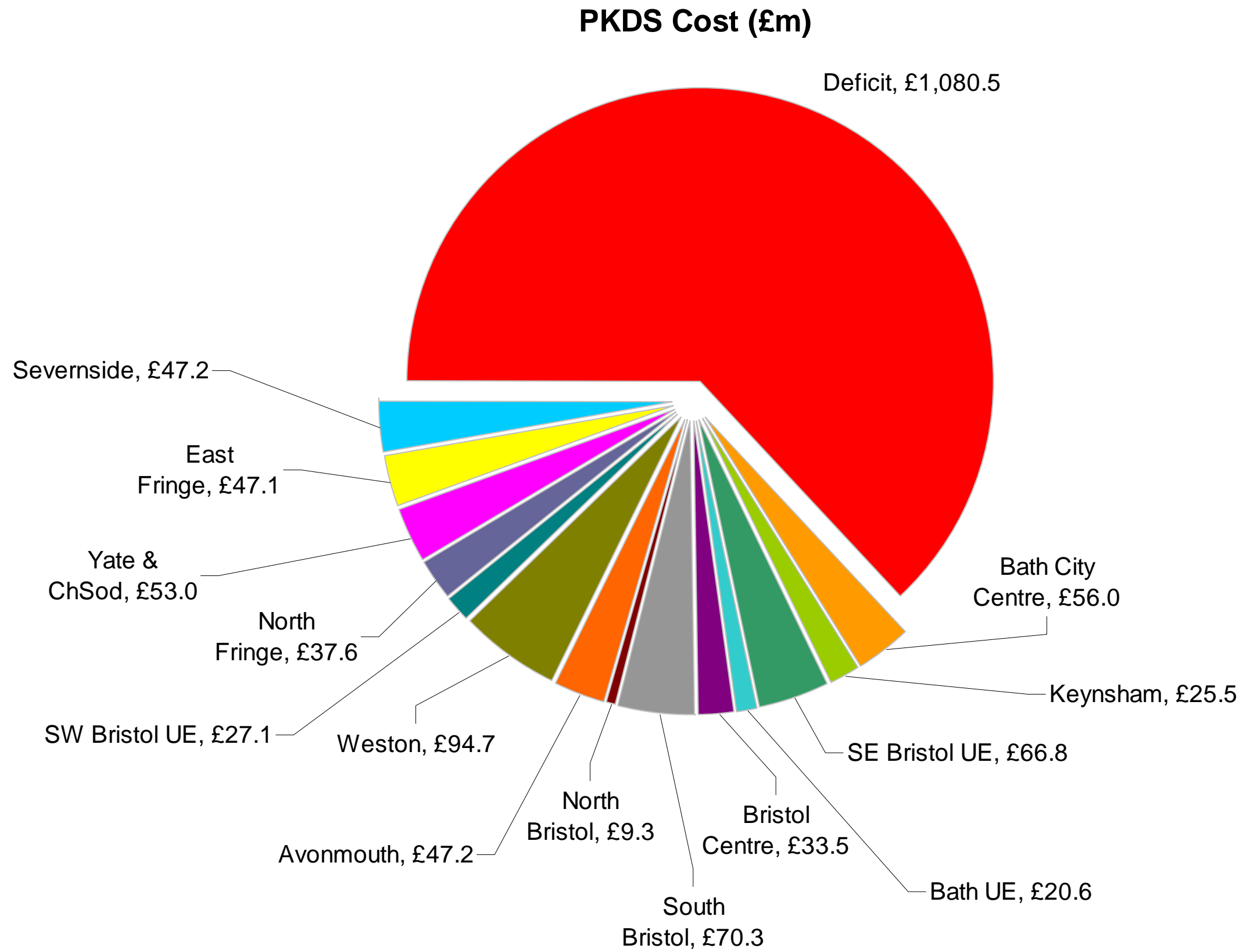
We categorised schemes according to the extent they service existing supply problems

- 6.53 We have calculated the cost for each PKDS using the schemes collected in the Infrastructure Capture Table (ICT) and assessed in the Scheme Viability Assessment (SVA). Our SVA identifies the PKDS that each scheme would enable and the extent to which each PKDS is dependent on the scheme (high, medium, or low). In agreement with the West of England Partnership, URS has identified the extent to which each scheme services historic transport deficit on the network through qualified judgements (high, medium, low, or none).
- 6.54 The cost of most schemes was identified in the ICT. We have recognised that historic deficit is significant and therefore we have discounted a proportion of the cost of each scheme according to the extent to which it services existing issues. We have used discount values of:
- 100% - in the few instances where the scheme only services historic deficit, meaning that no cost can properly be ascribed to PKDS growth;
 - 75% - where the scheme is considered to primarily service historic deficit, with the balance servicing PKDS growth;
 - 50% - where the scheme services historic deficit at a medium level;
 - 25% - where the scheme services historic deficit at a low level; and
 - 0% - in the few instances where a scheme will cater almost entirely for one or more PKDS.

The bulk of transport infrastructure costs go to supporting historic deficits. The remaining costs go to supporting growth at the PKDS

- 6.55 After the cost of deficit is identified in this exercise above, the remaining cost is allocated to PKDS according to our analysis in the Scheme Assessment Table.
- 6.56 No attempt has been made to weight scheme costs according to the extent to which they enable the different PKDS. This is because there is no robust evidence to support such an allocation. The additional schemes suggested by us have been attributed to PKDS using the same method.
- This exercise allows us to isolate a “transport infrastructure cost of growth”. We then split those transport costs across the PKDS that they assist*
- 6.57 The cost of each PKDS is shown in Figure 6.3. It shows overwhelmingly that the largest cost is attributable to historic deficit (£1.081b). This supports the previous findings of GBSTS that much of the transport infrastructure is already required, irrespective of any further growth within the sub-region. Tables showing the schemes attributable to each PKDS can be found in Appendix 7.
- 6.58 Thus the costs of transport infrastructure attributable to growth in the PKDS is estimated at £635m. The costs amongst the PKDS vary significantly from £9.3m at North Bristol to £94.7m surrounding Weston-super-Mare.

Figure 6.3 Transport costs by PKDS (showing historic deficit and costs allocated to PKDS uncommitted growth) Source: URS



6.59 To some extent the cost variation is proportionate to the number of dwellings intended for each PKDS. There are, however, some notable exceptions including South West Bristol Urban Extension (fifth largest PKDS, ninth largest cost) and North Bristol (seventh largest PKDS, thirteenth largest cost).

6.60 In the case of SW Bristol Urban Extension this may be because the large pieces of infrastructure on which it depends are shared across a range of other PKDS, with any more localised infrastructure required likely to be smaller and recovered through Section 106 agreements. For North Bristol the same may be true although, in addition, much of the infrastructure supporting this already relatively densely populated area will be in place (for example a well defined road network) and it is unlikely that major transport costs such as a new rail alignment and stations could physically be incorporated into the area, leaving only relatively small costs to be incurred.

The cost of infrastructure will be underestimated

6.61 The total costs for transport infrastructure will be underestimated to some extent, because:

- The costs included in this study are the capital (or capitalised) costs only. They are likely to exclude preparation of a scheme and may exclude land costs, both of which can be substantial; and
- This study is strategic in nature and so excludes the majority of schemes that will cost less than £5m, including many schemes that will feature into current and future JLTP programmes. and
- Not all schemes have been identified. Whilst we have suggested additional schemes for consideration by the West of England Partnership this exercise will need to be completed in more detail once plans are more defined.

6.62 It should also be remembered that as far as practicable all costs and funding values presented are given in 2008 prices and as a result will not correspond directly to published scheme costs. This does not represent a change in the costing of a scheme but in the way that it is reported.

How can new infrastructure be funded?

A number of funding streams are available

6.63 A number of funding opportunities are available to the West of England Partnership to help fund the transport infrastructure necessary to mitigate the historic deficit and help enable growth. These are:

- Regional Funding Allocation (RFA) provides the principal funding mechanism for local authorities to obtain major scheme funding (funding for schemes over £5m). Bids are submitted to the regional government office, which makes its funding recommendations to central government. The money available through this process is limited (£1.023b for the ten years to 2018/19) and must be shared across the region.
- DfT funding will come through its executive agencies such as the Highways Agency or Network Rail. There are few opportunities where this funding may benefit the study area as the priorities for this funding are set against national priorities and are often not focussed on enabling development;
- Growth Point Funding provides support to local communities who wish to pursue large scale and sustainable growth, including new housing, through a partnership with Government. The West of

England Partnership has been designated as a Growth Point and was awarded £21.3m between 2008/9 and 2010/11. However, it is not clear that there will be further funding available following this allocation, and cuts to existing funding have recently been announced;

- The principal Local Authority funding comes through the Local Transport Plan. This provides funding for transport schemes under £5m for 5-year periods. Local Authorities are required to provide their Local Transport Plans which enables DfT to allocate funding according to its judgement of aspirations and achievability. The Unitary Authorities in the West of England Partnership may also choose to supplement this funding stream from other sources within their own budgets;
- Developer contributions can be secured for specific schemes, or where appropriate for the complete cost of a scheme required to mitigate the impact of the additional travel demand;
- Regional Infrastructure Fund (RIF). RIF is a mechanism through which a region can forward fund major infrastructure schemes. The cost of the capital investment would then be recovered from pre-determined public and/or private funding streams as they become available. Note, however, that RIF is not a grant. The future activity of the scheme relies for the most part on the anticipated receipt of Section 106 contributions, and these are currently under pressure.
- Operators of services such as public transport may provide contributions towards funding for schemes. This may be as part of a Quality Bus Partnership (or contract) on a less formal basis where the operator may perceive benefits to them in improving the transport network and are willing to contribute towards the cost;
- Transport Innovation Funding is provided by DfT to pump prime packages that tackle congestion. Up to £200m is available each year up to 2018/19. There have been restrictions in the past requiring congestion charging or at least a workplace parking levy but recent developments indicate that this may be under consideration;
- There may also be funding that the partnership anticipates will come from the sources above or other sources but could not yet be classed as committed funding; and
- S106 contributions can be claimed from developers to fund infrastructure associated with development. (Whilst it is acknowledged that there are existing S106 agreements in place relating to a number of the sites included in this study - including potential contributions towards transport packages -there is no evidence that these contributions would enable development to proceed at a faster pace than has been assessed in the traffic lights table).

Progress to date

Already secured funding

6.64 The sub-region has been successful in terms of securing infrastructure funding to date, for example:

- Joint Local Transport Plan, which brought substantial funding to the West of England area for 2006/07 to 2010/11 of almost £12m per year³⁸. The partner authorities are also committed to

³⁸ West of England Growth Point Programme of Development - Submission to Communities and Local Government - 1 October 2008

contributions from transport and potentially other budgets beyond 2011 to deliver the programme of major schemes included in this study;

- The Partnership is progressing 5 successful 'Major Scheme Bids' through the Regional Funding Allocation Process. These include the Greater Bristol Bus Network, work for which is currently underway, and the Bath Package that has 'Programme Entry' status;
- Funding contributions have been secured from developers and local transport operators;
- In addition, the West of England has been awarded £1.5m from the Transport Innovation Fund to develop a package of high quality public transport alternatives in combination with 'restraint' measures, ranging from parking charges to - potentially - congestion charging. The TIF bid also recognised the importance of walking, cycling and influencing travel behaviour measures as a means to reduce the need to travel short distances by car, in particular the role of 'smarter choices'.

6.65 The funding that has been secured to date means that substantial investment can proceed. The majority of this funding is from the RFA and so the implementation period is between 2009 and 2019. Those schemes that are funded are incorporated into:

- The Bath Package;
- The East Fringe Package;
- The North fringe to hengrove package; and
- Both Weston Packages.
- There are also a number of schemes that are fully funded within the additional transport corridors identified for this study, examples include:
 - The Greater Bristol Bus Network;
 - M4/ M5 Managed Motorways;
 - Bus/ rail interchange at the Southgate development in Bath;
 - Portishead railway;
 - South Bristol Link Phases 1 & 2;
 - Rapid Transit Ashton Vale to Temple Mead; and
 - The M5 J21 bypass.

Our findings suggest that, where they are evidenced, scheme implementation years are suitable

6.66 It is not within the scope of this study to make a detailed assessment of each scheme and whether it can be delivered within the timescale stated. It is, however, possible to draw some broad conclusions about the timing of schemes.

6.67 The infrastructure with the best indication of timescales are those that have committed funding. For schemes that have RFA funding status it is expected that the West of England Partnership and relevant unitary authorities are working to realistic timescales when submitting funding bids based on their experience of submission and delivery.

6.68 Furthermore it is known that in the example of the Bath Package where there is potential for issues such as a public inquiry, such matters have been taken into account in the scheme programme. We have therefore judged that these schemes have suitable implementation years.

Outstanding funding bids

6.69 The West of England Partnership is also progressing a bid through the Transport Innovation Fund (TIF) process. This has not been included in this study due to the uncertainty that currently surrounds the criteria for this funding stream (and therefore potentially the desirability to pursue it).

There is a funding shortfall after taking secured funding into account

6.70 The table below shows the cost of each package and corridor, the funding available, and the resulting funding shortfall (gap). It also indicates the sources of funding as percentages.

6.71 Committed total funding (for projects that address both PKDS growth and historic deficit) amounts to £763m. The largest source for funding is the RFA. This represents secured funding and so should not pose a risk to implementation. The small amount of uncommitted funding is generated in Weston package phase 1. There is some uncertainty regarding the implementation of the Cross Airfield Link and Airfield Bridge Link (it is not clear when these schemes would be taken forward or whether they are feasible alongside the other schemes in the package) and as a result the funding for these schemes appears as uncommitted. There is a small amount of developer funding in the total committed funding (£28m) that has already been agreed. If removed, this leaves approximately £735m. This is £346m below the £1.081b identified as the cost of deficit in Figure 6.3 Transport costs by PKDS, indicating that at present funding is not sufficient to mitigate historic deficit.

6.72 The total funding shortfall is £953.3m, 56% of the total cost of transport infrastructure and 125% of available funding³⁹.

³⁹ Excluding schemes suggested by URS the funding shortfall is £838m, this represents 49% of the total cost and 110% of the total funding.

Table 6.4 Cost and Funding⁴⁰

Package	Cost (£m)	Funding (£m)	Funding Gap (£m)	Funding Source				
				RFA	Local Auth	Agreed Developer	Operator	Uncommitted
Bath Package	53.1	53.1	0.0	87%	4%	5%	5%	0%
East Fringe Package	57.1	57.1	0.0	90%	10%	0%	0%	0%
North Fringe to Hengrove Package	134.4	134.4	0.0	90%	10%	0%	0%	0%
South East Bristol Package	108.1	0.0	-108.1	0%	0%	0%	0%	0%
Weston package phase 1	39.2	39.2	0.0	55%	9%	4%	0%	32%
Weston package phase 2	49.5	49.5	0.0	90%	10%	0%	0%	0%
Yate Package	45.0	0.0	-45.0	0%	0%	0%	0%	0%
Bath-Bristol Corridor	219.5	19.5	-200.0	0%	0%	100%	0%	0%
Central Bristol Corridor	26.8	22.8	-4.0	90%	10%	0%	0%	0%
East Bristol Corridor	20.0	0.0	-20.0	0%	0%	0%	0%	0%
Estuary Corridor	210.1	0.0	-210.1	0%	0%	0%	0%	0%
North Bristol Corridor	20.2	0.0	-20.2	0%	0%	0%	0%	0%
South Bristol Corridor	253.5	192.6	-60.9	90%	10%	0%	0%	0%
Weston Corridor	184.3	42.2	-142.1	90%	10%	0%	0%	0%
Multi-Corridor	180.3	152.7	-27.6	84%	8%	2%	6%	0%
URS Suggested Schemes	115.5	0.0	-115.5	0%	0%	0%	0%	0%
Total	1716.4	763.1	-953.3	76%	9%	6%	2%	8%

Note: Total percentage sums to 101 due to rounding

Source: URS

Some packages are well funded. Some packages remain largely unfunded

- 6.73 Funding streams and methods identified for certain elements eg Bath package in RFA 2 and individual schemes from the corridors, such as the examples identified above, have robust costs and funding.
- 6.74 There are clearly a large proportion of schemes that are unfunded and in some cases it is not yet practicable to identify costs given the current status of development in the Local Development Framework or design process. It is reasonable to anticipate that some funding will come through from sources such as RFA bids and developers (although this study does not seek to allocate currently uncommitted developer funding). This will be for the period post-2019 but it is unreasonable to imagine that the full funding shortfall will be met, particularly in the light of evidence in section 1 which shows that there will be a significant public funding shortage.

⁴⁰ Where possible and appropriate all costs have been calculated to a 2008 price base

- 6.75 When prioritising schemes both the availability of funding and the benefit delivered by a scheme will need to be considered, amongst other issues

The allocation of existing funding is likely to come forward in a timely manner

- 6.76 Where infrastructure has committed funding and has been profiled to make allowance for construction of the scheme we have found that the funding aligns with scheme programming. This means that if a scheme is anticipated to be completed between 2013 and 2015 there is three years of funding available.

- 6.77 This is presented in a simplified form in Table 6.5. Each of the 5-year periods are shown with the cost of those schemes that have funding and the funding that is available for them. In each case the amount of funding matches the cost for that period. For more detail on the profile of costs and funding please refer to the funding model.

Table 6.5 Profile of Funding

	2011	2016	2021	2026	Total
Cost	89	283	390	0	763
Funding	89	283	390	0	763
Difference	0	0	0	0	0

- 6.78 It is important to note that Table 6.5 excludes the cost of those schemes that do not yet have any identified funding. This will be required in a timely manner to ensure deliverability of both the schemes and the housing and employment growth is robust.

Where a scheme has no funding it is unreasonable to assume that it will go ahead

- 6.79 While it is reasonable to include it in the long-term transport strategy for the sub-region as it is necessary to meet travel demand, there is a need to pursue realistic expectations in terms of how likely the scheme will be when attempting to secure funding. There are examples across the country of proposed schemes delayed for many decades in part at least because funding was never forthcoming. This may apply to items on the infrastructure list such as the Bristol Bath Corridor Transport Package and the Weston-super-Mare to Bristol International Airport to South Bristol Link.

- 6.80 Given these realities, we have assigned some schemes with a completion date of 2026, to acknowledge both that RFA funding is already allocated to 2019 and in response to the fact that scheme implementation may be uncertain.

The transport funding gaps have potentially far-reaching implications. The PKDS that are dependent on transport infrastructure packages with a large funding gap may be more difficult to get away within the short to medium term

- 6.81 PKDS that a) require heavy transport infrastructure investment, and b) lack identified funding to support that investment will be more difficult to bring forward.

- 6.82 Table 6.6 suggests that these areas are likely to be South East Bristol Urban Extension, Avonmouth & Severnside (the Estuary Corridor), and Yate. The East Fringe could also be included with these because although the East Fringe Package has funding it is likely that more schemes will be required and without identifying them they cannot be costed or assessed for robustness.

- 6.83 It is likely that the funding gap along the Bath-Bristol Corridor will principally affect development around south east Bristol, including the proposed urban extension and the phasing of development in Keynsham. However, this does not mean that Bath would be unaffected and in particular access between Bristol and the Bath Urban Extension may be affected because there are currently no direct public transport measures with funding from the potential site of this growth area.
- 6.84 Areas where funding is more robust are Bath Centre, Weston, and within the built-up area of Bristol and the North Fringe. However there are still funding shortfalls in these locations. The way in which the funding shortfall is met, including when it is met, is likely to impact on the phasing of growth if full build-out is to be achieved.

Table 6.6 Transport funding gap ranking (1= the largest gap)

Package	Cost (£m)	Funding (£m)	Funding Gap (£m)	Funding Gap Rank
Estuary Corridor	210.1	0.0	-210.1	1
Bath-Bristol Corridor	219.5	19.5	-200.0	2
Weston Corridor	184.3	42.2	-142.1	3
URS Suggested Schemes	115.5	0.0	-115.5	4
South East Bristol Package	108.1	0.0	-108.1	5
South Bristol Corridor	253.5	192.6	-60.9	6
Yate Package	45.0	0.0	-45.0	7
Multi-Corridor	180.3	152.7	-27.6	8
North Bristol Corridor	20.2	0.0	-20.2	9
East Bristol Corridor	20.0	0.0	-20.0	10
Central Bristol Corridor	26.8	22.8	-4.0	11
Bath Package	53.1	53.1	0.0	12
East Fringe Package	57.1	57.1	0.0	12
North Fringe Package	134.4	134.4	0.0	12
Weston Package 1	39.2	39.2	0.0	12
Weston package 2	49.5	49.5	0.0	12

Source: URS

We look at the impact that non-transport and other issues have on sequencing later in this report

- 6.85 Clearly, it is important to bear in mind that transport funding gaps are not the only determinant of site sequencing choices, and we analyse sequencing choices across a number of different dimensions in Section 11.
- 6.86 There are, in some cases, capacity constraints and infrastructure 'deficits' that impinge on the ability to accommodate future growth.

Issues and barriers to growth

- 6.87 In addition to the issues and significance to development described above, a number of key issues should also be noted. In each case these apply to all PKDS unless otherwise stated.

There will be significant negative effects if planned growth proceeds without proper transport infrastructure

- 6.88 We have identified a substantial funding shortfall. If this gap cannot be bridged it is likely that sub-region will be left with travel conditions that are far worse than we currently experience. In the absence of transport network improvements existing issues will be further compounded by growth, which could affect the economic prosperity of the area, especially if business perceive travel conditions as a barrier to investment. In addition the health and wellbeing of residents will be affected as air quality worsens with increasing congestion and noise.
- 6.89 Table 6.6 above highlights how, even with existing commitments, some schemes that have funding cannot be completed until the period ending 2021 as this is when the final elements of funding become available. With current congestion on the transport network and the impact of anticipated growth over the period 2009 to 2021 the legacy of historic deficit will continue to be an obstacle in the long-term unless more immediate and alternative funding can be found.

Containment strategies are unlikely to be sufficient to mitigate the full impact of growth

- 6.90 It is recognised that in both Weston-super-Mare and Yate there is a strategy for containment. This means internalising as many journey to work trips as practicable. The approach will be an important mechanism to reduce the need to travel by car and to increase the viability of travel by bus, walking and cycling.
- 6.91 On its own it unlikely to be sufficient to mitigate the full impact of growth. Recent history indicates that when a person moves jobs, even if that means a change in town, that they will not generally be inclined to move where they live. Transport interventions including expensive infrastructure will be required to recover from the historic deficit and accommodate new travel demand.

Weston and Avonmouth and Severnside impacts need further investigation

- 6.92 We have identified reservations from the Highways Agency with regard to Avonmouth and Severnside pending more detailed planning and certainty for the area. Until such matters are resolved it is likely that these reservations will remain. It is also likely that the HA will remain reluctant to support growth until such time as a more confident picture emerges to provide reassurance that the impacts can be accommodated or will be mitigated.
- 6.93 Similar issues may be experienced at the Weston PKDS. With only one strategic route in and out of the town the substantial growth there will place a substantial amount of additional stress on the M5. Junction 21 will play a crucial role in the development of the Weston PKDS and the HA will need to be satisfied that it can continue to operate effectively. Without evidence that the impact of growth to the east of the existing town can be accommodated by the existing or additional schemes objections may be raised.

There is significant reliance on BRT and the Greater Bristol Metro Project

- 6.94 There are a significant number of Bus Rapid Transit (BRT) and Rapid Transit (RT) schemes proposed for the sub-region, particularly for the period to 2021. The Greater Bristol Metro Project is also due for completion to a similar timescale. The Greater Bristol Bus Network is also an important part of the West of England Partnership transport vision.

6.95 All of the PKDS are enabled by at least one public transport scheme, in many cases there are a number of BRT schemes that a PKDS is considered to be required and the GBMP is relevant to all sites. This highlights the importance of delivering these schemes on time to enable development to proceed.

Decisions need to be made about the South Bristol Link

6.96 The South Bristol Link Phases 1 & 2 is a Priority Item, due for completion by 2016. There are currently a number of options, presented in the South Bristol Link Option Appraisal Report (February 2009). The scheme is considered to be necessary for both the South West Bristol Urban Extension and South Bristol, and may also provide some benefits to the South East Bristol Urban Extension.

6.97 At present it appears that although there is agreement that the scheme is required its concept is yet to be defined, particularly with respect to the mixture of traditional highway and Bus Rapid Transit in the scheme. Given that construction may begin as early as 2014 it is recommended that the concept should be defined as soon as possible to ensure that the progress through major scheme approval is timely to allow construction to begin on time and consequently enable development as early as practicable. It is recommended that the preferred option should give serious consideration to favouring BRT, as this will support the existing strong emphasis on sustainable transport in the sub-region.

Some packages are not sufficiently defined

6.98 It has been identified above (and is evident in the SAT) that there are some packages that have not yet been well defined. Key examples include:

- The East Fringe Package (although this package is fully funded it is acknowledged by the local authority that a detailed transport study for the PKDS at this location is required);
- The Yate Package;
- The Bristol Bath Corridor Transport Package; and
- The South East Bristol Transport Package.

6.99 Discussions with the relevant local highway authorities indicates that these packages would comprise of schemes such as additional rapid transit and other public transport enhancements, potential highway improvements, and new Park & Ride sites.

6.100 Because there are further schemes to be identified there are some PKDS cannot be judged to be suitable for full build-out unless a degree of 'pain' is accepted. It is not recommended that this approach is adopted for the long term but that instead the required studies are completed as a matter of importance, accounting for both full build-out and interim years (to allow phasing to be assessed in greater detail). In some cases this will require the spatial distribution of the PKDS to be identified more accurately than at present. It is understood that in some cases steps are being taken to progress this work.

Funding uncertainty

6.101 Upcoming elections represent a potential threat to Regional Funding Allocations. The Conservative Party have suggested that RFAs would be abolished, along with some levels of regional governance, should they come to power at the next general election that must take place by June 2010.⁴¹

6.102 The potential for RFA funding to be withdrawn, and in particular RFA2 funding, would be likely to have significant implications for the sub-region. Whilst it seems unlikely that all transport funding would be completely withdrawn the potential change in funding sources could jeopardise scheme programmes and there may be no guarantee that currently approved schemes would remain so under a revised funding regime.

Long time horizons require carefully managed preparation

6.103 Some transport schemes have long time horizons, including beyond 2020, which results in the restraints shown in the traffic lights table. It would be inappropriate to consider that, because of these medium to long term time horizons, no progress can be made in the intervening years.

6.104 For example, it is identified in paragraph 6.100 that there are a number of studies to be completed. These should be completed in the near future to facilitate the identification of further infrastructure requirements. Similarly the progression of a major scheme requires substantial preparative work over a number of years and sufficient time should be identified to allow this work to be completed robustly and taken through the required approval stages.

Judgements with respect to phasing of development have been constrained by gaps in the evidence base. We have plugged the gaps, but more detailed work needs to be done

6.105 There are weaknesses with the existing evidence base. The existing evidence base does not allow assessment of the impact of the PKDS on the road network, but combines the impact of growth with existing travel demands and background growth. This study therefore has had to use the existing evidence base supplemented by information from CommuterView and ODYSSEUS software packages to review travel patterns and behaviour associated with PKDS growth to isolate the potential impact of the PKDS.

6.106 Furthermore, the available information, particularly when modelling the impact of growth, is presented only at full build-out, with no indication of the impact for interim years (2011, 2016, 2021) or scenarios where development is omitted. This means that there is no available evidence of the condition of the transport network with background growth only (no development) or at key points through the period to 2026, showing the state of the network as development is implemented over time.

6.107 From the evidence base available it is, therefore, only practicable to make relatively broad judgements about phasing the delivery of PKDS in parallel with schemes. A more accurate assessment can be made of full build-out because this has been tested through extensive modelling work provided by GBSTS and supplemented with the additional modelling work undertaken by URS.

⁴¹ 'Babies & Bathwarer?'. Local Transport Today, Issue 514. 27th February 2009.

6.108 We acknowledge that development phasing in some cases will be able to come on-stream in advance or in parallel with some of the transport infrastructure. It should however be recognised that in some cases delivery of development in the absence of key supporting sustainable infrastructure could herald a period of “pain” on the transport network and risk habituating unsustainable travel patterns. It is recommended that further work on the phasing of development in relation to transport constraints is therefore undertaken.

7 EDUCATION: WHAT KEY INFRASTRUCTURE IS REQUIRED? WHAT ARE ITS COSTS AND FUNDING? DO BARRIERS TO GROWTH EXIST?

Introduction

7.1 This section looks at the requirements, costs and funding of the necessary education infrastructure to cope with uncommitted growth in PKDS to 2026. We focus on primary, secondary, post 16, and special education needs.

7.2 We have worked closely with the Children's Service providers in each of the four authorities to develop the locally specific assumptions relating to capacity, pupil yield and build cost estimates and funding to inform this work. The service providers are working to a much 'bigger picture' of their service provision, and are aware of infrastructure requirements coming forward as part of approved Section 106 Agreements. It has been important to differentiate the role of this study which is to look to future requirements that have not been through the detailed planning application stage and not 'double count' infrastructure requirements that have already been accounted for. Whilst we have worked closely with LEAs, then, this report does not necessarily represent their views.

7.3 It is important to highlight at the outset that finer grain analysis will be required as details on specific locations of growth emerge to inform the detailed planning requirements of individual areas.

Children's Services are in a rapidly changing environment. This work can only provide a snapshot of the current situation, and will require careful ongoing review

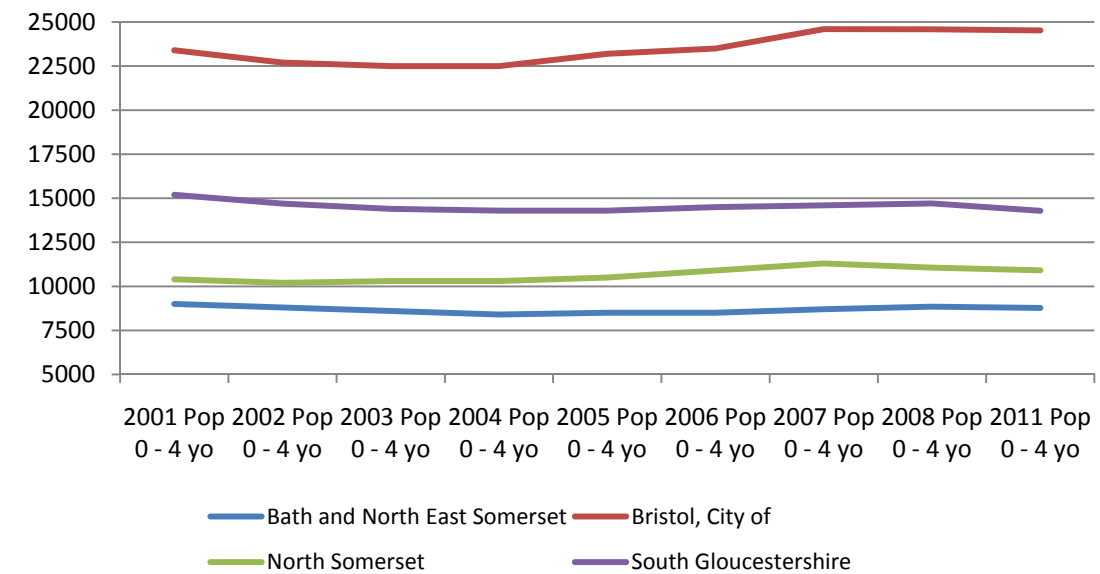
7.4 Children's Service providers are working within a fast changing environment with a number of variables that are to some extent interdependent in planning for future infrastructure requirements. Whilst considering how best to remodel or rebuild existing schools, consideration needs to take account of the likely future demand for the infrastructure. However, much of this information is still being shaped. Thus it is important to recognise, that for education infrastructure much of the information provided by stakeholders is subject to considerable change and will need timely updating.

7.5 The Government plans a radical change to the qualification routes available to students aged 14-19. It aims to increase the numbers of pupils staying on in education after the age of 16, through extending the range of opportunities available to them and particularly the number of vocational courses available. There is a move to transfer post 16 education funding from Learning and Skills Councils to local authorities in March 2010. The creation of Academies and the delivery of the Building Schools for the Future and Primary Strategy for Change to help rebuild or refurbish identified schools to equip them for the 21st Century means that service providers are facing a time of considerable change.

Influences affecting education infrastructure requirements

7.6 A number of factors will influence education infrastructure requirements, including birth rates and demographic changes. The figure below shows the total forecast population (000's) of 0-4 year olds between 2001 to 2011.

Figure 7.1 4 Years Population birth and forecast to 2011



Source: RTP based on ONS upto 2007, and 2008 onwards based on map info.

7.7 Long term forecasting is difficult, as it is based on *projected demographic data*, and RSS housing requirements rather than actual births and delivery of planning consents. There are some important trends that follow from this chart which will affect future requirements for primary and secondary schools. The effect of this birth takes time to filter through to primary and secondary schools.

7.8 The figure above shows that Bristol has experienced the greatest change, moving from a position of decline up to 2004 to a sharp increase and then stabilising from 2008. The other three authorities also experienced a slight dip around 2004 and then have risen in numbers, particularly North Somerset. South Gloucestershire is forecast to dip again slightly during 2008 - 2011.

7.9 Other influences on infrastructure requirements include the timing of new development, and in this instance the success of authorities such as Bristol and to a lesser extent South Gloucestershire in stemming the out migration of pupils to adjoining authorities such as North Somerset and B&NES.

Overall there is a current surplus in capacity but this will change over time. It is a policy objective to reduce surplus capacity

7.10 As the summary tables below show, all four authorities have surplus capacity. Most are around the Audit Commission guidance of 10% surplus. North Somerset has the least capacity and is in some places at capacity. In both primary and secondary schools, South Gloucestershire has slightly higher levels of surplus capacity than the recommended 10%, and has an approved Primary Strategy for Change to address the primary surplus, with a planned programme of restructuring and capital investment from 2009 - 2013.

7.11 Bristol, which currently has the highest levels of surplus capacity of the four authorities, has undergone a major restructuring and investment programme in education infrastructure. This takes account of the needs of the current population and forecast birth rates, and the requirement to stem out-migration. It is possible that there could be some capacity in Bristol, South Gloucestershire and B & NES (to a lesser extent) to serve limited future growth requirements to about 2016.

7.12 Based on discussion with the service providers, it is clear that there are various plans to reduce surplus capacities, particularly through restructuring and modernising current infrastructure. Much of this is dependent upon implementing approved Primary Strategies for Change or getting approval for Building Schools for Future (BSF) programmes.

Service providers state that there will be no spare capacity to meet the requirements of new housing. More detailed work will be required to resolve how the competing pressures of housing growth, demographic changes, and stated policy interact

7.13 At this stage, stakeholders were reluctant to reduce the overall requirement or cost of infrastructure stemming from new growth. The key point from the service providers is that the surpluses available will be absorbed by past birth rates, re-organisation of schools and stemming of net out migration and there will not be capacity to meet the requirements of new housing.

7.14 On this basis, where stakeholders have advised us that there is some short term capacity, we have included this in the trajectory analysis. Due to the complications arising from the timing of various programmes, more detailed demographic and local capacity analysis will need to be undertaken.

We caution that developers will challenge any requirement to contribute to education infrastructure where surpluses exist

7.15 However, we would caution that should there be any surplus capacity at the point of planning application, funding via developer contributions may result in a challenge by the developer.

7.16 Therefore, we would suggest that unless it is absolutely clear when and where any surplus capacity will be used (for purposes other than growth) we suggest that it should be used to support growth, thus reducing the overall infrastructure cost over time.

What are the infrastructure requirements and costs resulting from housing and jobs growth?

7.17 We have worked with Local Education Authorities to understand the complex set of education infrastructure requirements and associated costs resulting from housing growth at each PKDS. We have presented this information in tabular form below.

7.18 A few brief remarks need to be made about the content of the table.

- Post 16 Infrastructure requirements: the management of Post 16 provision is currently being reorganised in response to the Government's proposed changes in the leaving age in 2013 (increased to age 17) and 2015 (increased to age 18). Given that there are still a number of areas of uncertainty around this it should be borne in mind that these conclusions may change in future as it becomes clearer how Post16 provision is to be planned and managed.
- For the purpose of this study, based on our judgement and discussions with service providers, we have assumed a 4% yield per 100 dwellings for Post 16 provision for the time being.
- All future proposals for secondary schools and possible academies are aimed to provide for Post 16 provision. However, this is to an extent dependent upon the BSF funding. This study has assumed that there will be a requirement for 16-18 provision and has been incorporated it as part of the secondary requirement (where there is a need to make additional provision).

- Special Needs Education requirements: discussions with service providers resulted in a range of requirements for the Special Education Needs (SEN), from detailed requirements through to an acknowledgement of need. All service providers are looking to meet SEN requirement through mainstream provision, though acknowledging that there is some need for specialist schools. Our estimates for Special Education Needs requirements have been developed using generic assumptions of 2% of population that are SEN and then of these 40% would be in specialist schools, whilst the majority would be accommodated in mainstream provision.
- In the case of North Somerset, the service provider stated that any additional SEN provision should preferably be co-located near any mainstream facility, for instance at RAF Lockington or Airfield. They would also like to consider a special school with agricultural links (as SEN students thrive in land based skills development) and the provision of a post 16 residential housing scheme for SEN, with independent living.
- Nursery and Early Years requirements: although service providers are looking to cater for 0-19 year's children's provision, nursery provision falls within a grey area. Although it is a statutory requirement to ensure this is provided, parents do not have a statutory duty to send children to nursery, and the private sector is usually the main provider of this service. Thus early years provision has not been included in this infrastructure assessment. We suggest that consideration should be given in terms of land provision to be set aside as part of any master planning stage of the urban extensions for nursery provision to be incorporated within the 'community hub'.

How costs have been calculated

7.19 For the purpose of this study, we have worked with the service providers to develop appropriate cost estimates for new schools based on recent examples. The cost estimates do not take account of land costs. Where we propose extension to existing, we have used the DCFS build cost estimates, and applied local multipliers. The estimate for Special Education Needs have been developed using DCFS build cost estimates and local multiplier.

Table 7.1 Education infrastructure requirements and costs (LEA) Bath and North East Somerset

<i>Growth location</i>	<i>Growth requirements⁴²</i>	<i>Cost</i>	<i>Notes</i>
Bath City Centre inc Western Riverside	Primary 979 places = 2 x 420 schools and existing capacity/ expansion of 139 pupils, Secondary expansion of existing 474 pupils and 6 th form provision for 126 pupil	Primary £6m per 420 school x 2 = £12m. And expansion of existing 139 spaces at £1.80m Total Primary £13.80m Secondary and Sixth Form expansion of existing £12.15m.	In order to address 16+ agenda, surplus capacity, and moving towards the supply of more co-educational school places, the 2007 strategy to transform secondary education document approved by Council highlights the following: Consideration should be given to consulting on:- <ul style="list-style-type: none"> The closure of Culverhay boys school and re-opening as a new 11-18 co-educational community school or academy on the current site. The closure of both St Mark's Church of England and Oldfield schools and the opening of a new 11-18 co-educational Church of England school in the north of the city. <p>Thus Secondary requirement could be spread across some or all of the 6 Bath schools remaining after reorganisation and capacity could be planned in at the outset to accommodate growth.</p>
Bath Prop. (UE)	Primary 620 places = 1 x 420 place schools + an additional 200 expansion. Secondary 300 expansion and 80 Post 16 places	Primary £6m per 420 school = £6m + expansion of existing approx £2.60m - Total £8.6m Secondary and Sixth Form expansion of existing £11.02m	The 2007 strategy to transform secondary education document approved by Council highlights that secondary pupils will be accommodated at re-modeled co-educational Culverhay and five other Bath secondary schools (see above note). Thus Secondary requirement could be spread across some or all of the 6 Bath schools remaining after reorganisation and capacity could be planned in at the outset to accommodate growth. Approximate cost for adding capacity in this way is included.
Keynsham Urban Extension (UE)	Primary 850places = 2 x 420 Secondary expansion of existing 411 and 110 post 16 places	Primary 2 x £6m per 420 school = £12m. Secondary and Sixth Form Extension of existing £7.57m	Keynsham is currently served by two co-educational secondary schools - Wellsway age 11-18 and Broadlands age 11-16. The strategy to transform secondary education document approved by Council proposes one school to serve all of Keynsham, on the Wellsway school site which will accommodate growth requirement and existing, subject to the final RSS quotas - still to be agreed. Currently, oversubscribed by in migration largely from Bristol and South Gloucestershire at present.
SE of Bristol Urban Extension (UE)	Primary 2,480 places = 6 x 420 place schools 1200 secondary and 320 post 16 places	Primary £6m per 420 school = £36m 1 new school £27m	The strategy to transform secondary education document approved by Council highlights that to meet the needs of the proposed UE, a new secondary school would need to be built in this area. If the development is centred in one location e.g. Whitchurch then a single secondary school could serve the whole area. If the development is spread across Whitchurch and Hicks Gate, careful consideration would need to be given to the siting of the secondary school and possibly two smaller schools may be necessary.
SEN 2%	71 children with SEN requiring a Special School place	£5.88m children with SEN requiring a Special School place	Requirement based on assumption that 40% of pupils with SEN will require special school provision at cost of £78,200.00 per place and assuming remaining 60% absorbed by mainstream provision. Assuming 2% of

<i>Growth location</i>	<i>Growth requirements⁴²</i>	<i>Cost</i>	<i>Notes</i>
			population are SEN to start with. Could be a new school located in the SE Bristol UE area
Surplus capacity			The 2008 DCFS figures show that there are 1158 (9%) primary surplus places. The 2008 DCFS figures show that there are 1103 (8%) secondary surplus places.
Yield and Cost Assumptions			Primary = 31 pupils per 100 dwellings, Secondary = 15 pupils per 100 dwellings, Sixth Form = 4 pupils per 100 dwellings. School cost estimates based on 420 primary at £6m, Secondary 900 at £18m, 1000 at £24m and 1200 at £27m.
Funding			The indication from the service provider is that new requirement will need to be met by developer contributions. 2008 - 20011 Capital Allocations. Primary capital Allocation £8.38m, Modernisation Allocation £5.69m, Basic Needs Funding £1.61m

Source: RTP, LEAs

Table 7.2 Education infrastructure requirements and costs (LEA) Bristol City

<i>Growth location</i>	<i>Existing capacity to serve growth</i>	<i>Growth requirements⁴³</i>	<i>Cost</i>	<i>Notes</i>
5Bristol City Centre including St Phillips	Very limited - schools are on constricted sites and there are few surplus places.	Primary 420 place Secondary 126 and 6 th Form 34s place	£6m primary Secondary to be absorbed by existing capacity.	Policy to encourage single person housing, so based on discussion with service provider, assumed a 20% of yield (this could change if policy changes). This would result in a requirement of 850 primary pupils, however, it has been assumed that only one 420 primary is likely to be required. This will need to be kept under close review to consider housing policy and mix. A key issue is that sites in the City Centre are constrained with limited capacity to provide new schools. Similarly the secondary requirement of 638 has been reduced to 20% resulting in 126 spaces. Given current capacities, it is assumed this will be absorbed.
6 South Bristol (incl. Hengrove Park)	Some surplus places - but plans in development to reduce this (school amalgamation proposals in development to raise standards). Mix of school site sizes - some are capable of supporting place expansion.	Primary 3127= 7 x 420 Primary and surplus capacity to absorb remaining. Secondary 1512 and 6 th Form 403 places 1 Secondary of 1200	7 x £6m = £42 primary 1 x £27m = £27m secondary	Cost estimates provided by client based on recent builds costs, excluding land costs. 6 th Form requirements based on 4% of population staying on but considerable uncertainties as to choice of education. It has been assumed that some of the current capacities will support this requirement.
7 North Bristol	Too early to say - there are few surplus places - but this is a broad arc with considerable variation in schools sites and varying potential for expansion.	Primary 1646 = (6 x 420 primary) Secondary 796 and Sixth Form 212. (1 x 900 secondary)	4 x £6= £24 primary 1 x £18m = £18m secondary	Cost estimates provided by client based on recent builds costs, excluding land costs. 6 th Form requirements based on 4% of population staying on but considerable uncertainties as to choice of education.
SEN City wide provision	Total population, 2% SEN, and assumption that 40% will be in special school.	88 special needs spaces	£7.16m	2008-2009 DCSF cost per place multipliers including locational factor for SEN is £81,328 Assumption of 2% of overall population will have special education needs, of these, 60% are educated in mainstream provision and 40% will be in special schools Bristol has in recent years met complex high level SEN needs through co-located specialist units.

<i>Growth location</i>	<i>Existing capacity to serve growth</i>	<i>Growth requirements⁴³</i>	<i>Cost</i>	<i>Notes</i>
<p>Surplus capacity</p> <p>Published DCFS 2008 figures show that Bristol had 3,406 (11%) surplus primary spaces.</p> <p>Published DCFS 2008 figures show that Bristol had 3,642 (21%) surplus secondary spaces.</p> <p>Funding</p> <p>2008 - 2011 Capital Allocation shows Primary Capital Allocation of £12.18m, Modernisation Allocation of £10m, Basic Needs of £20.78m</p> <p>Service provider state that funding would be sought from various sources including the following to fund new growth requirements:</p> <ul style="list-style-type: none"> • Developer Section 106; • DCSF Primary Capital Programme; • DCSF School's Capital Grant - New Places; • Capital Receipts. <p>Yield and Cost Assumptions</p> <p>Primary = 31 pupils per 100 dwellings, Secondary = 15 pupils per 100 dwellings, Sixth Form = 4 pupils per 100 dwellings.</p> <p>School cost estimates based on 420 primary at £6m, Secondary 900 at £18m, 1000 at £24m and 1200 at £27m</p>				

⁴³ All land requirements for providing education infrastructure are assumed to be met by developer for this study except for the central area secondary school. The City requirements have been provided by the City Council based on current knowledge of planning to inform the Primary and Secondary Strategies for Change.

Table 7.3 Education infrastructure requirements and costs (LEA) North Somerset

Growth location	Growth requirements ⁴⁴	Cost	Notes
9 Weston Town Centre UE and urban area Requirement of 2655 primary spaces and 1327 secondary spaces and 6th form 190	6 x 420 place primary Expansion of Broad Oak from 900 to 1200 Remodelling of Wyvern from 900 to 1200. One secondary school with Sixth form of 1000 places	£6m per primary x 6 = £36m Expansion of Broad Oak Secondary is £5.03m Re-modelling of Wyvern to an Academy / Secondary - £5.03m New secondary £24m	Development in Weston Super Mare will be inter linked to BSF approval, there is scope to enable expansion of Broad Oak in short term, , possible re-modelling of Wyvern in the town centre to an academy, in the medium term and the need for a new secondary school to server remainder of development. Cost per place DCSF 2008 figure for Extension of Secondary is 16,287 per place. North Somerset locational factor is 1.03, so extension cost per additional pupil included is £16,776 (Alternative may involve the re-modelling of Wyvern, from 900 to 1200 however, this has not been included for now but may be considered as an option) New Secondary school cost estimate based on recent BSF Pathfinder school at Nailsea
10 South West of Bristol (proposed urban extension)	Primary requirement = 2520 (6 x 420 primary) One secondary (requirement 1260) school with Sixth form (180)	£6m per primary x 6 = £36m 1 x Secondary £27m	St Katherine's in North Somerset is net importer of children from Bristol with 80% catchment. Suggestion to move St. Katherine's into new development. New Secondary school cost estimate based on recent BSF Pathfinder school at Nailsea
SEN	82 places required	£6.64m	Assumption of 2% of population as SEN, of these 40% in special school Prefer co-location close to new mainstream provision. Would also like to create post 16 residential .SEN units. Location factor, and cost per place is £80,546.
Surplus capacity	Published DCFS 2008 figures show surplus primary capacity of 1322 (8%) at 2008 Published DCFS 2008 figures show surplus secondary capacity of 1322 369 (3%) at 2008		
Funding	DCFS 2008 - 2011 Capital Allocation Basic Needs Funding - £4.3m, Modernisation Fund - £3.7m, Primary Capital Programme £8.38m BSF bid stage.		
Yield & Cost Assumptions	Primary = 28 pupils per 100 dwellings, Secondary = 14 pupils per 100 dwellings, Sixth Form = 2 pupils per 100 dwellings. School cost estimates based on 420 primary at £6m, Secondary 900 at £18m, 1000 at £24m and 1200 at £27m		

Source: RTP, LEAs

Table 7.4 Education infrastructure requirements and costs (LEA) South Gloucestershire

Growth location	Growth requirements ⁴⁵	Cost	Notes
11 North Fringe of Bristol	2,773 pupils = 6 x 420 primary school 253 expansion of primary. Secondary 1387 requirement = 1x1200 secondary, + 186 expansion and Sixth form expansion (308 requirement)	Primary = £36m (£6m x 6 each) and expansion £3m. Total primary £39m New Secondary = £27m and expansion of secondary £3.35m Total Secondary £30.35m	Secondary expansion included, however, this could be used to absorb current surplus capacity and cross border movements. Cost based on new build at Filton Bristol and expansion of existing at £17,915 per pupil. Primary expansion based on £11,890 provided by client.
12 Yate UE	Primary - 1152 = 3 x 420 primary 576 secondary pupils/ Six Form 128	Primary = £18m Expand existing Secondary £10.32m	Have allowed for the expansion of secondary provision, however, depending on requirement and phasing of BSF there could be some surplus capacity. There is secondary capacity based on current surplus to 2016 and possibly beyond.
13 East Fringe of Bristol	Primary - 2376 = 11 x 420 primary. Secondary - 2376 = 2 x 1200 secondary / Sixth Form (520)	Primary = £66m Secondary = £54m	Secondary cost based on current estimates for Filton Bristol. Some changes will impact from cross border and surplus capacity.
S SEN	107 SEN children	SEN £8.74m	Based on assumption of 2% population as SEN, and assumption of 40% of these in special school,
Funding	Primary Capital Programme £ 8.38m 2008- 2011 DCFS Capital Allocation Modernisation Allocation £8.69m Basic Needs Allocation £12m BSF - not expected to join full BSF programme before 2011		
Surplus capacity	Published DCFS 2008 figures show surplus secondary capacity 2450 (12%) Published DCFS 2008 figures show surplus primary capacity of 3060 13%) surplus capacity		
Yield & Cost Assumptions	Primary = 36 pupils per 100 dwellings, Secondary = 18 pupils per 100 dwellings, Sixth Form = 4 pupils per 100 dwellings. School cost estimates based on 420 primary at £6m, Secondary 900 at £18m, 1000 at £24m and 1200 at £27m		

Source: RTP, LEAs

⁴⁵ All land requirements for providing education infrastructure has not been included in the cost calculations.

7.20 The total cost of education infrastructure required to cope with growth at the PKDS is calculated to be £624.3 million.

How can new infrastructure be funded?

7.21 All service providers have highlighted that the bulk of new growth infrastructure requirements will need to be funded by developer contributions and there are no budgets currently to fund new growth. However, as detailed plans unfold, particularly BSF funding packages, it is likely that a range of sources of funding may be expected to be pooled together to support both restructuring and some element of short term growth. Thus we outline in this section some of the sources of funding that will need to be brought into the model later.

The main sources of funding

7.22 The bulk of schools capital funding is allocated by formula to education authorities by central Government in line with the national spending review. Thus the published information for this study relates to the period from 2008 to 2011. Appendix 10 provides a summary of the Schools Capital Allocations for each of the four authorities.⁴⁶ This funding is provided in the form of a grant or as supported borrowing.

7.23 The main sources of capital funding for the purpose of this study are made up of the Modernisation Funding, Basic Needs Funding, Primary Capital Funding and Building Schools for the Future Funding (where approved). The Summary Tables above provide a breakdown of this funding for 2008 - 2011 for each authority. For the purpose of this study, we have used these figures to show the level of capital contributions currently available, though we note that most of this funding is unlikely to be used for future growth requirements and so has not been included in the funding model. We summarise what each source of funding is intended for as follows.

- Basic Needs Funding. Basic Needs Funding (BNF) is a capital allocation for building investment based on forecast population growth using a national formula (adjusted for area differentials). Some BNF will be available over time for extensions to existing schools as more details become available.
- Modernisation Funding. This capital funding is available to support building programmes for new or refurbishment of existing provision.
- Primary Capital Programme. This is intended to support the rebuilding, remodelling or refurbishment of primary schools that are in poor physical condition. All local authorities were required to submit Strategies for Change to DCSF, aimed at joining up funding streams, using local authority resources, school's devolved capital and private sector funding such as Section 106 funding to deliver a strategic approach to capital investment. In addition to improving the environment for teaching and learning the programme aims to establish primary schools as a focal point for a range of community activities and services.
- Building Schools for the Future. Capital programmes for secondary schools are being progressed through the Building Schools for the Future Programme (BSF). This aims to ensure that all

⁴⁶ Source - www.teachernet.gov.uk

schools have facilities to meet the needs for the 21st Century. This is being progressed through 15 waves of funding assistance from 2005 - 2020⁴⁷. The intention is to have begun projects in every local authority in the country by 2011. This also involves pooling resources, and to use the financial flexibility from the Single Capital Pot to carry out prudential investment for modernising infrastructure. Bristol has already implemented its BSF programme. The other three authorities are awaiting approval of their BSF programmes and are currently undertaking a considerable amount of preparatory work towards submissions for these.

7.24 Other sources of funding to support new infrastructure investment include:

- Developer contributions - contributions to reflect the impact of housing development. For the purpose of this study, developer contributions are grouped for all infrastructure.
- Capital receipts - income from the sale of Council assets, for example, surplus land holdings.
- One-off Government grants - available in specific financial years for specified purposes and usually on a bidding basis. The DCSF Targeted Capital Fund, for example, provides opportunities to bid for individual innovative schemes beyond those that could normally be funded through the formulaic allocations.
- Prudential borrowing - a scheme that allows local authorities to borrow capital against future identified savings. This might for example provide a contribution to the cost of replacement of a building that has high energy and maintenance costs.

Funding information will need regularly updating

7.25 Our analysis assumes that no mainstream funding is available. This is on the advice of service providers. This creates a funding gap equivalent to the cost of the total cost of £624.3 million.

7.26 The information used in this infrastructure assessment is likely to be subject to considerable alteration over the next few years as investment decisions stemming from the BSF and other programmes and political decisions materialise. Therefore it will be essential to keep this information under constant review and updated accordingly.

Are there any growth barriers?

7.27 The table below identifies the extent to which a lack of education infrastructure will obstruct the delivery of planned housing. The notes within this are used to explain any particular issues that have been identified through our research that might affect the timing of the delivery of development.

7.28 We find no growth barriers. Typically, education capacity exists in the early part of the plan period (and so the bar chart is coloured green), and then capacity fills (and so turns amber). We have classified these instances as amber rather than red because the provision of education infrastructure for growth depends in large measure on policy choices on the extent to which a) available developer contributions are allocated to education, and b) use is made of existing education funding streams.

⁴⁷ Subject to Government spending reviews.

Table 7 5 Education growth barriers (blue lines should be disregarded: they are discussed in later sections)

Authority	Location	Education	Barriers	Notes
BANES	SE of Bristol prop. UE	Education	A new secondary school would need to be built somewhere in the centre of the proposed development between Whitchurch to Hicks Gate to serve the SUE.	N/a
BANES	Bath prop. UE	Education	Review of BSF report highlights that secondary pupils will be accommodated at re-modelled Culverhay and other Bath Schools. We have assumed no constraints in early phase due to existing surplus capacities.	N/a
BCC	Bristol City Centre	Education	Very limited capacity and schools are on constricted sites with few surplus places. Requirement based on current policy of encouraging single person housing.	N/a
BCC	South Bristol	Education	Existing surplus capacity means that new growth can be accommodated possibly upto 2018, though plans in place to reduce capacity.	N/a
BCC	North Bristol	Education	Existing surplus capacity means that new growth can be accommodated possibly upto 2018 but plan in place to reduce capacity.	N/a
BCC	Avonmouth	Education	n/a - this is an employment site	N/a
SG	Sevenside (S. Glouc)	Education	n/a - this is an employment site	N/a
NS	Weston TC and UA	Education	Development here will be linked to BSF proposals, and emerging thinking indicates there is scope to expand Broad Oak secondary in the short term, hence we are taking an optimistic approach in the early stages to suggest development could proceed. This could be followed by possible re-modelling of Wyvern in the town centre to an Academy in the medium term and eventually there is a need for a new secondary school.	N/a
NS	South West of Bristol UE	Education	Cautious potential to proceed depending on impact of Bristol, because St Catherine's school has some 80% of its catchment from Bristol at present. This could change if Bristol stems out migration, then the suggestion is to move the school into the proposed new UE.	N/a
SG	North Fringe of Bristol	Education	There is some surplus capacity that could possibly serve short term phasing or possibly through extension of existing provision.	N/a
SG	Yate & Chipping Sodbury	Education	There is some surplus capacity that could possibly serve short term phasing or possibly through extension of existing provision.	N/a
SG	East Fringe of Bristol	Education	There is some capacity and also impact of cross border movements with Bristol could change over the years.	N/a

Issues

A changing situation will affect the infrastructure model

7.29 The funding information could change as announcements on mainstream sources such as Building Schools for the Future and Strategies for Change are made. The spreadsheet model will need to be regularly reviewed to reflect such changes.

Cross border issues

7.30 Many parents in Bristol City in particular currently choose to send their children to adjoining authorities, particularly North Somerset and B&NES schools, causing schools in these authorities to be stretched. However, recent investment in Bristol education infrastructure is starting to show signs of slight reversal of this pattern of outmigration. Parental and pupil choice in the coming years could thus lead to considerable changes in school capacities close to the boundary with Bristol. A detailed analysis of local situations will be necessary to assess existing capacities at the time new development is proposed and this could again affect costs and funding. When planning the reconfiguration of services it can be difficult to distinguish between the benefit to existing residents and the costs that should be apportioned to new development.

The shape and type of education provision is going through major changes

7.31 The shape of future provision and age ranges is likely to be substantially different to the system that has operated to date. There is a move to merge secondary and post 16 provision in some of the new schools and have through schools from Age 11 to 19yrs. Some authorities are considering the

introduction of Academies. Thus the spreadsheet model will need to be regularly reviewed to reflect this change.

The co-location of youth services and other services in multi-use centres

7.32 Although not included in the infrastructure summary table, some service providers have stated that current youth services provision are stretched and there is an expectation that any future development should contribute to the provision of youth service infrastructure. Similarly some providers have highlighted the importance of creating a comprehensive Service that includes Children's Centres and Extended School and adult education planned at the outset of the service provision.

7.33 For the purpose of this study, these are not considered as show stoppers, though we acknowledge these are desirable requirements and where possible service providers would seek to include these.

7.34 Service providers highlighted the need to develop innovative thinking in the delivery of such infrastructure by incorporating multi service centres. Thornberries was highlighted as an example of a joint service centre, incorporating a community centre, youth centre, adults with learning difficulties provision. A Community Trust is now responsible for looking after this centre. Another example mentioned includes the old Park School in Kingswood, South Gloucestershire. Here a redundant school building was converted into a community centre, sure start centre and youth centre which is now run by a community management committee.

8 OPEN SPACE, PARKS, SPORT AND LEISURE: WHAT KEY INFRASTRUCTURE IS REQUIRED? WHAT ARE ITS COSTS AND FUNDING? DO BARRIERS TO GROWTH EXIST?

Introduction

8.1 Open spaces, public space, parks, sport and recreation all underpin people's quality of life. In this section we examine the needs of requirements, costs and funding of the necessary open space, parks and leisure infrastructure to cope with uncommitted growth in PKDS to 2026.

Our approach

Our scope in this section

8.2 PPG17 is our starting point in this section. We have covered parks, playgrounds, playing fields, leisure centres and allotments⁴⁸. Sport and recreation is not formally defined in PPG17. However, for our purposes in this assessment, we have included facilities for sport and recreation, including leisure centres (including swimming pools and indoor sports halls).

8.3 We have not covered private, voluntary and specialist sports provision including for instance indoor and outdoor tennis clubs, stadia, and golf courses. Nor have we covered cemeteries.⁴⁹

PPG17-compliant assessments of open space have been completed by three areas

8.4 At the time of writing, Bristol and Bath and North East Somerset have completed PPG17 compliant assessments of open space. Assessments in North Somerset has been completed and will be adopted in November 2009. Work in South Gloucestershire is planned.

Open space standards have been stated in a number of different ways, covering different issues

8.5 The available PPG17 assessments contain guideline standards for open space provision.

8.6 In line with the locally specific approach advocated by Government, different authorities have taken a different approach to this issue. There is nothing wrong with these approaches, but the different standards used are difficult to compare across the Partnership area. Getting a consistent picture of

stated green space requirements around the sub-region in order to identify the infrastructure requirements and costs of growth at a Partnership level is therefore a complex business. For example

- Categorisations are different between authorities. The BANES strategy boils the eight (highly complex) PPG17 categories of open space down to the three categories of Formal Space, Natural Space and Allotments. This is a perfectly reasonable approach, but it is difficult to be sure exactly how these categories relate to Bristol's (similarly reasonable) five categories of children and young peoples' space; formal green space; informal green space; natural space and active sports space.
- Different policies cover slightly different issues. For example, the Bristol Strategy excludes allotments (on the rationale that they are not freely accessible to the public).⁵⁰ However, the BANES strategy includes allotments.
- Where similar issues are covered, they appear at times to be treated slightly differently. For example, both the Bristol and the BANES strategy subscribe to the "increasing movement amongst play professionals to... advocate the reintegration of play with the wider landscape, without fences and without over reliance on manufactured play equipment." The Bristol strategy appears to integrate this approach into its assessment, although the BANES strategy prefers to assess formal playspace but look to a "pioneering partnership...to develop this principle" between BANES and South Gloucestershire Council.^{51 52}

We have solved this problem by reviewing local space standards, and set these against a broader review of standards elsewhere

8.7 We have therefore reviewed local requirements, and set these assumptions against a broader review of open space and sports standards.⁵³ We have attempted to make these different standards more tractable by converting them to a uniform rate per thousand dwellings. We have used various assumptions to do this.⁵⁴

8.8 It should be noted that we have included the non-PPG17 elements of sports provision in this exercise.

8.9 Given the pressure that there will be on developer contributions and mainstream funding, we have tended to discount standards which are obviously aspirational in nature (for example, National Playing Fields Associations Standards are not practical, particularly in urban areas). However, it should be noted that there is no reason why these standards should not continue to be used as a basis for individual authorities' developer contribution strategies where those authorities feel that they

⁴⁸ In PPG17, open space is defined as "all open space of public value, including not just land, but also areas of water such as rivers, canals, lakes and reservoirs which offer important opportunities for sport and recreation and can also act as a visual amenity"⁴⁸. This includes parks, green corridors, outdoor sports facilities, allotments, community gardens, cemeteries, civic spaces, including civic and market squares, and other hard surfaced areas designed for pedestrians. Also, this includes amenity greenspace (most commonly, but not exclusively in housing areas) -and informal recreation spaces, greenspaces in and around housing, domestic gardens and village greens.

⁴⁹ We have excluded cemeteries because there is a typically a very limited number of cases when significant investment in cemeteries are needed. We have therefore treated these requirements and costs as de minimis (high investment requirements at cemeteries are usually caused by high land costs). We are aware that some local authorities' PPG17 assessments have picked up cemetery requirements. The BANES assessment is in this category and picks up "a limited number of burial grounds" in the natural open space category (Bath & North East Somerset Green Space Strategy March 2007 p5). This is perfectly proper given its local focus.

⁵⁰ Bristol City Council (2008) Bristol's Parks and Green Space Strategy (7)

⁵¹ Bath & North East Somerset Green Space Strategy March 2007 (88)

⁵² Bath & North East Somerset Green Space Strategy March 2007 (88)

⁵³ See appendix 5. Please note that Bristol standards are under review. <http://www.bristol.gov.uk/ccm/content/Environment-Planning/Parks-and-open-spaces/bristol-parks-and-green-space-strategy.en.jsessionid=EFAB08F9E85976ECA608C10DB21F9384.tcwwwaplaws3>

BANES standards Bath & North East Somerset Green Space Strategy March 2007 35-39

⁵⁴ Following the demographic work provided to us, we have assumed that the West of England Partnership area has 2.23 people per household on average over the plan period.

are needed. Different local authorities place a differing emphasis on open space issues, and this entirely proper.

8.10 We have uniformly applied these requirements to all PKDS.

We have costed these proposed open space and sports standards

8.11 Having picked reasonable space standards, we have looked at the open space, parks and leisure requirements that these sites might have, and costed them using a set of stated comparators and assumptions.

8.12 We have taken the following approach.

- In this assessment we are concentrating on primary infrastructure. We are assuming that small scale open space provision (such as LAPs, and very small scale “pocket” open space on housing developments) are for the most part incorporated in build costs, and so do not need to be separately dealt with. In many cases, LEAPs are provided by developers, but we have costed them separately here because in town centres in particular it may be difficult to include these facilities on site.
- As stated above, in line with the rest of our study, we are concentrating on capital costs in this study. This is to keep us compliant with the board thrust of CIL guidance. We do not estimate commuted sums. These would have to be worked out following negotiation.
- Land costs are generally not included in these calculations. This is for two reasons.
 - In a number of PKDS (North Bristol and South Bristol) land for open space is already in Council ownership. The question here is less about land purchase, and more concerned with selective redevelopment on existing open space in areas with existing (often very generous but poor quality) open space provision.
 - Secondly, because the price of land will vary widely depending on development location. Those developments able to buy agricultural land for use as (say) a playing field or park will typically pay twice agricultural land values (say £20-30k/ha); those developments in urban areas using built up land will pay very significantly more. This is particularly relevant for space-hungry requirements, such as playing fields and parks. A more detailed approach would need to be taken on a case-by-case basis, but the lack of land costs here should be borne in mind.

8.13 Note that new employment development is assumed to make no primary infrastructure green space, park, sport and leisure demands.

Important caveats

8.14 The approach taken (that of using uniform planning standards to calculate an open space requirement for growth in the West of England) does not take into account local deficits or surplus in open space. This is a problem, because a surplus would affect infrastructure requirements - for

example, if there was an open space surplus in an area, there would be no requirement for more open space provision.⁵⁵ We know that this is the case, for example, in certain parts of Bristol.

8.15 Equally, this strategic assessment cannot take account of the fine-grained detail of planning requirements of individual areas. Nor does it take account of specific local requirements - such as the political importance of maintaining 120ha of parks provision in the South Bristol PKDS. We note that the Bristol Green Space Strategy states that “Much of south Bristol suffers from too low a density of housing to sustain good local services, and there is a lot of low quality open space. There will be pressure on some of this over the next twenty years, and it makes sense to balance this with a high quality park in Hengrove”.⁵⁶

8.16 However, given that this paper is intended to be a broadly CIL-compliant strategic assessment, we believe that this standards-based approach is the best method of calculating open space infrastructure requirements. It is the case that standards will have to be applied and interpreted in a flexible way to take into account varying local circumstances. Indeed, this is recognised even in the highly detailed local authority specific strategies - for example, the BANES strategy notes that “there needs to be a degree of flexibility in these standards in order to accommodate changes in future trends, and to allow for individuality of sites and facilities.”⁵⁷

8.17 Clearly, there will still be an important role for LPAs to address local issues locally, by variations to the respective CiLs or section 106 policy documents of the UAs. **This work has been undertaken in order to obtain a high level estimate of infrastructure costs and funding for growth. It in no way supersedes or prejudices the UAs’ existing or future Open Space policies and developer contributions policies.**

What are the infrastructure requirements and costs resulting from housing and jobs growth?

8.18 The standards we have used in calculating the open space, parks, sport and leisure requirements are shown in below in tabular form. More information is found in the Appendix 8 entitled “Typical Design Standards”.

8.19 The economics of providing areas for formal sport is dependent on the nature of the land use and any requirement for land works and drainage, the need for fencing, and the extent of provision of pavilions etc. Such costs as drainage, or land purchase in an urban area, can push up costs considerably.

8.20 Following consultation with the Department for Culture, Media and Sports in our earlier study, we have treated sports and leisure centres as the same type of centre.

⁵⁵ PPG17 Annex states at para 9.6: “Not every proposed development will require additional provision. If the amount and quality of provision within the appropriate distance thresholds of the proposed development site will match or exceed the adopted provision standards when the development is complete, there is no need for either additional provision or the enhancement of any existing provision.”

⁵⁶ Bristol City Council (2008) Bristol’s Parks and Green Space Strategy (24)

⁵⁷ Bath & North East Somerset Green Space Strategy March 2007 111

- 8.21 For sports provision cost calculations, we have used the model devised by Sport England known as the “Toolkit”. This calculates the amount and cost of provision required in each local authority as the population increases, based on the existing population profile of the area.
- 8.22 One issue that may be problematic is the ‘lumpiness’ of provision. Quite often within a sub-region no one Unitary Authority might need to build, for example, a swimming pool. However, at a sub-regional level there may be requirement for several. Unless such infrastructure is considered at the larger level, requirements risk being overlooked or simply not provided. This emphasises the need for a joint approach to strategic leisure provision across the sub-region.

Table 8.1 Typical open space, sports and leisure requirements and costs (including costs per dwelling)

	Local park	LEAP	NEAP	Playing field	Leisure centre	Allotment	Total
Requirements per 1000 dwellings	1.35 ha	0.29 ha	0.29 ha	2.3 ha	0.1 centres	0.5 ha	-
Source	Llewelyn Davies Kent Thameside Community Services	West Northants Development Corporation	West Northants Development Corporation	Llewelyn Davies Kent Thameside Community Services.	Barton, Grant, Guise (2003) Shaping Neighbourhoods (UWE)	Milton Keynes Planning Obligations for Leisure, Recreation and Sports Facilities SPG	
Source costs (£)	180,000	40,000	80,000	125,000	5,435,000	100,000	5,960,000
Source quantity	per ha	typically 100m2 - 200m2; say 150m2	typically 1000m2	Per ha. (£80,000 per 6400m2/ 0.64 ha)	assumed 4 court sports hall plus 25m 5-lane pool	per ha	-
Notes	Excludes land, includes fees			Sports England Kitbag. Includes fees and external works. 2008 Q2. Note: is on the lower side of provided standards. Chosen as we note that some districts appear to have existing surpluses in playing field provision.	Sports England Kitbag. Includes fees and external works. 2008 Q2		-
Cost per 1000 dwellings (£)	243,000	773,333	232,000	287,500	543,500	56,000	2,135,333
Cost per single dwelling (£)	£243	£773	£232	£288	£544	£56	£2,135

Source: RTP and stated sources

How can new infrastructure be funded?

There is no mainstream funding to support parks, open and play space, playing fields and allotment provision for new growth

- 8.23 It has become clear that in the great majority of cases there is either negligible or nil mainstream capital budget set aside for the acquisition of new open space to cope with the demands of growth. Capital investment of this sort is normally considered to be within the remit of local authorities but there are no dedicated mainstream sources of funding to support any investment. There are some small and specialised sources of funds for specific and narrowly defined projects but these cannot sensibly be used as a platform for strategic investment. It is not practical to assume that the local authorities will be able to contribute significantly to capital expenditure beyond what might be expected by way of creating and maintaining funding amenities for existing populations.
- 8.24 We have therefore assumed that funding for the capital costs of provision of these facilities is not available from existing mainstream funding.

- 8.25 Where money is available from developer contributions, we anticipate that these funds would be allocated to a central fund for improvements and enhancement to recreation and community infrastructure. Some of this money can then be used towards match funding lottery and other grant aid.
- 8.26 However, it is not possible to be precise about how successful authorities will be in attracting match funding. We have not assumed that match funding will be available.

We assume that 20% of the capital costs of leisure centre provision will be met from mainstream funding

- 8.27 Local authorities can and do allocate capital funding from their budgets for the creation of new indoor sport and leisure space. However, these are very limited. We understand from consultation that some capital funding has historically been available from local authority asset sales, but this source of funding has recently dried up. We expect that such receipts will be very limited for a considerable time.
- 8.28 There are also non-local authority funds available for these uses, including Sport England's Free Swimming Capital Modernisation Development Programme (SCMP). This Department for Culture, Media and Sport (DCMS) £60m national capital funding is intended for the modernisation and enhancement of publicly accessible swimming facilities. As we said above, though, these funding pots are difficult to use as a platform for strategic investment.
- 8.29 For the purposes of this assessment, we have assumed that 20% of the funds required for the provision of leisure centre space will be available from local authorities.
- There is a mainstream funding deficit for open space, leisure and sports*
- 8.30 Our spreadsheet model suggests that there will be a significant funding deficit for open space, leisure and sports provision. We have used the above assumptions to arrive at this estimate.

Table 8.2 Open space, parks, sport and leisure funding deficit

	Estimated Cost	Estimated Mainstream Funding	Mainstream Funding Gap	% Costs Covered by Mainstream Funding
Local park	-£19.5m	£0.0m	-£19.5m	0%
LEAP	-£62.0m	£0.0m	-£62.0m	0%
NEAP	-£18.6m	£0.0m	-£18.6m	0%
Playing field	-£23.0m	£0.0m	-£23.0m	0%
Leisure centre	-£43.6m	£8.7m	-£34.8m	20%
Allotment	-£4.5m	£0.0m	-£4.5m	0%
	-£171.1m	£8.7m	-£162.4m	5%

Source: RTP

Are there any growth barriers?

There are no growth barriers in this category

- 8.31 We have identified the extent to which a lack of parks and open space infrastructure will form a technical obstruction of the delivery of planned housing. We find no growth barriers.
- 8.32 We have classified parks, open space and leisure infrastructure as amber because the provision of this infrastructure depends in large measure on policy choices on the extent to which a) individual site level requirements identified during masterplanning; b) available developer contributions are allocated to this type of infrastructure, and, in the case of leisure provision, c) whether use is made of existing funding streams. We have assumed that the infrastructure will be needed over the same build out period as the housing development.
- 8.33 The traffic light tables in section 11 illustrate these findings.

Issues

- 8.34 We have discussed the potential importance of sharing the costs of provision of certain elements of leisure and sports facilities with other infrastructure (such as schools) in Chapter 13. This may work to reduce costs. A specific management response will be required to capture these savings.
- 8.35 We have not identified any separate delivery issues other than those mentioned above.

9 SUMMARY: THE COSTS AND FUNDING OF INFRASTRUCTURE FOR PLANNED GROWTH AT THE PKDS

Introduction

9.1 In this section, we pull together the costs and funding of transport, open space and education infrastructure to support planned growth at the PKDS from 2009-26.

9.2 This section derives from our spreadsheet model. Findings are set out at Appendix 9.

Headline findings

There is a £1.2bn infrastructure funding gap in the West of England area to 2026

9.3 We begin by presenting the overarching conclusions of our study.

9.4 Our work suggests that there is a £1.2bn funding gap to 2026, across the West of England. The headline figures on costs, mainstream funding and developer contributions are as follows.

Overall Infrastructure costs of	-£2,512m
Mainstream funding of	+£ 772m
Developer contribution funding of	+£ 509m
Leaves a funding gap of	-£1,231m

9.5 The headline finding above summarises the component strands of costs, mainstream funding, and developer contribution funding. In the sections below, we unpack these different component parts to analyse the infrastructure information in the spreadsheet model that produces this funding gap, and to provide information at different spatial levels. This helps us to draw important conclusions, and drives recommendations on how delivering the necessary infrastructure to accommodate growth in the West of England area can be achieved.

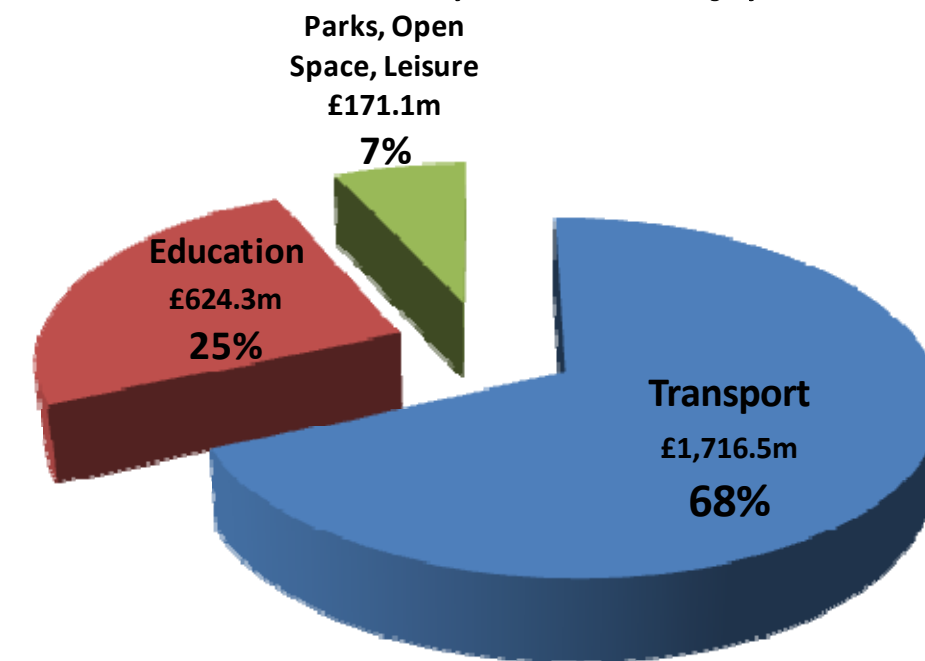
9.6 We start by looking at costs. We then look at mainstream and developer contribution estimates, and then pull these threads back together.

Analysing estimated key infrastructure costs

Transport costs dominate

9.7 Figure 9.1 below show estimated infrastructure costs by category. Transport dominates estimated infrastructure costs across the West of England area (approximately 65% of total costs), with education representing the second highest cost (approximately 28% of total costs). The third highest cost is parks and open space. This is consistent with other studies we have undertaken.

Figure 9.1 Estimated Infrastructure costs by Infrastructure Category



Source: RTP

The top ten infrastructure costs

9.8 Table 9.1 below shows the top ten infrastructure costs identified in the study. The majority of these are for transport infrastructure. However, the number of housing units dependent on delivery of the infrastructure varies considerably. For example, the highest single cost infrastructure item is the 2nd Avonmouth Crossing. However, no housing units are assumed to be dependent on it. The Orbital BRT is assumed to be required for over half the PKDS housing growth (43,029 units), but is estimated to cost £72.8m.

9.9 This indicates there are key items of transport infrastructure that need to be funded and delivered early on in order to allow the potential delivery of large amounts of housing growth. This is discussed in more detail below.

Table 9.1 Top ten costs by number of dependent housing units and PKDS

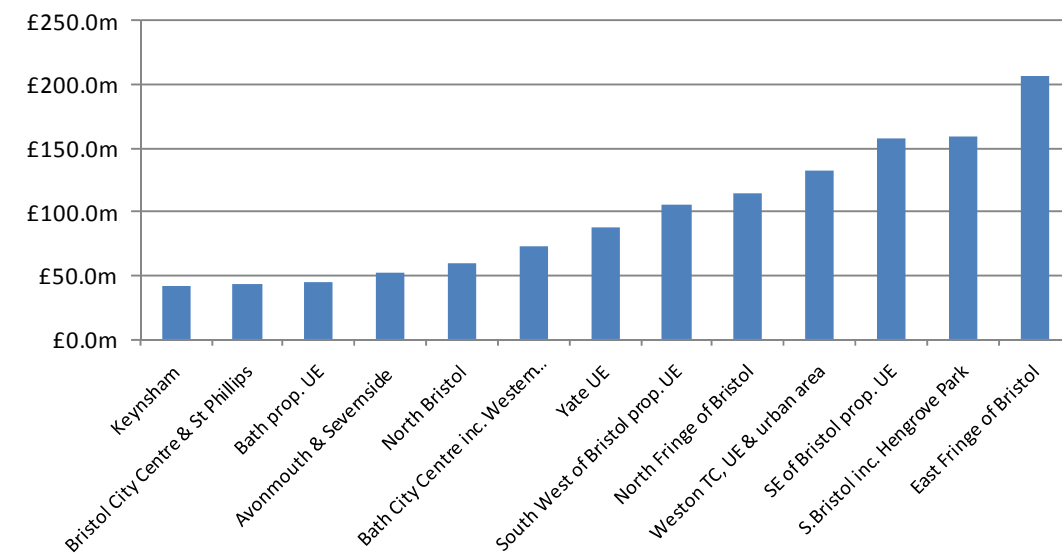
	Infrastructure Requirement	Category	Estimated Cost	Number of Dependent Housing Units	PKDS
1	2nd Avonmouth Crossing(£2005)	Transport	-£158.5m	0	Avonmouth & Severnside
2	WSM to BIA to S Bristol	Transport	-£127.1m	5,731	Weston TC, UE & urban area
3	South East Bristol Transport Package	Transport	-£108.1m	17,952	S.Bristol inc. Hengrove Park SE of Bristol prop. UE
4	Bristol Bath Corridor Transport Package (potential for highway improvements & BRT)	Transport	-£100.0m	17,732	Bath City Centre inc. Western Riverside Bath prop. UE Keynsham SE of Bristol prop. UE
5	Orbital BRT (East Fringe-Keynsham-SE Bristol UE-S Bristol)	Transport	-£72.8m	43,029	East Fringe of Bristol Keynsham S.Bristol inc. Hengrove Park SE of Bristol prop. UE South West of Bristol prop. UE
6	Greater Bristol Bus Network	Transport	-£69.8m	74,379	Avonmouth & Severnside Bath City Centre inc. Western Riverside Bath prop. UE Bristol City Centre & St Phillips East Fringe of Bristol Keynsham North Bristol North Fringe of Bristol S.Bristol inc. Hengrove Park SE of Bristol prop. UE South West of Bristol prop. UE Weston TC, UE & urban area Yate & Chipping Sodbury
7	11 x new Primary Schools	Education	-£66.0m	13,202	East Fringe of Bristol
8	Callington Rd Link/ Bath Rd Improvements	Transport	-£63.5m	7,758	S.Bristol inc. Hengrove Park
9	BRT Emersons Green to Temple Mead	Transport	-£57.1m	17,452	Bristol City Centre & St Phillips East Fringe of Bristol
10	2 x Secondary / Sixth Form Schools	Education	-£54.0m	13,202	East Fringe of Bristol
			-£876.9m		

Source: RTP

The costs of infrastructure required to support growth at different PKDS vary significantly

9.10 Figure 9.2 below shows that the estimated growth infrastructure cost (i.e. excluding predominately historic deficit transport costs) by PKDS varies significantly, from less than £50m in Keynsham, to approximately £200m at the East Fringe of Bristol.

Figure 9.2 Estimated growth infrastructure cost by PKDS (i.e. excluding predominately historic deficit transport costs)



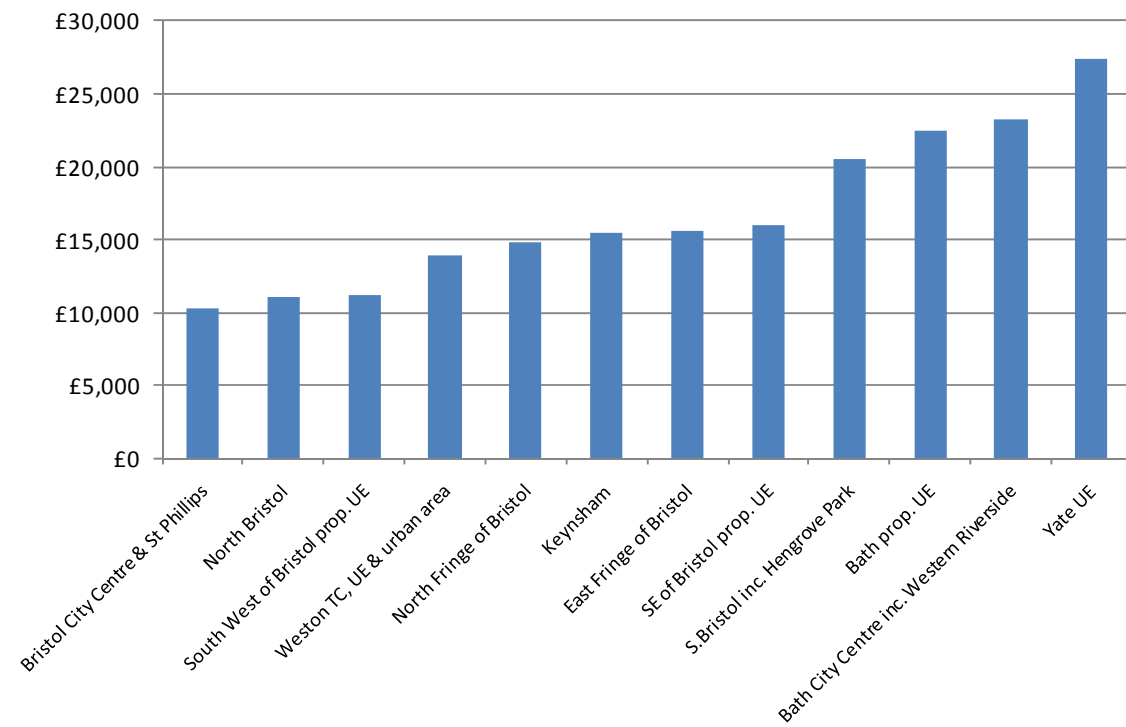
Source: RTP

9.11 However, there are important caveats to be attached to this work. These figures are sensitive to how transport costs are apportioned to the different PKDS. The purpose of this analysis is to show the broad potential differences in infrastructure costs between PKDS.

A different picture emerges when growth infrastructure costs by PKDS are analysed by cost per dwelling

9.12 Figure 9.3 below summarises the high level apportionment of growth infrastructure costs (i.e. excluding historic deficit transport costs) by PKDS on a per dwelling basis. Some PKDS are much higher on this basis in comparison, such as Yate, Keynsham, Bath proposed Urban Extension and Bath City Centre (inc. Western Riverside). Conversely, other PKDS are much lower on this basis in comparison, such as the East Fringe of Bristol and Weston Town Centre, Urban Area and Urban Extension.

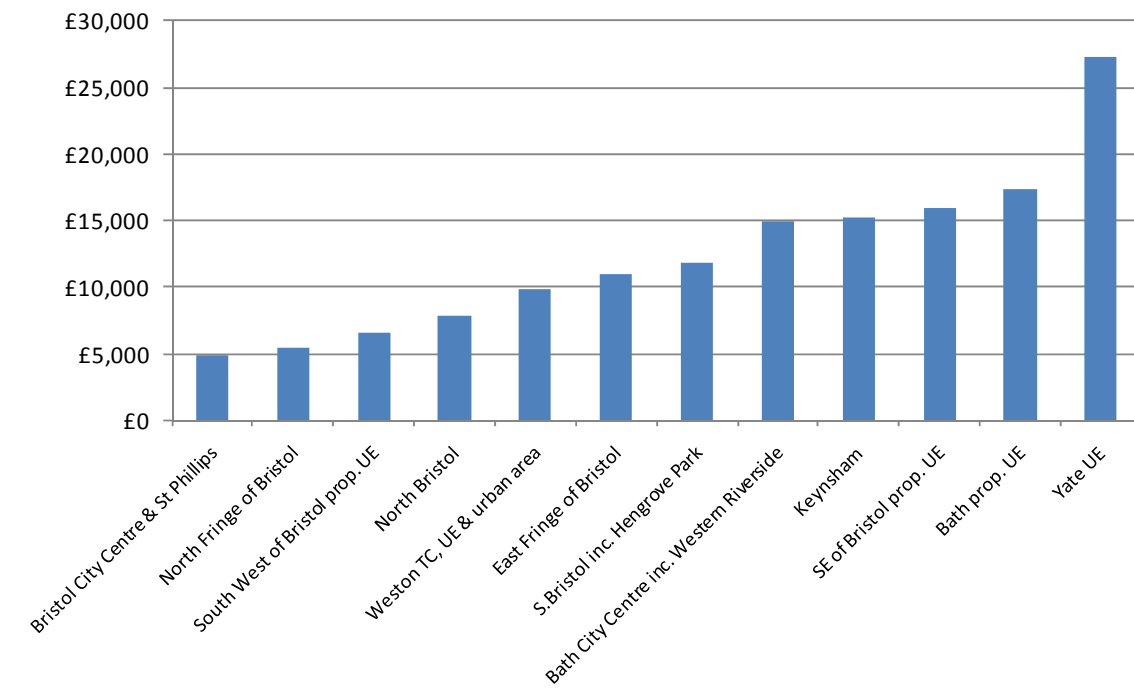
Figure 9.3 Estimated growth infrastructure cost per dwelling by PKDS (excluding predominately historic deficit transport costs)



Source: RTP

Yate UE PKDS is significantly worse in comparison when mainstream unfunded growth infrastructure per dwelling is assessed

Figure 9.4 Estimated unfunded growth infrastructure cost per dwelling by PKDS (excluding predominately historic deficit transport costs)



Source: RTP

9.13 Figure 9.4 shows the unfunded growth infrastructure cost per dwelling (excluding potential developer contributions). Nearly all of the PKDS have estimated mainstream unfunded growth costs (i.e. excluding historic deficit transport requirements) below £20,000 per dwelling, with a number below £10,000 per dwelling.

9.14 However, Yate UE PKDS is significantly worse in comparison at over £25,000 per dwelling due to a lack of identified mainstream funding, in particular the Yate Package transport infrastructure required and the estimated three new primary schools and additional secondary school requirements.

9.15 As stated above, this analysis is at a high level, and is therefore not suitable where detailed analysis of each PKDS is required, such as calculating a potential CIL charge.

Analysing estimated mainstream funding for key infrastructure

- 9.16 We have assessed the potential availability of mainstream public funding to pay for the infrastructure requirements resulting from the assumed uncommitted growth in the West of England PKDS. We have interviewed service providers, consulted strategic documents, and undertaken our own research to provide an estimation of this.
- 9.17 Table 9.2 below shows:
- the estimated mainstream funding from the spreadsheet model by infrastructure category (in comparison to estimated infrastructure costs);
 - the public sector funding gap (i.e. estimated infrastructure costs less estimated mainstream public funding); and
 - the percentage of estimated infrastructure costs covered by estimated mainstream public funding.

Table 9.2 Estimated mainstream funding (excluding developer contributions) and funding gap

	Estimated Cost	Estimated Mainstream Funding	Mainstream Funding Gap	% Costs Covered by Mainstream Funding
Transport	-£1716.5m	£763.1m	-£953.3m	44%
Education	-£624.3m	£0.0m	-£624.3m	0%
Parks, open space & public realm, leisure	-£171.1m	£8.7m	-£162.4m	5%
	-£2511.8m	£771.8m	-£1740.0m	31%

Source: RTP

- 9.18 As set out in the education chapter, we have been informed by the UAs that there should be no assumption of mainstream funding for education. Consequently, the mainstream funding gap for education is roughly similar in scale as for transport, where approximately half the cost is estimated to come from mainstream sources.
- 9.19 Although the estimated cost of parks, open space and leisure is significantly lower than transport and education, the low proportion of estimated mainstream funding means the mainstream funding gap is still over £150m.

Analysing estimated developer contributions to infrastructure

- 9.20 Section 5 sets out our approach and assumptions to estimating potential developer contributions. Developer contributions can be used to “plug” some of the funding gap we have uncovered. Developer contributions are likely to play an important role in funding infrastructure requirements resulting from residential growth in the West of England area.
- 9.21 In this section, we outline the findings from our spreadsheet model on how much developer contributions could be available from jobs and housing growth in the West of England area.

The overall level of indicative developer contributions is insufficient to plug the mainstream funding gap

- 9.22 On the basis of the above methodology and assumptions, the spreadsheet model shows a total estimated indicative developer contribution level from the uncommitted growth in the West of England PKDS of approximately £500m.

Some PKDS have the ability to provide higher developer contributions than others

- 9.23 The breakdown of this indicative level of contributions equates to an average contribution of just over £6,500 per residential unit, although this includes a small proportion of contribution from convenience and comparison retail development (see Table 9.3).
- 9.24 However, as set out in the table below, there are significant differences in the estimated levels of contributions provided by the uncommitted growth in the PKDS, from £0 per unit in South Bristol to over £10,000 per unit in the East Fringe of Bristol and Bath proposed Urban Extension. It should be noted these figures are highly sensitive to the development assumptions, and the assumed category for the development areas within the PKDS. In the case of the Weston town centre and urban extension PKDS, the indicative contributions are from retail development.

Table 9.3 Indicative developer contribution by PKDS

Map Ref	PKDS	Assumed developer contribution	Assumed Housing No's	Indicative developer contribution (per unit)
1	Bath City Centre inc. Western Riverside	£6.7m	3,157	£2,132
2	Keynsham	£21.4m	2,741	£7,814
3	SE of Bristol prop. UE	£99.5m	9,834	£10,116
4	Bath prop. UE	£20.2m	2,000	£10,116
5	Bristol City Centre & St Phillips	£2.5m	4,250	£584
6	S.Bristol inc. Hengrove Park	£0.0m	7,758	£0
7	North Bristol	£25.3m	5,308	£4,767
8	Avonmouth & Severnside	£0.0m	0	
9	Weston TC, UE & urban area	£12.0m	9,481	£1,266
10	South West of Bristol prop. UE	£92.3m	9,494	£9,725
11	North Fringe of Bristol	£32.3m	7,704	£4,195
12	Yate UE	£29.5m	3,200	£9,227
13	East Fringe of Bristol	£166.8m	13,202	£12,638
Total		£508.7m	78,129	£6,510

Source: RTP

Lower land cost assumptions significantly increase potential developer contributions

- 9.25 The sensitivity analysis in section 5 showed that lowering land cost assumptions⁵⁸, increased theoretical surplus from uncommitted growth in the PKDS, and could therefore potentially increase developer contributions.
- 9.26 The table below shows that using these changed assumptions means that the overall indicative level of developer contributions increases to approximately £800m, although this is still significantly short of plugging the mainstream funding gap. It also shows that significantly greater contributions can be secured from some important “categories” of development, such as “urban extension” High Value/Medium Abnormals and Medium Value/Low Abnormals, which are assumed to contribute approximately £20,000 per unit in comparison to £12,000 per unit in the base case scenario.
- 9.27 It should be noted we have limited the theoretical surplus secured as developer contributions at £25,000 per unit and it cannot be assumed this level of contributions could be justified. (The needs test would apply to developer contributions).

Table 9.4 Sensitivity analysis on developer contribution by PKDS: the effects of lower assumptions on land cost

Map Ref	PKDS	Assumed developer contribution	Assumed Housing No's	Indicative developer contribution (per unit)
1	Bath City Centre inc. Western Riverside	£6.7m	3,157	£2,132
2	Keynsham	£36.9m	2,741	£13,465
3	SE of Bristol prop. UE	£186.1m	9,834	£18,920
4	Bath prop. UE	£37.8m	2,000	£18,920
5	Bristol City Centre & St Phillips	£2.5m	4,250	£584
6	S.Bristol inc. Hengrove Park	£0.0m	7,758	£0
7	North Bristol	£43.8m	5,308	£8,260
8	Avonmouth & Severnside	£0.0m	0	
9	Weston TC, UE & urban area	£12.0m	9,481	£1,266
10	South West of Bristol prop. UE	£173.3m	9,494	£18,250
11	North Fringe of Bristol	£80.4m	7,704	£10,439
12	Yate UE	£29.5m	3,200	£9,227
13	East Fringe of Bristol	£204.4m	13,202	£15,486
Total		£813.5m	78,129	£10,413

Source: RTP

There is the potential to achieve higher contributions through lower affordable housing requirements, lower sustainability requirements and additional HCA grant funding

- 9.28 The sensitivity analysis in section 5 also showed that significantly increased theoretical surplus could be created from uncommitted growth in the PKDS where affordable housing and sustainability assumptions are altered (including 35% to 20% affordable housing in urban extension and suburban categories and from 20% to 10% in urban categories, HCA grant funding and Code Level 3 rather than Level 5).
- 9.29 Table 9.5 below shows the overall indicative level of developer contributions increases to approximately £1.5bn, which is almost sufficient to plug the mainstream funding gap of £1.7bn. All PKDS contribute in excess of £10,000 per unit (including assumed retail contributions), except for Weston town centre and urban extension. We have again limited the theoretical surplus secured as developer contributions at £25,000 per unit. Again, the needs test would apply to developer contributions.

Table 9.5 Sensitivity analysis on developer contribution by PKDS: the effects of reduced affordable housing and sustainability requirements

Map Ref	PKDS	Assumed developer contribution	Assumed Housing No's	Indicative developer contribution (per unit)
1	Bath City Centre inc. Western Riverside	£43.3m	3,157	£13,731
2	Keynsham	£54.6m	2,741	£19,917
3	SE of Bristol prop. UE	£238.2m	9,834	£24,224
4	Bath prop. UE	£48.4m	2,000	£24,224
5	Bristol City Centre & St Phillips	£66.0m	4,250	£15,534
6	S.Bristol inc. Hengrove Park	£126.9m	7,758	£16,359
7	North Bristol	£103.5m	5,308	£19,506
8	Avonmouth & Severnside	£0.0m	0	
9	Weston TC, UE & urban area	£12.0m	9,481	£1,266
10	South West of Bristol prop. UE	£226.7m	9,494	£23,879
11	North Fringe of Bristol	£176.5m	7,704	£22,914
12	Yate UE	£80.0m	3,200	£25,000
13	East Fringe of Bristol	£275.4m	13,202	£20,857
Total		£1451.7m	78,129	£18,581

Source: RTP

Impact of sensitivity analysis of developer contributions

Both lower land cost and reduced planning requirements help to reduce the overall funding gap

- 9.30 In Table 9.4 and Table 9.5 we tested the impact of varying assumptions in the spreadsheet model on indicative levels of theoretical surplus from development that could be secured as developer contributions to help fund infrastructure requirements.

⁵⁸ The base case land costs for the urban extension and suburban sites were assumed to be from £250,000-£500,000 per ha, depending on whether they were in low, medium, or high price area. The sensitivity testing took this to £100,000-£300,000 per ha.

9.31 Table 9.6 below shows the impact of these different assumption scenarios on the overall estimated infrastructure funding gap for the uncommitted PKDS development. Although our developer contribution analysis is at a high level, it demonstrates how the roles of the planning system in relation to its requirements and also its ability to ensure landowners and developers do not over-inflate land costs in relation to the contributions required towards infrastructure funding.

9.32 As we have set out above, the justification for securing high levels of developer contribution would need to be robust.

Table 9.6 Impact of development assumptions on overall funding gap

Assumption Scenario	Estimated Indicative Developer Contribution Funding	Estimated Overall Funding Gap
Base Assumptions	£508.7m	-£1231.4m
Lower Land Costs Assumptions	£813.5m	-£926.5m
Lower Planning Requirements Assumptions	£1451.7m	-£288.3m

Source: RTP

Cashflow “pinch points”

There are potential infrastructure funding timing issues that need to be addressed

9.33 We used the model to look at particular cost and funding “pinch points” - for example, the times where up-front infrastructure requirements and costs ran ahead of funding.

There are large funding gaps in the initial and final years of the spreadsheet model

9.34 Table 9.7 below shows the funding gap varies over the study period. The gap is significant in the first five years as the spreadsheet model assumes that infrastructure expenditure is required, but there is insufficient funding for it. The main reason for this is the substantially lower developer contributions due to both the estimated effects of the market on contributions.

9.35 There is also a large funding gap in the last five years of the study period. Although estimated indicative developer contribution funding are assumed to have increased by this time, infrastructure costs are assumed to be twice that of the first five years. This is due to a number of the largest infrastructure requirements, including the second Avonmouth crossing and the Bristol Bath Corridor transport package, assumed as being delivered in this period.

Table 9.7 Cashflow of infrastructure costs and funding

	2009-2015	2016-2020	2021-2026	TOTAL
Estimated Infrastructure Cost	-£599.1m	-£735.7m	-£1173.9m	-£2511.8m
Estimated Mainstream Funding	£290.2m	£351.5m	£130.1m	£771.8m
Indicative Developer Contributions	£47.0m	£226.5m	£235.1m	£508.7m
Total	-£261.9m	-£157.6m	-£808.7m	-£1231.4m

Source: RTP

Pulling together a picture of the overall funding gap

9.36 Table 9.8 below summarises the estimated costs and funding for the uncommitted growth in the PKDS, and the overall estimated funding gap of £1.23bn.

Table 9.8 Overall estimated infrastructure costs and funding

	Estimated Cost	Estimated Funding	Estimated Funding Gap
Transport	-£1716.5m	£763.1m	-£953.3m
Education	-£624.3m	£0.0m	-£624.3m
Parks, open space & public realm, leisure/ sports	-£171.1m	£8.7m	-£162.4m
Developer Contributions		£508.7m	£508.7m
TOTAL	-£2511.8m	£1280.5m	-£1231.4m

Source: RTP

10 DO “GROWTH BARRIERS” OBSTRUCT THE DELIVERY OF THE PKDS?

Introduction

- 10.1 In this section we are identifying “growth barriers”. We cover the usual infrastructure categories of gas, electricity, water, sewage and draining, telecommunications, and flood protection.
- 10.2 Here we cover growth barriers which apply both to housing and employment components of the PKDS.

Defining “growth barriers”

- 10.3 “Growth barriers” may arise when
- The absence of certain types of infrastructure might mean that the housing and jobs growth at a PKDS might not be deliverable until later than anticipated, if at all. Long lead times for the implementation of certain types of infrastructure may be a particular problem here. Examples might include a shortage of clean water or sewage capacity, or capacity in electricity supply. Clearly, housing and jobs growth would not be possible in the absence of these basic services.
 - The provision of certain infrastructure may be so costly that a site becomes economically unviable to develop. It is the case that many “growth barriers” can be overcome, given time and the necessary level of investment. Some elements of infrastructure provision costs will be borne by the private sector utilities companies involved. However, depending on the nature of connection works required, some costs may be passed on to developers in part or in whole. In both instances, the level of investment involved in overcoming the issue may be too high given the expected final value of the site. The level of costs that are passed on to developers will have a material bearing on developers’ views of the economic viability of the site. For example, a site which has high water connection costs will be less economically viable to develop, and so less attractive to a developer.
- 10.4 There are also a series of market failures and governance growth barriers (such as penalties for “first movers”) but we do not deal with these in this chapter.

How growth barriers affect viability

- 10.5 We take account of infrastructure costs in our spreadsheet model by ascribing a “low”, “medium” and “high” abnormal cost to developments. This categorisation has been made on the basis of our understanding of the issues discussed here.
- 10.6 We have then fed these findings into our high level viability calculations. These are discussed in more detail in the following section.
- 10.7 Although we have reported cost estimates in our narrative, it is important to note that we have not entered specific abnormal cost estimates into our infrastructure spreadsheet model. This is for two reasons.

- The inclusion of specific abnormal cost estimates is not necessary at this stage. Our work is intended to inform a strategic overview of a) the developer contributions possible from sites, and b) the rate at which sites are likely to come forward through the planning process given their economic viability. Our chosen method provides us with this analysis.
- The inclusion of specific abnormal cost estimates is not desirable at this stage. Existing infrastructure projects are often either uncosted, imprecise, or vary widely depending on options chosen. It would be mistaken for us to rely heavily on cost numbers generated at what remains a relatively early stage for many of these PKDS. It is important to avoid spurious accuracy. As we pointed out in section 5, our work does not represent a detailed site-by-site RICS Red Book compliant assessment.

- 10.8 Within each section of the discussion we consider:

- Who is responsible for implementing and paying for the infrastructure?
- Is there sufficient capacity to cope with planned housing and jobs growth? What effect does this have on viability?
- Other issues

How the “traffic light” tables work

- 10.9 Where helpful in this section, we have provided what we are calling “traffic lights” tables. These are intended to make the main infrastructure issues easily understandable by infrastructure type.
- 10.10 We have provided analysis tables for each PKDS. Where necessary, we have broken the PKDS down into their constituent parts.

What the red, amber and green bars mean

- 10.11 We have set out a timetable of constraints at site level using a “traffic light” format to allow a quick understanding of the issues.
- A red bar means that issues present a barrier to housing build out. In some instances, this is an unambiguous statement that housing development in a certain place is straightforwardly impossible - for example, the absence of a water main.
 - An amber colour suggests that development can in some instances proceed, but “with caution”. In some instances, there may be some barriers that remain to overcome. In other instances (such as in the case of education or green space) we have used the amber bar to show when the successful delivery of infrastructure depends on policy choices and the allocation of resources from either mainstream or developer contribution funding.
 - Green indicates that there are no barriers to progress that are apparent at this time at are known to our consultees. Clearly, this table should be reviewed as the development process progresses, and detail added over time. As we pointed out above, service providers have in all cases reserved the right to adjust their infrastructure requirements as more analysis emerges.
- 10.12 Finally, it is worth being absolutely clear as to what the traffic light bars are referring to. Because infrastructure investment is a means to an end - in this case, getting housing and jobs delivered - the traffic light bar refers to the extent to which *housing development* is affected by infrastructure investment. It does not refer to barriers to the investment itself. So, for example, a red bar on gas

means that the lack of gas infrastructure forms a barrier to housing build out, *so housing build out cannot take place* - rather than meaning that there are some general barriers to the creation of gas infrastructure.

Gas

Who is responsible for implementing and paying for gas infrastructure?

There are two gas pipeline systems: national high pressure networks (National Grid) and local low pressure networks (Wales and West Utilities)

- 10.13 The national high pressure gas transmission system is owned and operated by National Grid. National Grid gas transmission assets are located within the vicinity of the Avonmouth/Severnside, East Fringe of Bristol and Keynsham PKDS, although the location is outside the perimeter of these sites.
- 10.14 The National Grid supplies gas to lower-pressure local distribution networks. In the West of England the local distribution network is operated by Wales and West Utilities. Wales and West Utilities does not supply gas, but charges gas suppliers for the use of the network. Gas distribution companies have a regulatory and legal obligation to supply gas when requested.

Network reinforcement costs are met by the national and local distribution companies

- 10.15 Wales and West Utilities has stated it will meet the costs of the deep infrastructure required to serve new large scale development.

Gas connection costs will be privately funded

- 10.16 The cost of connecting a new development to the local network is borne by the developer. The costs of connections to units within a development site are also the responsibility of a developer.
- 10.17 The costs of new mains to connect developments back to a suitable gas supply and any strengthening of that supply are also the responsibility of developers. When this is part of a large scale new development (i.e. significant growth within a PKDS) the requirement for strengthening is unlikely to occur as Wales and West Utilities will meet the costs of new infrastructure to service the development. Some infill sites may be required to contribute towards reinforcement of supply.
- 10.18 Provision of on-site gas distribution is the responsibility of the developer, as part of construction. A competitive market operates for the connection of new developments and local site connections to wider networks may be dealt with by independent gas transporters (IGTs) who may absorb some costs in anticipation of future revenues.

Is there sufficient capacity to cope with planned housing and jobs growth? What effect does this have on viability?

The national network has sufficient capacity to cope with growth

- 10.19 National Grid considers that the national high pressure distribution system will be able to meet the level of growth proposed for the West of England without any strengthening.

The local distribution network appears to have sufficient capacity to cope with growth, although ongoing work is required

- 10.20 Wales and West Utilities state that they cannot accurately assess the precise scale of local network strengthening and new mains required and their costs at the moment. Any work needed to supply new development will be at the local distribution level and costs are highly dependent upon the distance of the development from intermediate pressure mains as well as proposed road and unit placements. Without detailed plans, costs cannot be estimated.
- 10.21 Wales and West has an ongoing programme of investment using its own resources that can be used to serve growth as well as consolidate their existing network. For example, Wales and West Utilities has an ongoing investment programme to replace mains with polyethylene, which allows greater pressure thereby increasing overall capacity. Wales and West will include infrastructure to serve new development as part of their ongoing programme of investment, provided that they are aware of the scale and timing of development.

There are no supply or viability growth barriers resulting from gas infrastructure requirements at the PKDS

- 10.22 On the information available at this stage, gas supply will be provided by private sector investment and is unlikely to pose any growth barriers with regard to either provision or viability, provided that gas suppliers and distributors are kept aware of development phasing.

Other Issues

At least one gas pipeline may need to be moved

- 10.23 North Fringe of Bristol (PKDS 11) includes an area between Stoke Gifford and the M4/M32 that is traversed by a high pressure gas pipeline. These may impede some development on this site⁵⁹ although careful masterplanning could locate roads or greenspace above the pipeline. Wales and West Utilities suggest that the cost of re-routing the pipeline may be in the region of £2.5m - £3m. These costs would need to be confirmed by a design study in due course. If the pipeline needs to be moved the developer will be expected to meet the costs incurred.

Electricity

Who is responsible for implementing and paying for electricity infrastructure?

The national network in the West of England

- 10.24 National Grid operates the national electricity transmission network across Great Britain and owns and maintains the network in England and Wales, providing electricity supplies from generating stations to local distribution companies. National Grid operate 400kV and 275 kV lines.
- 10.25 The National Grid electricity transmission cables include the 400,000V line 4YX, which runs from Cilfynydd (in Wales) to Melksham; the 400,000V line 2VL, which is connected to 4YX at tower 172 and feeds Seabank substation in Bristol; and the 275,000V line XL, which runs from Whitson (in

⁵⁹ Wales and West Utilities advises a 16m building proximity distance either side of the pipeline

Wales) to Iron Acton substation in South Gloucestershire, and continues from Iron Acton to Melksham. 4YX and XL routes pass close to Yate (PKDS 12) and 2VL route passes through Severnside (PKDS 8), where there may be some development constraints along the route.

The local component to electricity supply in the West of England

10.26 There are two local distribution companies in the West of England, who use the 132kV, 33kV and 11kV distribution network (plus a 6.6kV network for Bath), along with the 230/400 volt network supply. These are as follows.

- Western Power Distribution (WPD) cover the area south of the M4 and west of the A4174 - i.e. Bath & North East Somerset, Bristol City Council area, North Somerset and parts of South Gloucestershire, and then south west to Lands End. The area west of the A4174 in the East Fringe of Bristol is covered by Western Power Distribution, as well as the area to the east of the A4174 including Emersons Green East and Pucklechurch.
- E.ON Central Networks (Central Networks) cover the remainder of South Gloucestershire and then north to the Peak District and east to the Lincolnshire coast. The area east of the A4174 in the East Fringe of Bristol is covered by Central Networks except for the area including Emersons Green East and Pucklechurch.

Is there sufficient capacity to cope with planned housing and jobs growth? What effect does this have on viability?

National Grid has no issues with growth

10.27 National Grid advises that the growth proposed for the west of England will not have a significant effect on their infrastructure. Existing capacity is sufficient to deal with projected demand.

Western Power Distribution has identified a set of network reinforcements that would be required to support the growth planned in the PKDS.

10.28 Western Power Distribution (WPD) has discussed an initial view of the reinforcements that will be required to serve development on the PKDS. These have been summarised in the table below and relate to the time of writing - so capacity available now may not be in the future, and vice versa.

10.29 The 132kV and 33kV network may need to be reinforced and it is likely that there will be a need for reinforcement or construction of some 33/11kV substations. Employment uses have been assumed to have no abnormal loads as part of this assessment - specific power requirements would be arranged on an individual basis where required⁶⁰.

10.30 Costs for substations vary but as a general guide, between £2.5m and £3m might be expected⁶¹. The key factor in determining costs is the length of the 33kV cable, with the actual substation normally about £1.5m. Typically, substations are either 15 MVA or 24 MVA (depending on the transformers used) and a development of 5,000 houses might produce a load of 7.5 to 8 MVA.

Central Networks has also identified network reinforcements that would be required to support the growth planned in the PKDS.

10.31 Central Networks have also provided a view relating to the current situation, so capacity available now may not be in the future, and vice versa. Some areas will need reinforcement and developers will be expected to meet the costs.

10.32 The specific capacity issues have been summarised in the table below. None are fundamental in themselves, although issues on the Northern Fringe are complex to resolve.

⁶⁰ E.g. data centres can require loads of 5-10 MVA and are footloose

⁶¹ Source Western Power Distribution

Table 10.1 Electricity Growth barriers (blue dotted lines should be disregarded: they are discussed in later sections)

	YEAR	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025/26	Viability impact on abnormal events	
Bath Centre incl. Western Riverside	Electricity																						Low
		Served by a 6.6 kV distribution network and this reduces the 'reach' of the available infrastructure. However, the City Centre and the Western Riverside are able to use capacity from three 33/11kV substations (namely Park Street, Dorchester Street and Oldfield Park). No electricity showstoppers in this respect. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																					
Keynsham	Electricity																						Low
		Served by two 33/11kV substations (Keynsham West and Keynsham East) and the closure of the chocolate factory has released capacity. Even if some of this capacity is used for part of the South East of Bristol urban extension (PKDS 3) or the southern part of the Eastern Fringe (PKDS 13), there should still be enough capacity. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																					
SE of Bristol prop. UE	Electricity																						Low
		The Whitchurch location is close to a 33/11kV substation with some capacity and can be reinforced. The Whitchurch sub-station will also be used for Hengrove Park (PKDS 6) which may take the available capacity. The exact requirements of this development are not known now, hence the amber light after the estimated 2016. The Hicks Gate location is between a number of substations but will probably be served by Feeder Road 33/11kV substation, which currently has capacity. Later development may have to pay for reinforcement. Impact on housing viability: low, as there are unlikely to be significant additional developer costs and where there are costs, these will be later on in the development process.																					
Bath prop. UE	Electricity																						Low
		Both locations are served by 33/6.6kV substations on the outskirts of Bath including Twerton and Oldfield Park (western location) and Entry Hill (southern location). It is likely that development can use existing capacity. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																					
Bristol City Centre	Electricity																						Low
		There is a new primary substation in central Bristol that has released capacity for this area. The St Philips area is supplied from Feeder Road 33/11kV substation. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																					
South Bristol	Electricity																						Low
		The Whitchurch 33/11kV sub-station will be used for Hengrove Park, which has some capacity but will need to be reinforced after early development or if the SE of Bristol urban extension uses the capacity (PKDS 3). Bishopsworth 33/11kV substation also serves south Bristol and has spare capacity. Impact on housing viability: low, as although there will be some costs, these will not affect the overall viability and will take place after initial development. Development after 2016 with caution as new capacity may be used elsewhere.																					
North Bristol	Electricity																						Low
		Served by substations with some capacity (Cribbs Causeway 33/11kV and Filton 33/11kV) and anticipated re-location of industrial users, if it happens, will release capacity. Pylons on Bonnington Way Allotments site that may need to be buried, although affects c. 50 houses, with little impact on overall housing numbers. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																					
Avonmouth	Electricity																						N/a
		There are substations (Western Approach 33/11kV and Kingsweston 33/11kV) with capacity that can be reinforced at a later stage if required. Note that we are not looking at employment viability, so no assumptions have been made regarding impact on abnormals.																					
Sevenside (S. Glouc)	Electricity																						N/a
		There are substations (Western Approach 33/11kV and Kingsweston 33/11kV) with capacity that can be reinforced at a later stage if required.																					
Weston TC, UA and prop. UE	Electricity																						Low
		Served by a 132/33 kV substation with 3 or 4 MVA capacity - would need to be reinforced to cater for the predicted 20MVA growth. Reinforcement costs would be shared between the developer and WPD. Impact on housing viability: low, as although there will be some costs, they are in the future. Develop with caution after 2015.																					
South West of Bristol UE	Electricity																						Low
		Served by three substations - Bedminster 33/11kV, Bishopsworth 33/11kV and Bower Ashton 33/11kV. Will need some limited reinforcement. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																					
North Fringe of Bristol	Electricity																						Medium
		Includes three substations (Almondsbury 33/11kV, Bradley Stoke 33/11kV and Cribbs Causeway 33/11kV substations) and the Bradley Stoke 132/33kV Bulk Supply Point (BSP). Much of the 33kV network infrastructure is at capacity (or has new load coming on in the next few years which will use the capacity) and therefore there may be a need for a new primary substation specifically to serve this development. There is the opportunity to use some of the capacity that would otherwise serve North Bristol (PKDS 7) which would serve some of the existing development before the new running across the M32 site will need to be run underground. This will cost at least £20m. Approximately 50% of the houses may be built before cable needs to be moved. Impact on housing viability: medium as there are likely to be significant additional developer costs from running cable underground on M32 site although some development may be possible before cost need to be incurred. Amber reflects the uncertainty about re-routing pylons and the likely new substation.																					
Yate	Electricity																						Low
		Demand can be accommodated through existing capacity. No showstoppers. Likely low impact on housing viability.																					
East Fringe of Bristol	Electricity																						Low
		This PKDS is split between WPD and Central Networks along the route of the A4174. WPD area covered by two 33/11kV substations but both are close to capacity. Up to 5,000 houses could be built but network would need reinforcement after the development, funded through developer contributions. Central Networks have also indicated that development will require new infrastructure funded through developer contributions, although a limited amount of development can take place within existing capacity. Impact on housing viability: low, as there are unlikely to be significant additional developer costs. Development with caution in the longer term as capacity is used.																					

Source: RTP

Some costs will be borne by Western Power Distribution and Central Networks

10.33 Reinforcement costs are only chargeable to one voltage level above the voltage at the point of connection. Most of the developments will take a supply at 11kV, so reinforcement on the 33kV network will be shared between the local distribution companies and the developers. This means that the cost of any 132kV reinforcement is normally (but not always) borne solely by the local distribution companies.

Most of this reinforcement will be paid for by the developers

10.34 Reinforcement of the 33kV and 11kV networks will be paid for, on an apportioned basis, by site developers. The two elements of cost for which developers may be required to pay are:

- The full cost of providing the connection assets to serve the development. This comprises any 33kV, 11kV and 230/400V network extensions. If the new infrastructure is solely for the new development, then the developer will meet the entire cost. If WPD choose to use the sole use assets to supply other customers within five years of installing those assets, then the first developer will be eligible for a refund, in proportion to the load split between the first development and the second development
- A proportion of the 'up-stream' 11kV and 33kV reinforcement that is required to supply the development. The apportioned cost of the reinforcement to the developer is calculated as the specified demand of the development divided by the new capacity of the network. For example, if the new development requires 10MVA capacity, and the capacity of the reinforced network is 24MVA, then the developer will pay 10/24 of the cost of the reinforcement⁶². If a second developer wishes to connect, say, a 13MVA load to this reinforced network within five years of the completion of the reinforcement, the second developer would pay 13/24 of the cost of the reinforcement. If the second developer wished to connect later than five years after the completion of the reinforcement, the second developer would not have to contribute to the reinforcement

Exceptionally third party funding is used to increase electricity capacity

10.35 We understand from Western Power Distribution that SWRDA has helped fund additional electricity infrastructure for the Science Park at Emerson's Green in order to bring this important economic development project forward. From WPD's point of view, SWRDA has acted as any developer would and has paid the appropriate contributions, etc. There has been no collaboration between WPD and SWRDA outside of the published charging methodology.

Other Issues

There are some linkage issues

10.36 There may be a number of developments all being supplied by the same substations. In these instances, the early development may be able to utilise existing capacity and the later development will then have to pay for reinforcement. PKDS where this is an issue include the following:

⁶² This is based on the current charging rules set down by Ofgem, which could change in the future

- The Whitchurch location for the South East of Bristol urban extension (the western PKDS 3) and the developments at Hengrove Park in South Bristol (PKDS 6).
- Development in North Bristol (PKDS 7) may be able to use existing capacity unless this is used by development coming forward first in the Northern Fringe (PKDS 11).

Some power lines will need to be moved

10.37 Some lines will need to be moved, in order to free up site development and to order to overcome public resistance to buying housing near power lines. North Fringe of Bristol (PKDS 11) includes an area between Stoke Gifford and the M4/M32 that is traversed by a set of overhead electricity cables:

- A 33kV double-circuit overhead wood pole line (although these two circuits are cable through most of the Harry Stoke site, and go overhead just before Maules Lane), which feed Winterbourne 33/11kV primary substation;
- A 132kV double-circuit overhead tower line, which feeds Lockleaze 132/33kV Bulk Supply Point (BSP)
- A 275kV-construction double-circuit tower line (but energised at 132kV), which supplies Lockleaze BSP and Feeder Road BSP.

10.38 WPD's position is that these overhead lines do not physically impede the development of an area; and that it is possible to build close to, or even under, overhead lines, provided adequate clearances are maintained and access to towers is maintained. However the market view is that the overhead lines will reduce the saleability of dwellings and therefore will impede some development on this site⁶³. It is estimated that this will cost in the region of £20m to underground these cables. This site is adjacent to another site at Harry Stoke, which is also affected by these power lines and it is estimated to cost £15.5m to underground these lines. Undertaking both sites together would total £33.5m and produce some costs savings. These costs are preliminary and will depend on whether cables have to be run under the railway⁶⁴.

10.39 The Bonnington Walk Allotments site forming part of North Bristol (PKDS 7) has overhead pylons that may need to be buried, although this only affects about 50 houses⁶⁵.

10.40 As noted above, National Grid power lines cross Avonmouth/Sevenside (PKDS 8). As a general principle, National Grid will not move their transmission lines except to facilitate developments of national importance.

There is a need for liaison and forward planning

10.41 The construction of Bulk Supply Point and Primary substations involves long term planning, the purchasing of long lead time equipment and the purchasing of sites for the substations. It has been assumed that all wayleaves and legal requirements (including planning permission) for the substation

sites and cabling works will be forthcoming. Any delay in this process could significantly affect construction works and cause delays

There is a need for an equitable spreading of costs across site developers.

10.42 In providing supply reinforcements to PKDS, there is a risk that all the costs will fall on the first developer(s) or on the later ones (if new mains only become essential at that stage). It will be important to ensure that the costs are equitably borne by all the developers. An example of dealing with the former problem is a forward funding arrangement, with the cost recovered through a charge per dwelling. Without this type of arrangement there may be situations where early development takes place but later development is stalled because of having to bear a disproportionate amount of electricity infrastructure costs.

10.43 Subject to close working between the LPAs, developers and the two electricity distribution companies there appear to be no growth barriers with regard to electricity supply.

Water Supply

Who is responsible for implementing and paying for water infrastructure?

10.44 There is currently no 'national grid' in the water industry and thus water has to be collected, stored and distributed within the regions. In the West of England, water supply is provided by two companies:

- Bristol Water supplies most of the area except the Bath area. Bristol Water also serves some areas that are outside the West of England (e.g. in Somerset)
- Bath and the areas of Bath & North East Somerset to the east are supplied by Wessex Water. Wessex Water also provides sewerage to the whole sub-region and provides water and sewerage to extensive areas of the South West beyond West of England (parts of Somerset, Dorset and Wiltshire)

10.45 Water companies have a statutory duty to supply water to housing for domestic use on request. Water companies are also required to provide new supplies for non-domestic purposes provided the provision of such supplies does not jeopardise their obligations to existing customers, or incur unreasonable expenditure in carrying out works to meet those existing obligations. In practice, water companies do not refuse to make supplies available.

Is there sufficient capacity to cope with planned housing and jobs growth? What effect does this have on viability?

Future demand has been anticipated

10.46 Overall, it is clear that there is current capacity and that while future growth will introduce some strain, investments are planned that will improve supply and mitigate increases in demand.

10.47 Bristol Water has set out its plans to supply water to the current and future population in a Draft Water Management Plan⁶⁶. This plan and discussion with Bristol Water notes the pressures on water supply from climate change and from population growth, with the likely result that without some action

⁶³ Cross Party Inquiry into Childhood Leukemia, 2007 recommended a 60m offset either side of cables for schools and dwellings for 275 and 400 kV National Grid lines and 30m offset for the lower voltage distribution lines. The most recent report by SAGE (Stakeholder Advisory Group EMF) had an offset as an option, but not a recommendation. The decision on an offset is still with the government

⁶⁴ Source WPD, personal contact

⁶⁵ Source Bristol City Council

⁶⁶ Bristol Water, 2008, Draft Water Resources Management Plan

demand will outstrip supply and present levels of service will be compromised by 2013-15. Planned responses include measures to reduce leakage, incentives to reduce domestic usage (which is the main consumption of water) and development of new water supply - such as:

- Additional reservoir in Cheddar - c. £100m
- Further abstraction from the Avon - c. £100m
- Further abstraction from the Severn - c.£130m

10.48 Bristol Water has started the planning for an additional reservoir in Cheddar, which may be operational around 2022.

10.49 Wessex Water has also set out its plans to supply water to the current and future population in a Draft Water Management Plan⁶⁷. Wessex Water recognises the same pressures on water supply and demand, although the water resource zones utilised for this company provide more headroom to cope with change, with substantial resources to the north and south. In addition, Wessex Water takes a bulk supply from Bristol Water to supply Bath, the main population centre served by Wessex Water in the West of England. Wessex Water has proposals for extending its 'grid' system to free up 'locked' resources to meet future demand, give greater security of supply and improved river flows where its existing groundwater abstractions are having an adverse environmental impact.

The plans look at overall demand for water, and so are not site-specific

10.50 Strategic proposals are intended to cover the overall demand for water, and it is therefore not possible to identify the water demand implications of specific housing developments.

There are likely to be some local reinforcements to cope with growth, but these will be developed as detailed plans emerge

10.51 Both Bristol Water and Wessex Water advise that there will be requirements for local reinforcements to meet the needs of some of the growth proposals, but that these will require modelling to determine the requirements and their costs in any detail. This will not be possible until more detailed information is available on the location and scale of growth. As a result we have not set out a table of individual PKDS water supply issues as we have with some of the infrastructure services. A preliminary review suggests that there are no 'show-stoppers' as regards water supply.

Individual site connection costs are picked up by developers through the development process

10.52 Developers have the power under the Water Act to requisition connection of their on-site water mains to the water company's mains supply. The cost of this can vary considerably depending on the distance to be covered and whether the mains supply needs strengthening through the provision of, for example, larger mains pipes. The water companies charge these costs to the developers, with an offset to take account of future revenue from the new development.

10.53 In addition to the above costs, all connections to water companies' networks incur a standard infrastructure charge. For the year ending 31 March 2010, this is £297 per dwelling. The charge is changed each year in line with the retail price index. Allowances are given where a site has been connected within the previous five years.

10.54 We have not dealt with individual site connection costs separately. They will vary on a case-by-case basis. However, we have allowed for some connection costs within our spreadsheet model, and these are incorporated into our calculations of developer contributions.

Strategic projects are paid for through water companies' general water charges income

10.55 Strategic 'remote infrastructure' projects will be funded by Bristol Water and Wessex Water through borrowing financed by general water charges income raised from their existing and new customers. Price limits are set by their economic regulator, Ofwat, every five years and are based on asset management plans (AMPs) submitted by the companies. Ofwat is currently determining price limits for each company for the period 2010-15. This will include, for example, the new Cheddar Reservoir planned by Bristol Water as well as investments in bulk water movement to service housing growth in North Bristol.

Some funding for certain strategic projects will come from developers

10.56 Where off-site works have been identified to service specific development sites - such as new link/primary leading mains - developers will be expected to make a contribution to an amount determined at the detail design stage under the usual requisitioning/adoption process. This contribution will take into account the relevant Water Company's income from the new development. It seems likely that the volume of housing and employment growth within the PKDS will require some additional primary leading mains and that much of this will have to be paid for by development. These can have significant costs although if shared across the development on the PKDS this should not be prohibitive.

There are no obvious provision or viability growth barriers resulting from water infrastructure requirements at the PKDS

10.57 Otherwise, there appear to be no water supply growth barriers which will prevent or seriously delay the development proposed for the PKDS in the West of England. There are some issues on the South West of Bristol Urban Extension, where some strengthening is required.

Other issues

10.58 The issues we see here are as follows.

- The need for liaison and forward planning. It is important to provide adequate notice to ensure that supply reinforcement can be designed and undertaken in time to allow development to proceed as phased. At this stage it is not possible to determine whether there are problems with the capacity and location of local trunk mains which will affect the phasing of development. If there are no such problems, the phasing of these reinforcements will depend on the phasing of the development that they serve
- The need for an equitable spreading of costs across site developers. In providing supply reinforcements to developments, there is a risk that all the costs will fall on the first developer(s) or on the later ones (if new mains only become essential at that stage). It will be important to ensure that the costs are equitably borne by all the developers. One way to deal with this is through forward funding arrangements.

10.59 There are no specific timing impacts that need to be taken account of.

⁶⁷ Wessex Water, 2008, Draft Water Resources Management Plan

Sewerage

Who is responsible for implementing and paying for sewerage infrastructure?

- 10.60 Wessex Water is the incumbent sewerage company for the whole of the West of England area as well as other parts of the South West and Hampshire. Wessex Water has an obligation to collect, treat and safely dispose of sewage from residential areas. This obligation also applies to 'domestic' sewage from institutional, commercial and industrial premises. The company does not have a general duty to deal with non-domestic (trade effluent) discharges from industry if this would prejudice its ability to deal with domestic flows from planned new development. However, the company normally plans for dealing with non-domestic flows from general growth but may seek contributions from developers if a large trade discharge was proposed in an area where existing sewerage and/or sewage treatment capacity was inadequate.
- 10.61 In many areas, the water company also provides sewerage services but in the West of England much of the water is supplied by Bristol Water⁶⁸ while Wessex Water provides sewerage services.
- Developers pay for foul sewerage connections, with an offset to take account of future income to the sewage company*
- 10.62 Normally, developers provide foul sewerage connections on development sites at their cost. They may also lay off-site sewerage to connect their sites to the sewerage company's existing network if they can secure easements across third party land. Developers may offer their sewerage for adoption by the sewerage company but are not under an obligation to do so.
- 10.63 All new connections to Wessex Water's sewerage network incur a standard infrastructure charge. For the year ending 31 March 2010 this is £297 per dwelling. The charge is changed each year in line with the retail price index. Allowances are given where a site has been connected within the previous five years.
- 10.64 As an alternative to self lay, developers may requisition foul sewerage from the sewerage company at the developer's expense less an offset for future sewerage income. The capital and financing costs are met by the developer, with an offset to take account of future sewerage income generated from the properties which are connected. The costs of any reinforcement to the existing sewerage system to cater for the development are included within the requisition sum. The choice of pipeline routes, design and treatment location is entirely with the sewerage company.
- Sewage treatment works (STWs) are provided by sewerage companies through their 5-year investment programmes*
- 10.65 The industry's planning process for capital expenditure works on a five year cycle. Sewerage companies agree their five-year Asset Management Programmes (AMPs) with OFWAT and thereby the amounts they can charge customers for capital works. These are fixed, not rolling programmes: for example the next AMP (5), for the period 2010-2015 has been submitted by Wessex Water to OFWAT. This investment cycle can have implications for the timing of infrastructure planning.

⁶⁸ The water supply company boundary maps exhibited above demonstrate the respective areas covered by Wessex Water and Bristol Water for sewerage and water supply

- 10.66 The sewerage company must satisfy all regulations in relation to the discharges and facilities for treatment. In order to ensure that new developments do not exceed the available treatment and discharge capacities, the water company can request that phasing restrictions be applied to new developments whilst they undertake infrastructure reinforcement/expansion works. The Local Planning Authority may (if it so chooses) incorporate these phasing restrictions into any planning approvals. However, Wessex Water aims to ensure that its sewage treatment investment programme keeps pace with development and avoids the need for planning restrictions.
- 10.67 Extensions to sewage treatment works (STWs) normally require Environment Agency approval and may also require planning permission. The Agency seeks to ensure that the effluent discharge standards protect the receiving water body. For example, the Agency may require enhanced treatment to ensure that the levels of ammonia in the watercourse remain at acceptable levels.
- Is there sufficient capacity to cope with planned housing and jobs growth? What effect does this have on viability?*
- There are constraints in many of the PKDS*
- 10.68 Discussion with Wessex Water indicates that strategic improvement will be needed in response to the development planned for the West of England, with the preferred strategic solution for development in and around Bristol of taking additional sewerage to the Avonmouth STW, and with development in the north of the sub-region served by major improvements in trunk sewerage.
- There are no absolute capacity growth barriers that render any PKDS development impossible. However, there will need to be investment to increase capacity in order to cope with most PKDS*
- 10.69 There are no sewerage capacity growth barriers to the development proposed that are sufficiently serious to halt development entirely over the plan period, although there will be a set of investments required to facilitate all of the growth. In only a few of the PKDS is there enough capacity to take the required development forward without any substantial investment and these are:
- Bath City Centre and Western Riverside
 - Bristol City Centre and St Philips
 - North Bristol
- The investment required has long lead times. This means that some PKDS will be limited in their rate of growth, because investment will not be in place*
- 10.70 Because of long lead times for provision of infrastructure, it is probable that:
- Some PKDS will only be able to take a limited amount of development forward now and the remainder after 2015 at the earliest - Keynsham, SW of Bristol urban extension, Yate, and the southern Bath urban extension
 - Some PKDS will not be able to take any development forward until 2015 at the earliest - SE of Bristol urban extension, southern part of the North Fringe, East Fringe.
- 10.71 The timing and location of development will be important in terms of the way that Wessex Water can respond - for example if all the Bristol, South Gloucestershire and Bath and North East Somerset development comes forward together, then Wessex Water should be able to expedite the downstream investment. If the development is piecemeal, developers may find sites are less economic to service.

The industry needs confidence that growth will actually happen before it will invest

10.72 Confidence in the rate of housing growth will be important to ensure that the necessary investment is in Wessex Water submissions to OFWAT - some of the investment may not be required until 2015-20 at the earliest.

10.73 Wessex Water will only invest in additional capacity when it is confident that growth will materialise. The company monitors housing completions and trends in compliance with effluent discharge standards and uses this information to programme investment. Where necessary the company installs temporary treatment in advance of permanent capacity where there is a long lead time and there is some uncertainty over whether development will materialise at the levels envisaged in local authority's development plans.

10.74 Discussions indicate that the rate of housing growth suggested by the draft RSS is higher than the volume of new connections experienced in the past. Confidence in the rate of housing growth will be important to ensure that the necessary investment is in Wessex Water's submissions to OFWAT.

Investment lead times are long. The necessary investment must precede development

10.75 The lead times imposed by the five-yearly AMP cycle on improvements to STWs need to be reflected in early engagement between the water companies, developers and LPAs.

10.76 Where the discharges from proposed developments require enhancements to STWs and the networks serving them, it is essential that these are carried out and completed before the developments are occupied. Close liaison between LPAs and the water companies is essential to ensure that the latter are aware of proposed development programmes.

Wessex Water's proposed sewerage investment programme is awaiting RSS outcomes and LDF Frameworks

10.77 In view of the current economic climate and uncertainty over location and timing of development, Wessex Water is awaiting the outcome of the Regional Spatial Strategy and Local Development Frameworks before formulating its detailed investment programme.

10.78 When sites have been firmed up, the company will undertake detailed appraisals to determine specific requirements and likely costs. The company has confirmed it will respond in a timely manner to development proposals as they arise to meet the requirements of the developers and approved development plans.

Table 10.2 Sewage: growth barriers (blue dotted lines should be disregarded: they are discussed in later sections)

	YEAR	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025/26	Impact on developer costs	
Bath Centre incl. Western Riverside	Sewage																					Low	
Keynsham	Sewage - K2																						Medium
Keynsham	Sewage - Rest of Keynsham																						Medium
SE of Bristol prop. UE	Sewage																						Medium
Bath prop. UE	Sewage																						Medium
Bristol City Centre	Sewage																						Low
South Bristol	Sewage																						Medium
North Bristol	Sewage																						Low
Avonmouth	Sewage																						N/a
Sevenside (S. Glouc)	Sewage																						N/a
Weston TC, UK and prop. UE	Sewage																						Low
South West of Bristol UE	Sewage																						Medium
North Fringe of Bristol	Sewage																						Low
Yate	Sewage																						Low
East Fringe of Bristol	Sewage																						Low

Source: RTP

Other issues

There may be development timing impacts

- 10.79 Much of the sewerage infrastructure to service new development will be dependent on developer funding. To avoid those developers who start early contributing an undue proportion of the costs or on development being delayed due to infrastructure provision, it would be desirable to explore funding mechanisms which would provide more certainty of investment and a more equitable apportionment of costs against the various developers.

There are some cross-boundary issues

- 10.80 Cross boundary issues include:

- The strategic preference to take sewerage from Keynsham, the SE of Bristol urban extension and the Eastern Fringe through Bristol to Avonmouth
- The early development links between Keynsham and the SE of Bristol urban extension and the southern part of the Eastern Fringe - all share the same headroom of about 500 houses under the current facilities. We have assumed that Keynsham will use this capacity (at the Keynsham STW) but it could be one of the other locations
- Development at Yate, Northern Fringe and Eastern Fringe will all be dependent on measures to provide capacity in the Frome Valley Sewer through the Frome Valley Relief Sewer. While some development can take a place before this is triggered, a robust S106 strategy will be required to ensure that the cost is shared across the development being served

Housing needs to be at a distance from sewage treatment works

- 10.81 STWs can give rise to odour and fly nuisance and are not good neighbours. Wessex Water has for many years advised that buffer zones should be maintained between new development and their STWs to avoid occupiers suffering environmental nuisance. As STWs are also strategic sites and essential infrastructure to facilitate growth, adequate land needs to be safeguarded for future extensions. This is supported by planning guidance and is incorporated in most local authorities existing approved local plans. Adequate consideration should therefore be given to these requirements when planning new land allocations.

Telecommunications

Who is responsible for implementing and paying for telecoms infrastructure?

Telecoms provision is dealt with privately

- 10.82 BT Openreach has an obligation to provide a landline to every household in the UK, and developers will want to facilitate this otherwise their developments will be unsellable. It is standard practice for developers to provide the necessary conduits for cable connections. The market is functioning well in this regard and there is no need for public involvement. There are no infrastructure requirements on the public sector for providing either fixed-line or mobile telecom services.
- 10.83 Mobile phone provision is also a matter for private sector provision. The main requirement is for sites for masts. This is dealt with through the development system.

- 10.84 Broadband access is also almost universally available through the market, so this places no infrastructure demands on the public sector either. Business users can purchase additional bandwidth through the market to speed up their internet access if they wish to.

The Universal Service Broadband Commitment is not anticipated to have a major impact on new growth

- 10.85 In June 2009 the Government confirmed its intention to deliver the Universal Service Broadband Commitment at 2Mbps by 2012. This commitment constitutes national level infrastructure and so is external to our study. Additionally, it is focused on existing shortcomings in the broadband network, and so cannot be said to apply to growth. (We anticipate that in many cases, new development can be expected to be connected to new generate, high quality connections).⁶⁹

Is there sufficient capacity to cope with planned housing and jobs growth? What effect does this have on viability?

New capacity will be built in line with development. There will be no effect on viability

- 10.86 Telecom services are rolled out as the new housing and commercial development is built. Generally this will be through standard cabling and street cabinets but may involve the provision of a new exchange, generally triggered by distances of more than 6-7km from existing exchanges. BT Openreach has identified that this may be necessary in Yate (PKDS 12) and Weston-super-Mare (PKDS 9).

- 10.87 Any necessary infrastructure will be provided by BT Openreach and so will not have an impact on viability.

New infrastructure for growth will be funded privately. Investment will not take place until BT Openreach is confident of growth actually materialising

- 10.88 New telecoms infrastructure provision is through private investment:

- In the case of both fixed-line and mobile, telecoms, new infrastructure will be funded from the capital programmes of BT, mobile operators and cable companies, where the latter operate
- The Universal Service Commitment will have some direct public funding, along with private sector and users contributions. It is not clear how this will affect development on the PKDS. It is likely that physical infrastructure would be part of BT's Public Service Obligation on phone provision.

- 10.89 Costs of infrastructure will vary but we are aware that a new exchange may cost in the region of £7m-£8m⁷⁰. New exchanges are paid for by BT Openreach but will not be built until there is firm assurance of development taking place.

⁶⁹ The Universal Service Commitment can be delivered through upgrades to the existing copper and wireless networks. It will be delivered by a mix of technologies: DSL, fibre to the street cabinet, wireless and possibly satellite infill. It will be funded from £200m from direct national public funding, enhanced by five other sources: commercial gain through tender contract and design, contributions in kind from private partners, contributions from other public sector organisations in the nations and regions who benefit from the increased connectivity, the consumer directly for in-home upgrading, and the value of wider coverage obligations on mobile operators arising from the wider mobile spectrum package.

⁷⁰ Based on the cost of a recent new exchange in Swindon to support new housing growth, source BT Openreach personal contact

Flood Protection

Who is responsible for implementing and paying for flood protection infrastructure?

10.90 Local Planning Authorities (LPAs), developers and the Environment Agency have a role in the flood implications of development⁷¹.

The developer has the main responsibility for flood defence

10.91 Flood risk management requirements of individual sites are borne privately by the developer. As part of any development agreement, a developer has a responsibility to ensure that the new development:

- Is properly defended from external flood risks to an adequate standard
- Is properly drained, so ensuring that ground water and rainfall does not cause an unacceptable risk of on-site flood problems
- Does not generate an unacceptable risk flooding on adjacent land as a result of changes to the drainage of their land, beyond what might be considered to be reasonable from a natural (undeveloped) area

10.92 Developers may also lay surface water sewerage and either retain as private sewers or offer for adoption. Alternatively they may requisition surface water sewerage from the sewerage company. Wessex Water will normally look for attenuation of surface water runoff where discharges are proposed to its network to reduce the risk of downstream flooding and pollution.

10.93 Various stakeholders have an involvement in approving arrangements for surface water disposal such as local authorities, the Environment Agency, internal drainage boards and sewerage companies. Because of concerns over increasing the risk of downstream flooding of watercourses, there is a general requirement to dispose of run-off as close to the source as possible by means of sustainable urban drainage systems (SUDS). Developers should engage with the relevant stakeholders at an early stage to ensure that adequate land is identified to install SUDS. This is particularly important with small developments and infill sites where increased densities may conflict with achieving SUDS.

The Environment Agency can veto development on flood matters

10.94 The EA is a statutory consultee for planning purposes, and has the scope to act as a 'showstopper' if there is a major risk of flooding from, or to, any proposed new development.⁷² If a LPA wishes to approve a major application where the EA have maintained an objection on flood risk grounds, the application must first be referred by the LPA to the Secretary of State under the provisions of the Town and Country Planning (Consultation)(England) Direction 2009.

10.95 The West of England Area is covered wholly by the Wessex Area (Bridgwater office) of the EA's South West Region, which also covers most other parts of Somerset, Wiltshire, Dorset, Devon and Cornwall.

10.96 The Environment Agency takes a strategic approach nationally to flood risk management by prioritising strategic flood risk management investigations, investment and resources to areas where flood risk can be most effectively reduced. Regional Flood Defence Committees oversee the Environment Agency's flood defence functions.

PPS 25 and Strategic Flood Risk Assessments at UA level

10.97 The aims of planning policy on development and flood risk are to ensure that flood risk is taken into account at all stages in the planning process to avoid inappropriate development in areas at risk of flooding, and to direct development away from areas at highest risk. Where new development is, exceptionally, necessary in such areas, policy aims to make it safe without increasing flood risk elsewhere and where possible, reducing flood risk overall.

10.98 Planning Policy Statement 25 *Development and Flood Risk* (PPS 25) provides national guidance on development and flood risk, emphasising the need to effectively manage flood risk within the planning system, rather than relying on reactive solutions to flooding. This includes the responsibility for Local Planning Authorities to reduce the flood risk to people and property as a result of new development.

10.99 PPS 25 identifies the preparation of Strategic Flood Risk Assessments (SFRA) to be used as a planning tool. It is an assessment of flood risk to inform the spatial planning process. All of the local authorities within the HMA have undertaken a Level 1 SFRA and will use this to inform the evidence base in determining the spatial direction of growth.

- Bath and North East Somerset Council has undertaken a Level 1 SFRA for the district and a Level 2 assessment for the River Avon through Bath & Keynsham. Work is currently taking place to identify the options for addressing flood risk solutions and costs, due to be finally completed in August 2009
- Bristol City Council has undertaken a Level 1 SFRA for the City and is co-ordinating a study updating the 2007 Flood Risk Assessment for Avonmouth and Severnside⁷³ on behalf of Bristol City and South Gloucestershire Councils.
- North Somerset Council has undertaken a Level 1 SFRA for the district and a specific Weston Flood Management study.
- South Gloucestershire Council has undertaken a Level 1 SFRA for the district and is a partner in the 2007 Flood Risk Assessment for Avonmouth and Severnside discussed above.

10.100 Note that the Environment Agency sometimes regards housebuilding as acceptable in areas prone to flooding where design measures have been taken to avoid or mitigate the consequences of water damage. However this can add considerably to the cost of building houses and in turn affect viability.

⁷¹ PPS 25 Annex H

⁷² Town and Country Planning (General Development Procedure) (Amendment) (No.2) (England) Order 2006

⁷³ Bristol City Council, South Gloucestershire Council & Lower Severn Drainage Board 2007 *Flood Risk Assessment Avonmouth / Severnside*

Are the flood defences sufficient to cope with planned housing and jobs growth? What effect does this have on viability?

There are no clear growth barriers where the EA will veto development at a PKDS

10.101 There are no current flood risk growth barriers to the development proposed, although there may be problems if higher vulnerability classification development types are proposed in certain flood risk areas⁷⁴.

There are a number of flood issues around the West of England. These are summarised in the growth barriers table overpage. Avonmouth and Severnside have the highest flood risk. Commercial use is at Severnside is permissible under existing consents

10.102 In addition, there are flood issues for many of the Bath City Centre and Western Riverside sites, and with Bristol City Centre and St Philips.

10.103 In addition the South West of Bristol Urban Extension will require a new flood scheme, which will add to the costs of development. Development on other PKDS will require sustainable urban draining systems (SUDS), which manage the flow of runoff.

10.104 The location with the highest risk is the proposed development at Avonmouth/ Severnside. This location has a high risk of fast and high flooding. Some development at Severnside is permissible under the existing 1957 ICI consent for some of this area, although if this legal situation were not in place then development in the area would be tightly controlled by the EA. Avonmouth does not have these legal complexities, and under current guidance, development at Avonmouth may not be permitted without protection from a major tidal flood scheme. Even if consent was granted, it is possible that future developments in this location may face difficulties with finance and insurance because of raised perception of these flood risks. In this way, the market may provide a showstopper, although there is no current evidence of this.

10.105 We say more about Avonmouth and Severnside in paragraph 13.45 onwards.

10.106 The table below summarises the flood risk issues for each of the PKDS.

We make an allowance for typical SUDs costs on all sites, but some sites may have flood costs that go beyond typical levels

10.107 SUDs costs are taken care of generically in our spreadsheet model (which makes assumptions of some generic SUDs costs to arrive at a land price, and a consequent possible developer contribution). However, these are considered as secondary infrastructure which the developer will ordinarily provide as part of the development.

10.108 Some sites may have particularly high flood costs. These are of concern because these costs may materially affect viability. This needs to be taken account of in our calculations. We have noted which sites have high costs and taken account of these instances when allowing for abnormal costs in our spreadsheet model.

10.109 Although the Environment Agency has helped to pay for some of the cost to protect existing development in Bristol City Centre and St Philips, the costs of protecting the new development on the PKDS will have to be met through private sector developers and, possibly, third party funders. Some of this will be the SUDS which would normally be part of development, but some of the development will incur additional costs, some of which will be off site:

- The cost of flood plain compensation measures on the western of the two Bath urban extension locations (PKDS 4) to meet some of the risks posed by the Bath City Centre sites (PKDS 1)
- The cost of surface water regulation in South Bristol (PKDS 6) and in North Bristol (PKDS 7 and 11 in South Gloucestershire) to reduce risks in the City Centre (PKDS 5)
- The cost of surface water regulation in the East Fringe of Bristol (PKDS 13 in South Gloucestershire) to reduce flood risks in Keynsham (PKDS 2) and Bristol City Centre (PKDS 5)
- The c.£10m cost of flood risk management improvement measures to support development in the SW Bristol urban extension - with a scheme likely to be within Bristol City Council area

Environment Agency Funding

10.110 The Environment Agency receives Defra Grant in Aid which is used for the Agency's own non-capital activities to manage flood risk, for example on maintenance of defences, operational costs etc.

10.111 In addition, Defra capital grants for flood risk management are administered by the Environment Agency to support capital improvement projects to reduce flood and coastal erosion risk undertaken by the Agency itself, local authorities and internal drainage boards.

10.112 The focus for the capital expenditure is on projects to protect *existing development*, rather than to facilitate new growth. This is in compliance with Treasury guidance on this issue. Prioritisation of projects is through a cost benefit analysis, which then informs short, medium and long term Agency investment planning.

⁷⁴ Tables D2 and D3 in PPS 25 set out the vulnerability classification and appropriateness for location within different flood risk areas. In summary, various emergency facilities, dwellings and some non-residential uses are classified as highly or more vulnerable; and may not be suitable for flood risk classification areas 2, 3a or 3b

Table 10.3 Flood protection growth barriers (blue lines should be disregarded : they are discussed in later sections)

	YEAR	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025/26	Viability - based on potential costs	
Bath Centre incl. Western Riverside	Flood protection																						Med(city)/High (BWR)
Keynsham	Flood protection																						Medium
SE of Bristol prop. UE	Flood protection																						Low
Bath prop. UE	Flood protection																						Low
Bristol City Centre	Flood protection																						Low
South Bristol	Flood protection																						Low
North Bristol	Flood protection																						Low
Avonmouth	Flood protection																						N/a
Sevenside (S. Glouc)	Flood protection																						N/a
Weston TC, UA and prop. UE	Flood protection																						Medium
South West of Bristol UE	Flood protection																						Medium
North Fringe of Bristol	Flood protection																						Low
Yate	Flood protection																						Low
East Fringe of Bristol	Flood protection																						Low

Source: RTP

Other Issues

10.113 The EA has indicated that it would prefer, wherever feasible, strategic flood risk solutions i.e. those that provide broader flood risk and environmental benefits than merely dealing with flood risks on an individual site. In particular, this could include:

- Floodplain compensation measures on the western of the two Bath urban extension locations (PKDS 4) to meet some of the risks posed by the Bath City Centre sites (PKDS1)
- A solution to deal with the severe flood risks to the whole Avonmouth/Sevenside tidal cell
- Measures in South Bristol (PKDS 6) and North Bristol (PKDS 7 and 11) to reduce risks in the City Centre (PKDS 5)
- Measures in the East Fringe of Bristol (PKDS 13) to reduce flood risks in Keynsham (PKDS 2) and Bristol City Centre (PKDS 5)

There are some cross-boundary issues

10.114 Cross boundary issues include:

- The relationship between development on the South Gloucestershire's Northern Fringe and East Fringe PKDS and development in Bristol City Centre
- The relationship between the South Gloucestershire East Fringe and development in Bath and North East Somerset Keynsham
- The need for the North Somerset SW of Bristol urban extension to have a flood scheme within Bristol City Area
- The cross-border nature of the risk and potential flood solutions in Avonmouth/Sevenside

10.115 With the exception of the new flood scheme for the SW of Bristol urban extension, these cross border issues are opportunities to provide strategic solutions to flood risks rather than growth barriers.

Development Timing Impacts

10.116 If a strategic solution is sought involving benefits to Bath City Centre from a Bath Urban extension at Twerton, then these two PKDS will need to be developed in tandem.

10.117 Other than this, there are no apparent development timing impacts.

11 THE “TRAFFIC LIGHTS”: ASSESSING GROWTH BARRIERS AT THE PKDS

Introduction

- 11.1 In this stage we have taken our findings from the sections above and (where relevant) made explicit what this means to likely progress on each site. The traffic lights tables provided in this section must be read together with chapters 6, 7, 8 and 10 of this report, where the individual thematic issues are discussed in detail.
- 11.2 Delivery issues for both housing and employment components of the PKDS have been considered in this work.
- 11.3 We have explained how the “traffic lights” work in section 10. Each table is made up of two main blocks. At the top are the “traffic light” sections which show red, amber and green bars (red indicates barriers to growth; amber means “proceed with caution”; and green indicates no barriers).
- 11.4 In some instances, the situation with regard to the red bars is necessarily ambiguous. These are discussed below.
- In the case of transport, the red bar shows when there is insufficient transport capacity to properly allow development forward. As we pointed out in the transport section, at what point in time exactly this red bar stops, and goes either green or amber, is a matter of professional judgement. (Precision here would demand complex modelling of intermediate points in the build out process, and this is not available). The particular difficulty is that, as we have seen in the transport section of this report, transport infrastructure in the West of England is generally currently either at or above capacity. This means that additional housing demand at certain points on the network resulting from jobs or housing growth could put unacceptable strain on the network. In such instances we have marked the bar at red. Of course, development of either jobs or housing is *possible* during this “red” period, but it is likely to have three effects. Firstly, congestion is likely to rise further, with consequent economic impacts; secondly, where there is an absence of proper alternatives to car use from the start of a new development, new residents attracted to developments will have commuting patterns and habits of car use that will militate against the sustainable use of public transport in future; thirdly, there may in some instances be air quality management problems; and fourthly, there are clear sustainability issues involved.
 - In the case of viability, the red bar shows the period which we believe a site will be unviable on the basis of the analysis discussed above in section 5. Clearly, this analysis is highly sensitive to individual circumstances and to the assumptions we are using. As we have explained elsewhere, we have not carried out individual analyses of the development economics of each site, and in any case our predictions of the future market conditions are unlikely to be precisely correct. Our work in this respect should be treated as indicative. Viability indications are also dependent on the assumptions we’ve been instructed by the client group to use (for example, regarding the amount of affordable housing and Code for Sustainable Homes). In doing this work, we have assumed that no HCA or other grant will be available, in line with policy. In cases where we know for certain that grant will be available, we have used this knowledge to modify our analysis, and have noted these changed assumptions in the table.

Assumptions we have used on the “site start delay” line

- 11.5 This section deals with the time take for site assembly, planning agreement, and masterplanning. It does not take into account viability or other constraints.

We have taken account of research which shows average site start delays

- 11.6 Looking at the years 1980-2004, work by Colin Buchanan has analysed the time taken between the submission of planning applications for 36 strategic sites and the first build out year.⁷⁵ The results are shown in the following table.

Table 11.1 Time between application submission and first year on site

	All strategic sites	1000-1,999 dwellings	2,000 to 2,999 dwellings	3000+ dwellings
Average time between application submission and first build year	5yrs	4.7yrs	5yrs	5.5yrs
Shortest lag time	1yr	1yr	1yr	3yrs
Longest lag time	13yrs	13yrs	11yr	10yrs

Source: Colin Buchanan

- 11.7 Some sites, particularly those with currently complex patterns of site ownership, can be expected to take considerable time in site assembly processes. We have assumed that site assembly can take place after the submission of a planning application. However, this may be optimistic in some instances. For example, in the case of St Philips (an industrial area on the fringe of Bristol City Centre) it is difficult to see serious residential growth without a comprehensive approach to redevelopment. In this area, a comprehensive approach would require the purchase of land at existing use values, and the relocation of existing businesses. This would be likely to take longer than average.
- 11.8 For full PKDS sites which require comprehensive masterplanning, we have assumed a four year time between application submission and first year on site. Our assumption is based on this being roughly half way between the shortest lag time and the average lag time for sites of above 3000 dwellings. This assumption therefore assumes that planning processes in the region will be comparatively quick.
- 11.9 For PKDS which are made up of smaller packages which can be built out incrementally, we have assumed a two year site delay.
- 11.10 Obviously, the real extent of these delays will depend on a number of individual circumstances - the most important being when a planning application is submitted. In most cases, we have assumed that a planning application will come forward at the end of 2009. This point in time has been chosen in anticipation of the appearance of the new RSS. If planning applications come later, then this delay would need to be adjusted.

⁷⁵ Colin Buchanan and Partners (Nov 2005) for Countryside Properties

- 11.11 When we know that planning applications have already been submitted, or that developers are already on site, then we have marked this issue as green on the timeline.

What the housing phasing section shows

- 11.12 The reader will notice housing trajectory tables at the foot of the traffic light table. We explain these issues in more detail in the next section

YEAR	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025/26	Viability - impact on abnormal costs	
FUNDING TIME BLOCKS	2006/11-					2011-16					2016-21					2021-26						
Bath City Centre & Western Riverside																						
Housing viability: Western Riverside	Urban High Value/High Abnormals																				N/a	
Housing viability: City centre	Urban High Value/Medium Abnormals																				N/a	
HCA in discussion on Western Riverside on Crest-owned part of site which may bring forward initial phases. Later phases may have viability issues. Indicative high level viability analysis (see important information on the methodology in Section 5 of main report) shows at Western Riverside has a theoretical development surplus of c.-£15,000 per unit, and c.£1,000 per unit at Bath City Centre, in full recovery on basis of assumptions made.																						
Gas																					Low	
No showstoppers. Local connection costs borne by developers along with some network strengthening costs. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																						
Electricity																					Low	
Served by a 6.6 kV distribution instead of 11 kV and this reduces the 'reach' of the available infrastructure. However, the City Centre and the Western Riverside are able to use capacity from three 33/6.6 kV substations (namely Park Street, Dorchester Street and Oldfield Park). No electricity showstopper in this respect. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																						
Water																					Low	
There may need to be new leading mains but these are 'normal' costs if spread across the development units (taking into account the size of the site). Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																						
Sewage																					Low	
Much of Bath has old combined surface water and foul sewerage systems. New development will use separate systems with reduced load. Existing facilities have capacity for new development. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																						
Telecommunications																					Low	
Infrastructure for growth will be delivered through private sector. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																						
Flood protection																					Med(city)/High (BWR)	
Initial cost estimates from current work being undertaken for B&NES Council suggest that upstream, downstream and site flood prevention measures to protect this area may cost in the region of at least £34.5m to protect both the City Centre and the Western Riverside. These measures will also provide flood risk management for Keynsham and enable development there. Impact on housing viability: medium in the city, high in BWR, as there are likely to be some significant additional developer costs dealing with flood risk and these measures will need to take place early in development. If the emerging strategic solution is delayed then some site specific solutions may be required (as per recent development at BWR), hence amber.																						
Acute healthcare	No information is available regarding acute health.																				N/a	
Transport																						
Priority Items on stream by 2011 and are complete by 2016 but other required measures not completed until 2016. More measures needed to address growth than currently identified (e.g. Bath Package created for pre-RSS growth), may need to be defined on a site-by-site basis. P&R sites subject to planning permission, not yet granted for 2 out of 4. URS have recommended extension of GBBN and A36 route treatment as further schemes.																						
Education																					N/a	
Current secondary capacity in various schools in central Bath, secondary requirement to be absorbed by existing 6 Bath Schools. Uncertain about capacity after 2016, due to unknowns relating to BSF implications and birthrate impact.																						
Parks and open space																					N/a	
Infrastructure delivery dependent on a) site masterplanning and b) policy choices on the use of developer contributions.																						
Site start delay (Western Riverside)																					N/a	
Site start delay (City centre)																					N/a	
We assume that a planning application comes forward at the end of 2009 for city. We understand an outline planning application exists for some of the BWR site, and so have reduced lag time for BWR.																						
Other barriers																					N/a	
Not applicable																						
a) Whole PKDS RSS(PC) compliant trajectory (2006-26; 5 yearly)	3,387	649					917					1,341					480					
b) Whole PKDS RSS(PC) compliant trajectory (annual run rate)	3,387	130	130	130	130	130	183	183	183	183	183	268	268	268	268	268	96	96	96	96	96	
c) In scope: target units to come, 2009-26, uncommitted	3,157				186	186	186	186	186	186	186	186	186	186	186	186	186	186	186	186	186	
d) In scope: RTP indicative delivery trajectory 2009-26	3,255							104	104	277	277	277	277	277	277	277	277	277	277	277	277	
e) Out scope: 2006-9 Dwellings completed	200	67	67	67																		
f) Out scope: dwellings with planning consent as of 2009 (with UA-provided delivery assumption)	30				15	15																
g) RSS(PC) projected delivery 2006-26 - RTP indicative trajectory plus built units 06-09 plus UA provided trajectory for committed units	3,485	67	67	67	15	15	-	-	104	104	277	277	277	277	277	277	277	277	277	277	277	
Trajectory notes	RSS trajectory based on whole Bath UA trajectory. Assumed 5.3 per wk build out for PKDS to achieve even run rate through balance of plan period after 2014. During 2013 & 2014 assumed 2 per week for Western Riverside, then following 2014 both BWR and City Centre on stream. Note that the delivery trajectory of units with planning consent in line f) has been provided to us by the UA. We have not independently analysed it. Recall that this study concentrates on "in-scope" development within PKDS boundaries.																					

YEAR	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025/26	Viability - impact on abnormal costs
FUNDING TIME BLOCKS	2006/11-					2011-16					2016-21					2021-26					
Keynsham																					
Housing viability: Town centre	Urban Medium Value/Medium Abnormals																				N/a
Housing viability: Cadbury's (Somerdale)	Suburban High Value/Medium Abnormals																				N/a
Housing viability: K2	Urban Extension High Value/Medium Abnormals																				N/a
Housing viability: Keynsham Urban Extension	Urban Extension High Value/Medium Abnormals																				N/a
Town centre sites mixture of car park, existing office and parkland, mostly owned by Council. High level viability shows unviable, but sites with lower existing use value, such as parkland, should be viable. Indicative high level viability analysis (see important information on the methodology in Section 5 of main report) shows Keynsham town centre has a theoretical development surplus of c.-£30,000 per unit even in full recovery on basis of assumptions made. Some sites in town centre may be viable where they have lower site acquisition and abnormal costs. K2, Urban Extension and Somerdale are c.£10,000 per unit in full recovery.																					
Gas																					Low
No showstoppers. Local connection costs borne by developers along with some network strengthening costs. Impact on housing viability: low, as there are unlikely to be significant additional developer costs																					
Electricity																					Low
Served by two 33/11kV substations (Keynsham West and Keynsham East) and the closure of the chocolate factory has released capacity. Even if some of this capacity is used for part of the South East of Bristol urban extension (PKDS 3) or the southern part of the Eastern Fringe (PKDS 13), there should still be enough capacity. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																					
Water																					Low
There may need to be new leading mains but these are 'normal' costs if spread across the development units (taking into account the size of the site). Impact on housing viability: low, as there are unlikely to be significant additional developer costs																					
Sewage - K2																					Medium
Development at K2 will have to bear costs of complex connection to sewerage network (route under River Chew) although up to 100 houses is possible before need for investment is triggered. Impact on housing viability: medium, as there are likely to be significant additional developer costs although these will be after the initial development. The traffic light is green to indicate the capacity for initial development at K2 and then amber to reflect the capacity and connection cost issues and uncertainty about whether other PKDS development will use new capacity																					
Sewage - Rest of Keynsham																					Medium
There is a Sewage Treatment Works (STW) at Keynsham but there is insufficient capacity to accommodate development beyond about 500 houses. We have not marked this as a red because there are other STW options (include splitting some of the catchment to the STW at Salford or using the trunk sewer to Avonmouth) and there are plans for reinforcement in the period 2010-15. Costs will be 'several £million', with developers expected to pay, although some of the development can take place first to help cash flow. Other PKDSs use this infrastructure. Impact on housing viability: medium, as there are likely to be significant additional developer costs although these will be after the initial development. The traffic light is green to indicate the capacity for initial development and then amber to reflect the capacity and connection cost issues and uncertainty about whether other PKDS development will use new capacity																					
Telecommunications																					Low
Infrastructure for growth will be delivered through private sector development. Impact on housing viability: low, as there are unlikely to be significant additional developer costs																					
Flood protection																					Medium
There are some fluvial flood risks for the land at Somerdale (Cadbury's site). However these are not showstoppers. Risk can be mitigated through works on site or upstream, paid for by developers. Some of this will be included within the flood risk management measures for Bath, discussed above. Other parts of the PKDS are not in the flood plain. Impact on housing viability: medium, as there are likely to be significant additional developer costs for flood prevention (which may be part of the Bath flood scheme). Amber reflects the current uncertainty about the emerging Bath strategic flood scheme.																					
Acute healthcare	No information is available regarding acute health.																				N/a
Transport																					
Greater Bristol Bus Network complete by 2011, Greater Bristol Metro Project not completed until 2021 and required for medium distance commuting. Without orbital BRT suggested by URS high dependence on car is likely to impact Bristol suburbs. URS suggest orbital BRT passing through Keynsham, although unlikely this could be implemented before 2021 due to RFA funding commitments.																					
Education																					N/a
Both schools in Keynsham (Wellsway and Broadlands) are at capacity, however, both serve catchments from outside the area. Given surplus capacity in Bristol, it would be possible to serve catchment population in the short term within these schools. BSF review highlights possibility of establishing one school here.																					
Parks and open space																					N/a
Infrastructure delivery dependent on a) site master planning and b) policy choices on the use of developer contributions.																					
Site start delay (Town Centre)																					N/a
Site start delay (Cadbury's / Somerdale)																					N/a
Site start delay (K2)																					N/a
Site start delay (Keynsham UE)																					N/a
We assume that a planning application comes forward at the end of 2009 for these sites.																					
Other barriers																					N/a
Not applicable																					
a) Whole PKDS RSS(PC) compliant trajectory (2006-26; 5 yearly)	3,000	250				930				1,050				770							
b) Whole PKDS RSS(PC) compliant trajectory (annual run rate)	3,000	50	50	50	50	50	186	186	186	186	186	210	210	210	210	210	154	154	154	154	154
c) In scope: target units to come, 2009-26, uncommitted	2,741				161	161	161	161	161	161	161	161	161	161	161	161	161	161	161	161	161
d) In scope: RTP indicative delivery trajectory 2009-26	2,392				-	-	-	-	-	104	208	208	208	208	208	208	208	208	208	208	208
e) Out scope: 2006-9 Dwellings completed	121	40	40	40																	
f) Out scope: dwellings with planning consent as of 2009 (with UA-provided delivery assumption)	138				50	25	26	37													
g) RSS(PC) projected delivery 2006-26 - RTP indicative trajectory plus built units 06-09 plus UA provided trajectory for committed units	2,651	40	40	40	50	25	26	37	-	104	208	208	208	208	208	208	208	208	208	208	208
Trajectory notes	Competes with South East Bristol UE. Build out rate reduced as a result. Assumed 2 per week in 2014 for K2 only + UE then 4 per week post 2014 to account for K2, UE, plus Cadbury's. Note that the delivery trajectory of units with planning consent in line f) has been provided to us by the UA. We have not independently analysed it. Recall that this study concentrates on "in-scope" development within PKDS boundaries.																				

YEAR	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025/26	Viability - impact on abnormal costs
FUNDING TIME BLOCKS	2006/11-					2011-16					2016-21					2021-26					
South East Bristol proposed urban extension																					
Housing viability: Hicks Gate/ Brislington	Urban Extension High Value/Medium Abnormals																				N/a
Housing viability: Whitchurch	Urban Extension High Value/Medium Abnormals																				N/a
Options are either a) Hicks Gate/Brislington and Whitchurch or b) all at Whitchurch Indicative high level viability analysis (see important information on the methodology in Section 5 of main report) shows both sites have a theoretical development surplus of c.£10,000 per unit in full recovery on basis of assumptions made.																					
Gas																					Low
No showstoppers. Local connection costs borne by developers along with some network strengthening costs. Impact on housing viability: low, as there are unlikely to be significant additional developer costs																					
Electricity																					Low
The Whitchurch location is close to a 33/11kV substation with some capacity and can be reinforced. The Whitchurch sub-station will also be used for Hengrove Park (PKDS 6) which may take the available capacity. The exact requirements of this development are not known now, hence the amber light after the estimated 2016. The Hicks Gate location is between a number of substations but will probably be served by Feeder Road 33/11kV substation, which currently has capacity. Later development may have to pay for reinforcement. Impact on housing viability: low, as there are unlikely to be significant additional developer costs and where there are costs, these will be later on in the development process.																					
Water																					Low
There may need to be new leading mains but these are 'normal' costs if spread across the development units (taking into account the size of the site). Impact on housing viability: low, as there are unlikely to be significant additional developer costs																					
Sewage																					Medium
Location also served by the STW at Keynsham – see capacity constraints above. If development takes place at Keynsham pre 2015 then there will be no capacity for development at this location until post 2015 at the earliest. The sewage will need to flow through Bristol and costs will be 'several £million', with developers expected to pay. The red indicates the block on development until the earliest period when capacity may be available followed by amber to indicate the uncertainty about whether capacity will be available here or for other development. Impact on housing viability: medium as there are likely to be significant additional developer costs, this is a large site and so split across the whole development, costs become more affordable. Our ranking takes into account these costs may be incurred at an early stage of development.																					
Telecommunications																					Low
Infrastructure for growth will be delivered through private sector development. Impact on housing viability: low, as there are unlikely to be significant additional developer costs																					
Flood protection																					Low
Both locations in Zone 1 i.e. little or no flood risk. It will be necessary to have SUDS as part of masterplanning in order to avoid flood impacts downstream in Bristol. Site will deal with its own flood risk at developer cost. Strategic Flood Mitigation Strategy is underway (September 2009). Impact on housing viability: low, as there are unlikely to be significant additional developer costs																					
Acute healthcare	No information is available regarding acute health.																				N/a
Transport																					
Greater Bristol Bus Network not sufficient because currently no orbital routes. Whitchurch bypass has no funding status and along with Callington Road Link/Bath Road Improvements considered to have only localised impact [GBSTS]. URS suggested Orbital BRT couldn't come on stream before 2021 as some RFA funding likely to be required (currently all allocated to 2019). No effective schemes have funding.																					
Education																					N/a
A new secondary school would need to be built somewhere in the centre of the proposed development between Whitchurch to Hicks Gate to serve the SUE.																					
Parks and open space																					N/a
Infrastructure delivery dependent on a) site masterplanning and b) policy choices on the use of developer contributions.																					
Site start delay (Hicks Gate/ Brislington)																					N/a
Site start delay (Whitchurch)																					N/a
Other barriers																					N/a
Not applicable																					
a) Whole PKDS RSS(PC) compliant trajectory (2006-26; 5 yearly)	8,000	-	-	-	-	800					3,200					4,000					
b) Whole PKDS RSS(PC) compliant trajectory (annual run rate)	8,000	-	-	-	-	160	160	160	160	160	640	640	640	640	640	800	800	800	800	800	
c) In scope: target units to come, 2009-26, uncommitted	8,000					160	160	160	160	160	640	640	640	640	640	800	800	800	800	800	
d) In scope: RTP indicative delivery trajectory 2009-26	1,560	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	312	312	312	312	
e) Out scope: 2006-9 Dwellings completed	-	-	-	-	-																
f) Out scope: dwellings with planning consent as of 2009 (with UA-provided delivery assumption)	-																				
g) RSS(PC) projected delivery 2006-26 - RTP indicative trajectory plus built units 06-09 plus UA provided trajectory for committed units	1,560	-	-	-	-	-	-	-	-	-	-	-	-	-	-	312	312	312	312	312	
Trajectory notes	NOTE THAT THE NUMBERS ABOVE RELATE TO THE BANES PORTION OF THE SITE. Competes with Keynsham and South Bristol. Usual 8 per week build rate reduced to 5 per week on the BANES site as a result. Some portion of site in BCC area. Should be seen together.																				
a) Whole PKDS RSS(PC) compliant trajectory (2006-26; 5 yearly)	1,834	-	-	-	-	183					734					917					
b) Whole PKDS RSS(PC) compliant trajectory (annual run rate)	1,834	-	-	-	-	37	37	37	37	37	147	147	147	147	147	183	183	183	183	183	
c) In scope: target units to come, 2009-26, uncommitted	1,834					37	37	37	37	37	147	147	147	147	147	183	183	183	183	183	
d) In scope: RTP indicative delivery trajectory 2009-26	520	-	-	-	-	-	-	-	-	-	-	-	-	-	-	104	104	104	104	104	
e) Out scope: 2006-9 Dwellings completed	-	-	-	-	-																
f) Out scope: dwellings with planning consent as of 2009 (with UA-provided delivery assumption)	-																				
g) RSS(PC) projected delivery 2006-26 - RTP indicative trajectory plus built units 06-09 plus UA provided trajectory for committed units	520	-	-	-	-	-	-	-	-	-	-	-	-	-	-	104	104	104	104	104	
Trajectory notes	NOTE THAT THE NUMBERS ABOVE RELATE TO THE BRISTOL CITY PORTION OF THE SITE. RSS trajectory based on BANES part of this UE. Competes with Keynsham and South Bristol. Usual small site build rate reduced to 2 per week on the Bristol site as a result. Should be seen together.																				

YEAR	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025/26	Viability - impact on abnormal costs
FUNDING TIME BLOCKS	2006/11-					2011-16					2016-21					2021-26					
Bristol City Centre																					
Housing viability: St Philips	Urban High Value/High Abnormality																				N/a
Housing viability: Rest of city centre	Urban High Value/Medium Abnormality																				N/a
	High potential existing use value and demolition, remediation issues at St Phillips. Rest of city centre sites assumed more straightforward. Indicative high level viability analysis (see important information on the methodology in Section 5 of main report) shows St Phillips has a theoretical development surplus of c.-£15,000 per unit and rest of city centre c.£1,000 per unit in full recovery on basis of assumptions made.																				
Gas																					Low
	No showstoppers. Local connection costs borne by developers along with some network strengthening costs. Impact on housing viability: low, as there are unlikely to be significant additional developer costs																				
Electricity																					Low
	There is a new primary substation in central Bristol that has released capacity for this area. The St Phillips area is supplied from Feeder Road 33/11 kV substation. Impact on housing viability: low, as there are unlikely to be significant additional developer costs																				
Water																					Low
	There may need to be new leading mains but these are 'normal' costs if spread across the development units (taking into account the size of the site). Impact on housing viability: low, as there are unlikely to be significant additional developer costs																				
Sewage																					Low
	Much of Bristol has old combined surface water and foul sewerage systems. New development will use separate systems which will reduce the load on the combined sewerage. Existing facilities have capacity for new development. Impact on housing viability: low, as there are unlikely to be significant additional developer costs																				
Telecommunications																					Low
	Infrastructure for growth will be delivered through private sector development. Impact on housing viability: low, as there are unlikely to be significant additional developer costs																				
Flood protection																					Low
	Fluvial risk from the Frome and the Avon, compounded by tidal flood risk. Current works by BCC are replacing the lock gates at Cumberwell Basin (the entrance to the floating harbour), which will deal with some of the risk. However there is further work needed relating to the tributaries and other entrances to the floating harbour e.g. Bathurst Basin and the Feeder Canal. St Phillips is low lying land (former marsh), protected by an embankment. The capacity of the floating harbour is considered to deal with current defences being overtopped for the time being. Future studies are planned, and these may lead to exploring the potential to revisit earlier Avon tidal barrier options. Impact on medium - low, as there are unlikely to be significant additional developer costs in the short term. Amber as further work likely to be required following future research																				
Acute healthcare	No information is available regarding acute health.																				N/a
Transport																					
	Although development could proceed without them the GBBN, BRT, and GBMP will play a significant role in providing for sustainable commuting to the city centre. GBBN is completed by 2011 but BRT and GBMP are not completed until 2021.																				
Education																					N/a
	Very limited capacity and schools are on constricted sites with few surplus places. Requirement based on current policy of encouraging single person housing.																				
Parks and open space																					N/a
	Infrastructure delivery dependent on a) site masterplanning and b) policy choices on the use of developer contributions.																				
Site start delay (St Philips)																					N/a
Site start delay (Rest of City Centre)																					N/a
	An extra year of site start delay has been added to St Phillips to represent the additional site assembly complexities. A comprehensive redevelopment site will be necessary if values consistent with successful development are to be achieved. The shorter delay on the city centre sites reflects an incremental approach to the release of individual sites.																				
Other barriers																					N/a
	Not applicable																				
a) Whole PKDS RSS(PC) compliant trajectory (2006-26; 5 yearly)	11,511	2,913				3,415				2,792				2,392							
b) Whole PKDS RSS(PC) compliant trajectory (annual run rate)	11,511	583	583	583	583	583	683	683	683	683	683	558	558	558	558	558	478	478	478	478	478
c) In scope: target units to come, 2009-26, uncommitted	4,250				250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
d) In scope: RTP indicative delivery trajectory 2009-26	1,716				-	-	-	-				156	156	156	156	156	156	156	156	156	156
e) Out scope: 2006-9 Dwellings completed	1,087	384	703																		
f) Out scope: dwellings with planning consent as of 2009 (with UA-provided delivery assumption)	6,150	-	-	561	764	769	397	490	702	708	717	538	504								
g) RSS(PC) projected delivery 2006-26 - RTP indicative trajectory plus built units 06-09 plus UA provided trajectory for committed units	8,953	384	703	561	764	769	397	490	702	708	873	694	660	156	156	156	156	156	156	156	156
Trajectory notes	Uncommitted housing assumed 3 per week for city centre. Note that the delivery trajectory of units with planning consent in line f) has been provided to us by the UA. We have not independently analysed it. Recall that this study concentrates on "in-scope" development within PKDS boundaries.																				

YEAR	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025/26	Viability - impact on abnormal costs
FUNDING TIME BLOCKS	2006/11-					2011-16					2016-21					2021-26					
South Bristol																					
Housing viability: Hengrove Park	Suburban Medium Value/Medium Abnormals										N/a										
Housing viability: Knowle West	Suburban Medium Value/High Abnormals										N/a										
Housing viability: Remaining South Bristol	Suburban Medium Value/Medium Abnormals										N/a										
Values currently relatively low in South Bristol, although this may change in the future as development and infrastructure improves. Knowle West assumed to have higher abnormal costs. In line with our stated assumptions, we have assumed nil social housing grant. Indicative high level viability analysis (see important information on the methodology in Section 5 of main report) shows Hengrove Park and Remaining South Bristol sites have a theoretical development surplus of c.-£5,000 per unit and Knowle West c.-£15,000 per unit in full recovery on basis of assumptions made.																					
Gas	Low																				
No showstoppers. Local connection costs borne by developers along with some network strengthening costs. Impact on housing viability: low, as there are unlikely to be significant additional developer costs																					
Electricity	Low																				
The Whitchurch 33/11kV sub-station will be used for Hengrove Park, which has some capacity but will need to be reinforced after early development or if the SE of Bristol urban extension uses the capacity (PKDS 3). Bishopsworth 33/11kV substation also serves south Bristol and has spare capacity. Impact on housing viability: low, as although there will be some costs, these will not affect the overall viability and will take place after initial development. Development after 2016 with caution as new capacity may be used elsewhere.																					
Water	Low																				
There may need to be new leading mains but these are 'normal' costs if spread across the development units (taking into account the size of the site). Impact on housing viability: low, as there are unlikely to be significant additional developer costs																					
Sewage	Medium																				
Area will drain to the Southern Foul sewer. Downstream infrastructure is required to support development. Costs likely to be 'several £million', with developers expected to pay. Impact on housing viability: medium as there will be additional significant additional developer costs and these may have to take place early in the development																					
Telecommunications	Low																				
Infrastructure for growth will be delivered through private sector development. Impact on housing viability: low, as there are unlikely to be significant additional developer costs																					
Flood protection	Low																				
No significant flood issues although run off into the Avon and potential run-off implications for Bristol City Centre & St Philips. Will require SUDS plus maybe some outfall improvements, de-culverting and channel improvements to deal with the high level of debris. Impact on housing viability: low, as there are unlikely to be significant additional developer costs																					
Acute healthcare	No information is available regarding acute health.																				
Transport	N/a																				
Priority Items not completed until 2016 including South Bristol Link P1&2. Orbital BRT suggested by URS could not be completed until 2021 earliest due to existing RFA funding being committed.																					
Education	N/a																				
Existing surplus capacity means that new growth can be accommodated possibly upto 2018, though plans in place to reduce capacity - hence goes amber after 2018.																					
Parks and open space	N/a																				
Infrastructure delivery dependent on a) site masterplanning and b) policy choices on the use of developer contributions.																					
Site start delay (Hengrove Park)	N/a																				
Site start delay (Knowle West)	N/a																				
Site start delay (remaining South Bristol)	N/a																				
Although in some instances development can be pursued incrementally in the South Bristol PKDS, so shortening site delays, these are likely to be highly complex sites with right-to-buy tenants and decanting issues to deal with in some instances. We have allowed a four year delay from the end of 2009. This may in some instances prove optimistic. Hengrove has no current masterplan or strategic overview. One will need to be developed.																					
Other barriers	N/a																				
Not applicable																					
a) Whole PKDS RSS(PC) compliant trajectory (2006-26; 5 yearly)	11,603	2,146					3,219					2,928					3,310				
b) Whole PKDS RSS(PC) compliant trajectory (annual run rate)	11,603	429	429	429	429	429	644	644	644	644	644	586	586	586	586	586	662	662	662	662	662
c) In scope: target units to come, 2009-26, uncommitted	7,758				456	456	456	456	456	456	456	456	456	456	456	456	456	456	456	456	456
d) In scope: RTP indicative delivery trajectory 2009-26	3,120				-	-	-	-	-	-	-	312	312	312	312	312	312	312	312	312	312
e) Out scope: 2006-9 Dwellings completed	1,282	596	686																		
f) Out scope: dwellings with planning consent as of 2009 (with UA-provided delivery assumption)	2,563	-	-	379	183	218	683	629	86	94	94	95	102	-	-	-	-	-	-	-	-
g) RSS(PC) projected delivery 2006-26 - RTP indicative trajectory plus built units 06-09 plus UA provided trajectory for committed units	6,965	596	686	379	183	218	683	629	86	94	94	407	414	312	312	312	312	312	312	312	312
Trajectory notes	Whilst Hengrove Park is a potentially straightforward site, other areas such as Knowle West and remaining sites will be complex. This will slow build out rates. A number of units produced will simply replace existing non Decent Homes Standard social stock. Assumed 6 per week net build out at PKDS as whole. Note that the delivery trajectory of units with planning consent in line f) has been provided to us by the UA. We have not independently analysed it. Recall that this study concentrates on "in-scope" development within PKDS boundaries.																				

YEAR	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025/26	Viability - impact on abnormal costs
FUNDING TIME BLOCKS	2006/11-					2011-16					2016-21					2021-26					
North Bristol																					
Housing viability: PRC Sites (Lockleaze, Hengrove, Lawrence Weston, Seamills)	Suburban Medium Value/Medium Abnormals																				N/a
Housing viability: Other sites (Bonnington Walk, City of Bristol College, Blackberry Hill Hospital, Anderson Lees site, St Matthias Rd)	Suburban High Value/Medium Abnormals																				N/a
PRC sites assumed to be in lower value areas of North Bristol. Indicative high level viability analysis (see important information on the methodology in Section 5 of main report) shows PRC sites have a theoretical development surplus of -£5,000 per unit and Other Sites are c.£7,500 per unit in full recovery on basis of assumptions made.																					
Gas																					Low
No showstoppers. Local connection costs borne by developers along with some network strengthening costs. Impact on housing viability: low, as there are unlikely to be significant additional developer costs																					
Electricity																					Low
Served by substations with some capacity (Cribbs Causeway 33/11kV and Filton 33/11kV) and anticipated re-location of industrial users, if it happens, will release capacity. Pylons on Bonnington Walk Allotments site that may need to be buried, although affects c. 50 houses, with little impact on overall housing numbers. Impact on housing viability: low, as there are unlikely to be significant additional developer costs																					
Water																					Low
There may need to be new leading mains but these are 'normal' costs if spread across the development units (taking into account the size of the site). Impact on housing viability: low, as there are unlikely to be significant additional developer costs																					
Sewage																					Low
There is some capacity in this area and further capacity can be created with contributions from developers. Impact on housing viability: low, as there are unlikely to be significant additional developer costs																					
Telecommunications																					Low
Infrastructure for growth will be delivered through private sector development. Impact on housing viability: low, as there are unlikely to be significant additional developer costs																					
Flood protection																					Low
No significant flooding issues, although most of the drainage from this site will travel in the Bristol Frome, which loops through into the floating Harbour via the Avon, with potential impacts on the City Centre/St Philips. Impact on housing viability: low, as there are unlikely to be significant additional developer costs																					
Acute healthcare	No information is available regarding acute health.																				N/a
Transport																					
Managed Motorways critical for development and not completed until 2012. All other schemes not complete until 2017.																					
Education																					N/a
Existing surplus capacity means that new growth can be accommodated possibly upto 2018 but plan in place to reduce capacity.																					
Parks and open space																					N/a
Infrastructure delivery dependent on a) site master planning and b) policy choices on the use of developer contributions.																					
Site start delay (PRC Sites - Lockleaze, Hengrove, Lawrence Weston, Seamills)																					N/a
Site start delay (Other sites)																					N/a
Although in some instances development can be pursued incrementally in the North Bristol PKDS, so shortening site delays, these are likely to be highly complex sites with right-to-buy tenants and decanting issues to deal with in some instances. We have allowed a four year delay from the end of 2009. This may in some instances prove optimistic. We have reduced delay in "other sites" to only 2 years as we understand only viability issues are preventing development.																					
Other barriers																					N/a
Not applicable																					
a) Whole PKDS RSS(PC) compliant trajectory (2006-26; 5 yearly)	11,268	4,563					2,487					2,487					1,730				
b) Whole PKDS RSS(PC) compliant trajectory (annual run rate)	11,268	913	913	913	913	913	497	497	497	497	497	497	497	497	497	346	346	346	346	346	
c) In scope: target units to come, 2009-26, uncommitted	5,308				312	312	312	312	312	312	312	312	312	312	312	312	312	312	312	312	
d) In scope: RTP indicative delivery trajectory 2009-26	4,576									416	416	416	416	416	416	416	416	416	416	416	
e) Out scope: 2006-9 Dwellings completed	2,094	1,072	1,022																		
f) Out scope: dwellings with planning consent as of 2009 (with UA-provided delivery assumption)	3,842	-	-	624	629	594	516	483	210	192	194	195	205	-	-	-	-	-	-	-	
g) RSS(PC) projected delivery 2006-26 - RTP indicative trajectory plus built units 06-09 plus UA provided trajectory for committed units	10,512	1,072	1,022	624	629	594	516	483	210	192	610	611	621	416	416	416	416	416	416	416	
Trajectory notes	Decanting issues and complexity around PRC stock replacement likely to slow build out rates. A number of units will simply replace existing non Decent Homes Standard social stock. Assumed 8 per week net build out at PKDS as whole. Note that the delivery trajectory of units with planning consent in line f) has been provided to us by the UA. We have not independently analysed it. Recall that this study concentrates on "in-scope" development within PKDS boundaries.																				

YEAR	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025/26	Viability - impact on abnormal costs
FUNDING TIME BLOCKS	2006/11-					2011-16					2016-21					2021-26					
Avonmouth																					
Viability																					N/a
	We are not dealing with employment viability in this study. An intelligent view on likely employment build out trajectories would require separate econometric study. This is outside our brief.																				
Gas																					N/a
	No showstoppers. Local connection costs borne by developers along with some network strengthening costs. Note that we are not looking at employment viability, so no assumptions have been made regarding impact on abnormals.																				
Electricity																					N/a
	There are substations (Western Approach 33/11kV and Kingsweston 33/11kV) with capacity that can be reinforced at a later stage if required. Note that we are not looking at employment viability, so no assumptions have been made regarding impact on abnormals.																				
Water																					N/a
	There may need to be new leading mains but these are 'normal' costs if spread across the development units (taking into account the size of the site). Note that we are not looking at employment viability, so no assumptions have been made regarding impact on abnormals.																				
Sewage																					N/a
	Downstream infrastructure required to support investment, with some additional costs likely. There is a substantial STW at Avonmouth, with adequate capacity. Note that we are not looking at employment viability, so no assumptions have been made regarding impact on abnormals.																				
Telecommunications																					N/a
	Infrastructure for growth will be delivered through private sector development. Note that we are not looking at employment viability, so no assumptions have been made regarding impact on abnormals.																				
Flood protection																					N/a
	Very severe flood risk, with the potential for high and fast tidal flooding. The tidal cell is very large, from Aust (old Severn Bridge) to Avonmouth and extends up the Avon. A 2007 Flood Risk Assessment indicated that cost of raising defences to a minimum level could potentially cost around £17m. Raising the defences to provide further protection would cost around £32m. The cost of protection against extreme tidal events would cost in the region of £280m. However the existing 1957 permission allows piecemeal site based solutions that are unsatisfactory. Impact on development viability: high as there are likely to be significant additional developer costs whether on-site or strategic flood solutions are used. Classed as a red, because the EA are likely to be able to successfully object to new development in advance of a flood solution.																				
Acute healthcare	No information is available regarding acute health.																				N/a
Transport																					
	The network is under considerable stress in the area. A new junction on the M49 may be required to bring development in this area forward. There are currently no plans for a new junction. Depending on scale, at present the HA may object to any development but are working pragmatically to accommodate planned growth to 2026. New allocations beyond the current plan period (such as the allocation of currently greenfield sites for employment) would be likely to attract HA opposition.																				
Education																					N/a
	n/a - this is an employment site																				
Parks and open space																					N/a
	n/a - this is an employment site																				
Site start delay																					N/a
	We have assumed planning applications by end 2009. We assume a short site delay given limited consultees. There may be problems related to environmental and health and safety designations, depending on sites coming forward (see below).																				
Other barriers																					N/a
	Area has RAMSAR, Special Protection Area (SPA), Special Area of Conservation (SAC) designations. This has significant implications for a) any coastal flood defence design and b) the development of currently undeveloped greenfield sites which are used for roosting when the tide is in (adjacent to employment sites). Natural England has informally mentioned to planning officers that that roosting sites for birds also be a problem on existing allocated sites – but this would need further study as applications came forward. One scheme might not have great impact but cumulatively would have impact on compliance with environmental regulations. Natural England would need to see an appropriate assessment, which would need to be carried out by Bristol City Council. Health and Safety Executive (HSE) have designated Control of Major Accidents Hazard (COMAH) Zones around some installations. HSE may oppose development if applications for high employment density uses (eg offices) came forward. Assuming applications were received by end 2009 we have assigned a start on site by end 2011 given possible delays re: environmental studies.																				
Trajectory																					
a) Whole PKDS RSS(PC) compliant trajectory (2006-26; 5 yearly)																					
b) Whole PKDS RSS(PC) compliant trajectory (annual run rate)																					
c) In scope: target units to come, 2009-26, uncommitted																					
d) In scope: RTP indicative delivery trajectory 2009-26																					
e) Out scope: 2006-9 Dwellings completed																					
f) Out scope: dwellings with planning consent as of 2009 (with UA-provided delivery assumption)																					
g) RSS(PC) projected delivery 2006-26 - RTP indicative trajectory plus built units 06-09 plus UA provided trajectory for committed units																					
Trajectory notes																					

YEAR FUNDING TIME BLOCKS	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025/26	Viability - impact on abnormal costs
	2006/11-					2011-16					2016-21					2021-26					
Sevenside (South Gloucs)																					
Viability																					N/a
	We are not dealing with employment viability in this study. An intelligent view on likely employment build out trajectories would require separate study. This is outside our brief.																				
Gas																					N/a
	No showstoppers. Local connection costs borne by developers along with some network strengthening costs																				
Electricity																					N/a
	There are substations (Western Approach 33/11kV and Kingsweston 33/11kV) with capacity that can be reinforced at a later stage if required.																				
Water																					N/a
	There may need to be new leading mains but these are 'normal' costs if spread across the development																				
Sewage																					N/a
	Downstream infrastructure required to support investment, with some additional costs likely. There is a substantial STW at Avonmouth, with adequate capacity. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																				
Telecommunications																					N/a
	Infrastructure for growth will be delivered through private sector development																				
Flood protection																					N/a
	Very severe flood risk, with the potential for high and fast tidal flooding. The tidal cell is very large, from Aust (old Severn Bridge) to Avonmouth and extends up the Avon. A 2007 Flood Risk Assessment indicated that cost of raising defences to a minimum level could potentially cost around £17m. Raising the defences to provide further protection would cost around £32m. The cost of protection against extreme tidal events would cost in the region of £280m. Impact on development viability: high as there are likely to be significant additional developer costs whether on-site or strategic flood solutions are used. Rated as amber. This is because large tracts of land at Sevenside are effectively beyond the ability of the EA to control development. This is due to the existence of the 1957 ICI permission. Although in the EA's view development is undesirable, there is no legal barrier to development on these areas of Sevenside due to the flood issue. Thus there is no technical barrier to growth with respect to flood issues in the area covered by the 1957 permission.																				
Acute healthcare	No information is available regarding acute health.																				N/a
Transport																					
	The network is under considerable stress in the area. A new junction on the M49 may be required to bring development in this area forward. Depending on scale, at present the HA may object to any development but are working pragmatically to accommodate planned growth to 2026. New allocations beyond the current plan period (such as the allocation of currently greenfield sites for employment) would be likely to attract HA opposition. There are currently no plans for a new junction. Extant permissions from 1957 mean that the ability of Highways Agency to a) successfully object to growth, or b) require financial contributions to transport improvements, appears to be limited.																				
Education																					N/a
	n/a - this is an employment site																				
Parks and open space																					N/a
	n/a - this is an employment site																				
Site start delay																					N/a
	Marked as green from end 2010 onwards, because planning and masterplanning delays are minimal on significant portions of the site, where delays would simply reflect the construction period. This is because extant consents from 1957 (ICI) mean that sites can be developed without constraints. (In Local Plan policy E2 shows original consent in 1957 of 650ha employment land, of which roughly 50% has been built out. Consequently 325ha of employment land exists with limited planning control). The local authority has more influence on brownfield sites, because the 1957 consent has been discharged, so reapplication needed. In practical terms, land is constrained, but the extant permission means that there is no local authority legal control, mechanisms for managing infrastructure development/funding (eg S106) or dealing with constraints.																				
Other barriers																					N/a
	Area has RAMSAR, Special Protection Area (SPA), Special Area of Conservation (SAC) designations. This has significant implications for a) any coastal flood defence design and b) the development of currently undeveloped greenfield sites which are used for roosting when the tide is in (adjacent to employment sites). Natural England informally mention to planning officers that that roosting sites for birds also be a problem on existing allocated sites – but this would need further study as applications came forward. Natural England would need to see an appropriate assessment, which would need to be carried out by South Glouc Council. Natural England have accepted that at least some build-out of the extant permissions is inevitable and therefore an AA needs to be conducted in order to determine the level of mitigation that would be required if/when build-out occurs. One scheme might not have great impact but cumulatively would have impact on compliance with environmental regulations. Health and Safety Executive (HSE) have designated Control of Major Accidents Hazard (COMAH) Zones around some installations. HSE may oppose development if applications for high employment density uses (eg offices) came forward. Assuming applications were received by end 2009 we have assigned a start on site by end 2011 given possible delays re: environmental studies.																				
a) Whole PKDS RSS(PC) compliant trajectory (2006-26; 5 yearly)																					
b) Whole PKDS RSS(PC) compliant trajectory (annual run rate)																					
c) In scope: target units to come, 2009-26, uncommitted																					
d) In scope: RTP indicative delivery trajectory 2009-26																					
e) Out scope: 2006-9 Dwellings completed																					
f) Out scope: dwellings with planning consent as of 2009 (with UA-provided)																					
g) RSS(PC) projected delivery 2006-26 - RTP indicative trajectory plus built units 06-09 plus UA provided trajectory for committed units																					
Trajectory notes																					

YEAR	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025/26	Viability - impact on abnormal costs
FUNDING TIME BLOCKS	2006/11-					2011-16					2016-21					2021-26					
Weston town centre, urban area, urban ext																					
Housing viability: Weston Town Centre & Urban Area	Urban Low Value/Medium Abnormals																				N/a
Housing viability: Weston Urban Extension-Locking Parklands	Urban Extension Low Value/Medium Abnormals																				N/a
Housing viability: Weston Urban Extension-NW of Locking	Urban Extension Low Value/Medium Abnormals																				N/a
Housing viability: Weston Urban Extension-Airfield	Urban Extension Low Value/Medium Abnormals																				N/a
	<p>Sites unviable in high level analysis due to low residential values. Some straightforward sites in town centres should be viable, but a significant portion of housing no's are expected on sites with potentially high abnormal costs. Locking Parklands has been set to possibly viable because of known HCA involvement. (Clearly, the extent to which viability will prove to be a barrier will depend on policy choice at HCA. But HCA involvement appears relatively advanced).</p> <p>Indicative high level viability analysis (see important information on the methodology in Section 5 of main report) shows Weston town centre has a theoretical development surplus of c.-£55,000 per unit and NW of Locking/Airfield have c.-£25,000 per unit in full recovery on basis of assumptions made.</p>																				
Gas	No showstoppers. Local connection costs borne by developers along with some network strengthening costs. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																				Low
Electricity	Served by a 132/33 kV substation with 3 or 4 MVA capacity – would need to be reinforced to cater for the predicted 20MVA growth. Reinforcement costs would be shared between the developer and WPD. Impact on housing viability: low, as although there will be some costs, they are in the future. Develop with caution after 2015.																				Low
Water	There may need to be new leading mains but these are 'normal' costs if spread across the development units (taking into account the size of the site). Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																				Low
Sewage	Some capacity in the west. Wessex Water has investment planned for the area around Locking and Hutton to provide additional capacity in the period 2015-20. Developers will be expected to contribute to the cost of this infrastructure. Impact on housing viability: low, as there are unlikely to be significant additional developer costs. Early development with caution until new capacity available.																				Low
Telecommunications	Infrastructure for growth will be delivered through private sector development. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																				Low
Flood protection	Recent and current tidal and run off flood defences developed as part of the Weston Vision are addressing flood risks. These include sea wall, attenuation lake and SUDS. Paid for by developers, North Somerset Council and EA. Estimate by Council at £10m. Impact on housing viability: medium as there are likely to be significant additional developer flood risk costs and these will likely be at an early stage of development. However, this can be split across high levels of growth. Develop with caution as may require significant flood risk management																				Medium
Acute healthcare	No information is available regarding acute health.																				N/a
Transport	Significantly different issues across the PKDS. Priority Items not completed until 2021, high dependence on improvements to M5 J21, improvements to J21 to cater for historic deficit (and enable capacity for growth) will provide stop gap for bypass but would be better to bring larger scheme forward in time.																				N/a
Education	Development here will be linked to BSF proposals, and emerging thinking indicates there is scope to expand Broad Oak secondary in the short term, hence we are taking an optimistic approach in the early stages to suggest development could proceed. This could be followed by possible re-modelling of Wyvern in the town centre to an Academy in the medium term and eventually there is a need for a new secondary school.																				N/a
Parks and open space	Infrastructure delivery dependent on a) site masterplanning and b) policy choices on the use of developer contributions.																				N/a
Site start delay (Weston Town Centre & Urban Area)	The town centre sites can proceed incrementally. We have assumed a two year delay. Locking Parklands is already under HCA ownership and being developed. Due to the progress of work (enquiry by design work with community is already underway) we have assumed a two year delay from start 2009. For NW of Locking a consortium is being put together. We assume a 4 year delay from end 2009. For Airfield, land ownership is straightforward (under control of Persimmon) but no planning application is expected until 2010 at earliest. We assume four year site delay from 2010.																				N/a
Site start delay (Weston Urban Extension-Locking Parklands)																					N/a
Site start delay (Weston Urban Extension-NW of Locking)																					N/a
Site start delay (Weston Urban Extension-Airfield)																					N/a
Other barriers	Not applicable																				N/a
a) Whole PKDS RSS(PC) compliant trajectory (2006-26; 5 yearly)	12,000	1,877					2,423									3,917					3,783
b) Whole PKDS RSS(PC) compliant trajectory (annual run rate)	12,000	375	375	375	375	375	485	485	485	485	485	783	783	783	783	783	757	757	757	757	757
c) In scope: target units to come, 2009-26, uncommitted	9,481					558	558	558	558	558	558	558	558	558	558	558	558	558	558	558	558
d) In scope: RTP indicative delivery trajectory 2009-26	1,040	-	-	-	-	-	-	-	-	-	-	104	104	104	104	104	104	104	104	104	104
e) Out scope: 2006-9 Dwellings completed	1,792	597	597	597																	
f) Out scope: dwellings with planning consent as of 2009 (with UA-provided delivery assumption)	727				145	145	145	146	146												
g) RSS(PC) projected delivery 2006-26 - RTP indicative trajectory plus built units 06-09 plus UA provided trajectory for committed units	3,559	597	597	597	145	145	145	146	146	-	-	104	104	104	104	104	104	104	104	104	104
Trajectory notes	Build rates assume 2 units per week for Locking Parklands. Note that the delivery trajectory of units with planning consent in line f) has been provided to us by the UA. We have not independently analysed it. Recall that this study concentrates on "in-scope" development within PKDS boundaries.																				

YEAR	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025/26	Viability - impact on abnormal costs
FUNDING TIME BLOCKS	2006/11-					2011-16					2016-21					2021-26					
South West of Bristol UE (North Somerset)																					
Viability	<p>Indicative high level viability analysis (see important information on the methodology in Section 5 of main report) shows SW Bristol UE has a theoretical development surplus of c.£10,000 per unit in full recovery on basis of assumptions made.</p>																				N/a
Gas	<p>No showstoppers. Local connection costs borne by developers along with some network strengthening costs. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.</p>																				Low
Electricity	<p>Served by three substations – Bedminster 33/11kV, Bishopsworth 33/11kV and Bower Ashton 33/11kV. Will need some limited reinforcement. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.</p>																				Low
Water	<p>There may need to be new leading mains but these are 'normal' costs if spread across the development units (taking into account the size of the site). This PKDS may need to pay for embankment strengthening for Barrow Tanks and the costs for this may be significant. Some of the PKDS may be undevelopable because of dam break risks and the protected route of the large diameter water main. Impact on housing viability: medium as there may be significant additional developer costs at an early stage to address the reservoir reinforcement, unless development can be accommodated elsewhere on the site first. Develop with caution as there is uncertainty about the extent or costs of measures for reservoir strengthening.</p>																				Medium
Sewage	<p>Area would drain to the Southern Foul sewer. There is limited capacity and significant development would trigger the need for major off-site sewerage. Wessex Water is currently appraising requirements but very provisionally costs are expected to be in the order of 'several £million'. Developers would be expected to pay. Impact on housing viability: medium as there are likely to be significant additional developer costs although these will be incurred later in the development. After early development, caution required until new capacity costed and provided.</p>																				Medium
Telecommunications	<p>Infrastructure for growth will be delivered through private sector development. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.</p>																				Low
Flood protection	<p>Location drains to a tide-locked Avon, currently served by an old conduit that is at capacity and will not cope with new demand. Likely to include a new trash screen and new tidal outfall in the Bristol City Council area. There are no EA plans to address this as with maintenance the old scheme will serve existing development. Very early indicative estimates suggest cost may be up to £10m, which will need to be met as part of the developer costs. Impact on housing viability: high as there are significant additional developer costs at an early stage. Caution required until new facilities provided - estimated post 2020</p>																				Medium
Acute healthcare	<p>No information is available regarding acute health.</p>																				N/a
Transport	<p>Priority Items not completed until opening year 2016. Critical requirement for South Bristol Link Phases 1&2. Substantial orbital movement will not be catered for sustainably unless provision is made. Realistically an Orbital BRT route (suggested by URS) could not be implemented until 2021 at the earliest due to RFA funding constraints.</p>																				N/a
Education	<p>Cautious potential to proceed depending on impact of Bristol, because St Katherine's school has some 80% of its catchment from Bristol at present. This could change if Bristol stems out migration, then the suggestion is to move the school into the proposed new UE.</p>																				N/a
Parks and open space	<p>Infrastructure delivery dependent on a) site masterplanning and b) policy choices on the use of developer contributions.</p>																				N/a
Site start delay	<p>A planning application has been received. Land is under the control of Landtrust Developments. Pre-application discussions have taken place between the UA and the developers.</p>																				N/a
Other barriers	<p>Not applicable</p>																				N/a
a) Whole PKDS RSS(PC) compliant trajectory (2006-26; 5 yearly)	9,000	-	-	-	-	1,300	-	-	-	-	3,850	-	-	-	-	3,850	-	-	-	-	-
b) Whole PKDS RSS(PC) compliant trajectory (annual run rate)	9,000	-	-	-	-	260	260	260	260	260	770	770	770	770	770	770	770	770	770	770	770
c) In scope: target units to come, 2009-26, uncommitted	9,000	-	-	-	-	260	260	260	260	260	770	770	770	770	770	770	770	770	770	770	770
d) In scope: RTP indicative delivery trajectory 2009-26	3,640	-	-	-	-	-	-	-	-	-	364	364	364	364	364	364	364	364	364	364	364
e) Out scope: 2006-9 Dwellings completed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
f) Out scope: dwellings with planning consent as of 2009 (with UA-provided delivery assumption)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
g) RSS(PC) projected delivery 2006-26 - RTP indicative trajectory plus built units 06-09 plus UA provided trajectory for committed units	3,640	-	-	-	-	-	-	-	-	-	364	364	364	364	364	364	364	364	364	364	364
Trajectory notes	Assumed 7 per week build out on NS site and 1 per week on Bristol site (over UA border, see below).																				
a) Whole PKDS RSS(PC) compliant trajectory (2006-26; 5 yearly)	494	-	-	-	-	71	-	-	-	-	211	-	-	-	-	211	-	-	-	-	-
b) Whole PKDS RSS(PC) compliant trajectory (annual run rate)	494	-	-	-	-	14	14	14	14	14	42	42	42	42	42	42	42	42	42	42	42
c) In scope: target units to come, 2009-26, uncommitted	494	-	-	-	-	14	14	14	14	14	42	42	42	42	42	42	42	42	42	42	42
d) In scope: RTP indicative delivery trajectory 2009-26	520	-	-	-	-	-	-	-	-	-	52	52	52	52	52	52	52	52	52	52	52
e) Out scope: 2006-9 Dwellings completed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
f) Out scope: dwellings with planning consent as of 2009 (with UA-provided delivery assumption)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
g) RSS(PC) projected delivery 2006-26 - RTP indicative trajectory plus built units 06-09 plus UA provided trajectory for committed units	520	-	-	-	-	-	-	-	-	-	52	52	52	52	52	52	52	52	52	52	52
Trajectory notes	RSS trajectory based on NS part of this UE. Assumed 1 per week build out at on Bristol site and 7 on NS site above.																				

YEAR	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025/26	Viability - impact on abnormal costs	
FUNDING TIME BLOCKS	2006/11-					2011-16					2016-21					2021-26						
North Fringe of Bristol																						
Housing viability: Cribbs Causeway	Urban Extension Medium Value/Low Abnormality																				N/a	
Housing viability: West of M32 area of search	Urban Extension Medium Value/Medium Abnormality																				N/a	
Housing viability: Rest of North Fringe	Urban Extension Medium Value/Medium Abnormality																				N/a	
Indicative high level viability analysis (see important information on the methodology in Section 5 of main report) shows Cribbs Causeway has a theoretical development surplus of c.£12,500 per unit, and West of M32/Rest of North Fringe are c.£1,000 per unit in full recovery on basis of assumptions made.																						
Gas																					Low	
No showstoppers. Local connection costs borne by developers along with some network strengthening costs. Impact on housing viability: low, as there are unlikely to be significant additional developer costs. M32 site is traversed by HP gas pipeline, which cannot be built on, although could be used for road/open space. Will cost up to £3m to re-route (if required).																						
Electricity																					Medium	
Includes three substations (Almondsbury 33/11kV, Bradley Stoke 33/11kV and Cribbs Causeway 33/11kV substations) and the Bradley Stoke 132/33kV Bulk Supply Point (BSP). Much of the 33kV to 11kV infrastructure is at capacity (or has new load coming on in the next few years which will use the capacity) and therefore there may be a need for a new primary substation specifically to serve this development. There is the opportunity to use some of the capacity that would otherwise serve North Bristol (PKDS 7) which would serve some of the existing development before the new infrastructure is required. The market view is that cables running across the M32 site will need to be run underground. This will cost at least £20m. Approximately 50% of the houses may be built before cables need to be moved. Impact on housing viability: medium as there are likely to be significant additional developer costs from running cable underground on M32 site although some development may be possible before costs need to be incurred. Amber reflects the uncertainty about re-routing pylons and the likely new substation.																						
Water																					Low	
There may need to be new leading mains but these are 'normal' costs if spread across the development units (taking into account the size of the site). Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																						
Sewage																					Low	
There are links between the infrastructure serving this PKDS and PKDS 12. The area around the M32 is served by the Frome Valley Sewer (FVS) and the area around Cribbs is served by the Frome Valley Relief Sewer (FVRS). In order to facilitate growth, the flows from Yate will need to be intercepted and redirected to the FVRS which will create the capacity in the FVS for growth in the M32 area. This will require developer contributions. We have assumed that SGC will use a robust S106 strategy to spread cost across all development utilising this infrastructure. Impact on housing viability: low, so long as the costs of the infrastructure are shared across the development. Some development may take place with local reinforcement. Develop with caution as capacity may be used for development elsewhere and it may require complex funding linkages between developments.																						
Telecommunications																					Low	
Infrastructure for growth will be delivered through private sector development. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																						
Flood protection																					Low	
As per the North Bristol PKDS (7) - no significant flooding issues. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																						
Acute healthcare	No information is available regarding acute health.																				N/a	
Transport																						
Managed Motorways not completed until 2012. Priority Items not Complete until 2021 although main PT completed by 2016. Existing capacity must be released to allow for increased transport demand from development. Stoke Gifford link would go some way to providing this capacity.																						
Education																					N/a	
There is some surplus capacity that could possibly serve short term phasing or possibly through expansion of existing provision.																						
Parks and open space																					N/a	
Infrastructure delivery dependent on a) site masterplanning and b) policy choices on the use of developer contributions.																						
Site start delay (Cribbs)																					N/a	
Site start delay (West of M32 area of search)																					N/a	
Site start delay (Rest of North Fringe)																					N/a	
For Cribbs Causeway, a planning application is expected as soon as the RSS is announced. Land is under the control of developers. For M32, one area has an outline consent subject to a S106 agreement (site 13 on local plan). Crest Nicholson is the potential developer. In both instances we assume site delay of four years from end 2009. For rest of North Fringe we assume incremental development with a shorter site delay of two years.																						
Other barriers																					N/a	
Not applicable																						
a) Whole PKDS RSS(PC) compliant trajectory (2006-26; 5 yearly)	11,800	2,578					6,483					1,988					751					
b) Whole PKDS RSS(PC) compliant trajectory (annual run rate)	11,800	516	516	516	516	516	1,297	1,297	1,297	1,297	1,297	398	398	398	398	398	150	150	150	150	150	
c) In scope: target units to come, 2009-26, uncommitted	7,704				453	453	453	453	453	453	453	453	453	453	453	453	453	453	453	453	453	
d) In scope: RTP indicative delivery trajectory 2009-26	4,160											416	416	416	416	416	416	416	416	416	416	
e) Out scope: 2006-9 Dwellings completed	756	252	252	252																		
f) Out scope: dwellings with planning consent as of 2009 (with UA-provided delivery assumption)	3,340	-	-	-	50	163	352	456	426	358	333	283	283	283	283	70	-	-	-	-	-	
g) RSS(PC) projected delivery 2006-26 - RTP indicative trajectory plus built units 06-09 plus UA provided trajectory for committed units	8,256	252	252	252	50	163	352	456	426	358	333	699	699	699	699	486	416	416	416	416	416	
Trajectory notes	Assumed max 8 per week build out at PKDS level once red traffic light constraints addressed. Note that the delivery trajectory of units with planning consent in line f) has been provided to us by the UA. The numbers in f) made up of Wallscourt Farm, Northfield plus remainder of unlisted smaller sites which are committed but are as yet unbuilt. We have not independently analysed it. Recall that this study concentrates on "in-scope" development within PKDS boundaries.																					

YEAR	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025/26	Viability - impact on abnormal costs
FUNDING TIME BLOCKS	2006/11-					2011-16					2016-21					2021-26					
Yate Urban Extension																					
Housing viability: Yate Urban Extension																					N/a
	Indicative high level viability analysis (see important information on the methodology in Section 5 of main report) shows Yate Urban Extension has a theoretical development surplus of c.£22,500 per unit in full recovery on basis of assumptions made.																				
Gas																					Low
	No showstoppers. Local connection costs borne by developers along with some network strengthening costs. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																				
Electricity																					Low
	Demand can be accommodated through existing capacity. No showstoppers. Likely low impact on housing viability																				
Water																					Low
	There may need to be new leading mains but these are 'normal' costs if spread across the development units (taking into account the size of the site). Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																				
Sewage																					Low
	Development at this site beyond around 500 houses would be expected to trigger the need for major improvements to downstream trunk sewerage. This will also serve part of PKDS 11 and part of PKDS 13. Wessex Water envisage this investment would occur in the period 2010-15 and developers would be expected to make a substantial contribution to this investment. The 500 house limit will be kept under review by Wessex Water in the light of performance of the company's £2m upgrade of the existing Frome Valley sewerage system, currently under construction, at Frampton Cotterell. We have assumed that SGC will use a robust S106 strategy to spread cost across all development utilising this infrastructure. Impact on housing viability: low as although there are likely to be significant additional developer costs, these will be spread over development here and in PKDSs 11 and 13, and will be after some of the development has taken place. Development with caution until new capacity available.																				
Telecommunications																					Low
	Infrastructure for growth will be delivered through private sector development. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																				
Flood protection																					Low
	Most of the location is at the head of the Bristol Frome system and flow from the area is regulated by an existing dam at Tubs Bottom which regulates peak flows. The rest of the location drains downstream of this dam but through naturally flooding agricultural land. Development will require some funding for local pinch points as part of S106. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																				
Acute healthcare	No information is available regarding acute health.																				N/a
Transport																					
	Priority Items particularly Greater Bristol Metro Project not completed until 2021. Sufficient infrastructure has not been identified for this location. This is aggravated by there being no specific development sites identified. Upgraded sustainable linkages to locations throughout Bristol are considered a must. Uncertainty over funding for Yate Turnback: likely to be required to enable Greater Bristol Metro Project.																				
Education																					N/a
	There is some surplus capacity that could possibly serve short term phasing or possibly through expansion of existing provision.																				
Parks and open space																					N/a
	Infrastructure delivery dependent on a) site masterplanning and b) policy choices on the use of developer contributions.																				
Site start delay: (Yate Urban Area)																					N/a
Site start delay: (Yate Urban Extension)																					N/a
	For Yate urban area, we assume prompt submission of planning application. Heron has had options on the land for approximately 20 years and there is a clear understanding between the developers and landowners. There has been a long term intention for the extension of northern area of Yate, with road infrastructure connections already planned in. This is a small site so we have assumed a 2 year delay from end 2009.																				
Other barriers																					N/a
	Not applicable																				
a) Whole PKDS RSS(PC) compliant trajectory (2006-26; 5 yearly)	3,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,500	1,500	1,500	1,500	1,500	
b) Whole PKDS RSS(PC) compliant trajectory (annual run rate)	3,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	300	300	300	300	300	300
c) In scope: target units to come, 2009-26, uncommitted	3,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	300	300	300	300	300	300
d) In scope: RTP indicative delivery trajectory 2009-26	2,080	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	416	416
e) Out scope: 2006-9 Dwellings completed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
f) Out scope: dwellings with planning consent as of 2009 (with UA-provided delivery assumption)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
g) RSS(PC) projected delivery 2006-26 - RTP indicative trajectory plus built units 06-09 plus UA provided trajectory for committed units	2,080	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	416	416
Trajectory notes	Assumed 8 per week build out at PKDS level																				

YEAR	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025/26	Viability - impact on abnormal costs
FUNDING TIME BLOCKS	2006/11-					2011-16					2016-21					2021-26					
East Fringe of Bristol (incl. Emersons Green)																					
Housing viability: Emersons Green	Urban Extension High Value/Low Abnormals																				N/a
Housing viability: East of Kingswood	Urban Extension High Value/Low Abnormals																				N/a
Housing viability: Other East Fringe of Bristol	Urban Extension High Value/Medium Abnormals																				N/a
Indicative high level viability analysis (see important information on the methodology in Section 5 of main report) shows Emersons Green and East of Kingswood have a theoretical development surplus of c.£22,500 per unit, and Other East Fringe c.£10,000 per unit in full recovery on basis of assumptions made.																					
Gas																					Low
No showstoppers. Local connection costs borne by developers along with some network strengthening costs. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																					
Electricity																					Low
This PKDS is split between WPD and Central Networks along the route of the A4174. WPD area is covered by two 33/11kV substations but both are close to capacity. Up to 5,000 houses could be built but network would need reinforcement after that, funded through developer contributions. Central Networks have also indicated that development will require new infrastructure funded through developer contributions, although a limited amount of development can take place within existing capacity. Impact on housing viability: low, as there are unlikely to be significant additional developer costs. Development with caution in the longer term as capacity is used.																					
Water																					Low
There may need to be new leading mains but these are 'normal' costs if spread across the development units (taking into account the size of the site). Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																					
Sewage																					Low
Location will drain south towards Willsbridge, and then via trunk sewers to Avonmouth STW. The scale of proposed development will require a new spur to take sewerage to Avonmouth (or possibly a new/enlarged STW for Salford/Keynsham). This investment is not in Wessex Water's programme for 2010-15. The capacity increase could be linked to the major trunk sewerage improvements (Frome Valley and Frome Valley Relief Sewers) triggered through development at PKDS 12 – see above. We have assumed that SGC will use a robust S106 strategy to spread cost across all development utilising this infrastructure. Impact on housing viability: low, as although the investment is significant, it will be spread over development on 3 PKDSs and so there are unlikely to be significant additional developer costs. Develop with caution until new capacity planned and provided.																					
Telecommunications																					Low
Infrastructure for growth will be delivered through private sector development. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																					
Flood protection																					Low
Recent development has put in developer attenuation. The northern part of the site drains to the Frome so regulation here will help PKDS 5. The southern part of the site rains into the Avon and so regulation here will help PKDS 2. Works will be SUDS. Impact on housing viability: low, as there are unlikely to be significant additional developer costs.																					
Acute healthcare	No information is available regarding acute health.																				N/a
Transport																					
No substantial infrastructure is completed before 2021. M4 link unlikely to be permitted by HA but URS analysis suggests not required, (GBSTS recommends scheme not adopted). Infrastructure requirements not identified, aggravated by lack of spatial planning. URS anticipate substantial development pressure on A4174 corridor which will need remediation. Orbital BRT suggested by URS as part of this. Emerson's Green is relatively well advanced and this judgement applies predominantly to the Area of Search east of Kingswood. URS suggest A420 route treatment into Bristol to facilitate this PKDS.																					
Education																					N/a
There is some capacity and also impact of cross border movements with Bristol could change over the years.																					
Parks and open space																					N/a
Infrastructure delivery dependent on a) site masterplanning and b) policy choices on the use of developer contributions.																					
Site start delay (Emersons Green)																					N/a
Site start delay (East of Kingswood)																					N/a
Site start delay (Other East Fringe of Bristol)																					N/a
Developer interest has been expressed in the area East of Kingswood based on the emerging RSS. A planning application is expected on part of the site. However there are significant transport infrastructure constraints to overcome and the UA wishes to avoid piecemeal sub-optimal development. No forward planning work has been undertaken, given these constraints.																					
Other barriers																					N/a
Not applicable																					
a) Whole PKDS RSS(PC) compliant trajectory (2006-26: 5 yearly)	15,700	2,401				3,813					5,047					4,438					
b) Whole PKDS RSS(PC) compliant trajectory (annual run rate)	15,700	480	480	480	480	480	763	763	763	763	763	1,009	1,009	1,009	1,009	1,009	888	888	888	888	888
c) In scope: target units to come, 2009-26, uncommitted	13,202				777	777	777	777	777	777	777	777	777	777	777	777	777	777	777	777	777
d) In scope: RTP indicative delivery trajectory 2009-26	2,080																416	416	416	416	416
e) Out scope: 2006-9 Dwellings completed	1,580	527	527	527																	
f) Out scope: dwellings with planning consent as of 2009 (with UA-provided delivery assumption)	918					90	92	92	92	92	92	92	92	92	92						
g) RSS(PC) projected delivery 2006-26 - RTP indicative trajectory plus built units 06-09 plus UA provided trajectory for committed units	4,578	527	527	527	-	90	92	92	92	92	92	92	92	92	92		416	416	416	416	416
Trajectory notes	Assumed 8 per week build out at PKDS level. Note that the delivery trajectory of units with planning consent in line f) has been provided to us by the UA. We have not independently analysed it. Recall that this study concentrates on "in-scope" development within PKDS boundaries.																				

12 WHAT ARE THE IMPLICATIONS OF THE BARRIERS FOR HOUSING DEVELOPMENT TRAJECTORIES?

Introduction

- 12.1 The traffic light tables provided above are useful in exploring how “real world” barriers will affect the actual delivery of planned growth (as defined by RSS Proposed Changes) to 2026.
- 12.2 In this section, we examine the implications of our findings in the traffic light tables for housing trajectories.
- 12.3 Employment growth is outside our scope in this section. Whilst previous sections have looked at the costs, funding and delivery growth barriers for both employment and housing components of the PKDS, this section now concentrates on housing trajectories. This is because an intelligent view on likely employment build out trajectories for the West of England area would require separate detailed study. This is outside our brief.

We have used the traffic lights analysis to draw conclusions about “real world” housing development trajectories

We have identified the build out start date on the traffic light chart with a vertical blue dotted line

- 12.4 We have used the traffic light analysis discussed above to draw conclusions about the issues on the “critical path” for development. The issues on the critical path are those which directly impact the planned project completion date. In project management terminology, they have no “float”.
- 12.5 A red bar on an issue stops delivery, whilst amber and green sees it continue. A blue dotted line picks up the earliest point that development could start (which is at the point when the last “red” issue is resolved).
- 12.6 Build out is assumed to start at the point in time after the blue dotted line. In some instances there is more than one blue dotted line on each traffic light chart. This is to reflect the fact that in some instances we have divided each PKDS into sub-areas which have distinctive issues.
- 12.7 The blue dotted line extends down to the housing trajectory build out tables. This is intended to give a quick visual representation of how the issues at PKDS level are likely to affect housing trajectory.

What the housing phasing numbers at the foot of the traffic lights tables show

- 12.8 At the foot of the PKDS traffic lights tables there are seven rows of housing trajectory data. Where PKDS straddle UA boundaries, we have provided one set of tables per PKDS.
- 12.9 We explain the numbers in each row below.

Table 12.1 Housing phasing tables

<p>a) Whole PKDS RSS(PC) compliant trajectory (2006-26; 5 yearly)</p>	<p>These numbers are based on RSS Proposed Changes and are sourced from the MAA version 3.⁷⁶ They represent the total number of housing units, together with phasing in five year blocks.</p> <p>These numbers start in 2006. They cover target growth within the PKDS area to 2026.</p> <p>In a small number of instances the number quoted here varies from the published RSS total for the area. This is often because areas of search have been adjusted since the publication of RSS, meaning that numbers of units to be found within the PKDS have changed. We have assumed that the numbers for each UA remain compliant with the overall RSS and that any dwelling number shortfall will be made good by an increase in housing to be found within the same authority but outside the PKDS.</p> <p>As we state in detail in section 1, this study does not look at delivering infrastructure or assessing barriers for all these housing numbers. Instead, we look at a subsection of this growth covered in the “In Scope...” line in c) below.</p> <p>These numbers have been included in this table in order to show how the barriers identified affect the ability of the West of England to deliver its RSS targets.</p>
<p>b) Whole PKDS RSS(PC) compliant trajectory (annual run rate)</p>	<p>These numbers represent the above five-year totals, with housing numbers in each five year block divided by five to find a simple per annum housing run rate.</p>
<p>c) In scope: target units to come, 2009-26, uncommitted</p>	<p>These housing units are the units that are within the scope of our study. They are the uncommitted units that remain to be built from the time of writing until the end of the plan period which do not yet have planning consent.</p> <p>We look at infrastructure requirements, costs and funding of these units, and the barriers to their development.</p>
<p>d) In scope: RTP indicative delivery trajectory 2009-26</p>	<p>This number provides our best estimate of real world housing delivery at each PKDS. It is based on the “in scope” total shown in the line above but then reflects the results of our analysis in the traffic light table above, and takes account of a) the barriers to growth discussed in the traffic light tables, and b)</p>

⁷⁶ Draft version 5 of the MAA for the West of England 29th April 2009 version (34). These indicative housing and job numbers are based on the Secretary of State’s Proposed Changes to the Regional Spatial Strategy. The West of England authorities state that they are providing for substantial growth but are challenging the increases in the ‘Proposed Changes’ and their deliverability.

	likely build out rates.
e) Out scope: 2006-9 Dwellings completed	<p>We have not included these housing units in our study. We assume that, because these houses are already built, their infrastructure requirements are taken care of. Because they already exist, barriers have obviously been overcome.</p> <p>These units are included in order to bring greater transparency to the make-up of the numbers. These numbers are included in the global totals covered in lines a) and b) above.</p>
f) Out scope: dwellings with planning consent as of 2009 (with UA-provided delivery assumption)	<p>This number reflects the dwellings in a) above have been granted planning permission but have not been built at the time of study.</p> <p>We have not included these housing units in our study. They are out of our scope. We assume that, because these houses have planning consent, their infrastructure requirements are taken care of.</p> <p>These numbers are included in this table because they matter to the analysis of whether PKDS will be successful in reaching RSS housing targets. Much of this success depends on the assumed rate of build out of these units.</p> <p>Important caveats apply here. It is important to state that we have not studied this rate of build out independently. Instead we have asked UAs to give some indication of the assumptions we should use here.</p> <p>Note that these numbers are included in the global totals covered in lines a) and b) above.</p>
g) RSS(PC) projected delivery 2006-26 - RTP indicative trajectory plus built units 06-09 plus UA provided trajectory for committed units	<p>This number is intended to show how well the site is likely to deliver against RSS targets over the period 2006-26. It brings together the RTP indicative trajectory (covering 2009-26) with the already committed and already built units.</p> <p>It is subject to the caveats mentioned above - that there are elements of these numbers and build out rates that we not independently examined because they fall outside the scope of this study.</p>

The principles we've used in re-phasing the housing trajectory

- 12.10 Our approach to re-phasing the PKDS housing trajectory needs careful explanation.
- We are focusing on development deliverability (showing which developments could happen) and leave others to make judgements about development desirability (about which developments should happen)*

- 12.11 Good planning objectives must be

- desirable - and so describe what we want to see happen, such as sustainable development; and
- deliverable - and so reflect what can be done in the real world.

- 12.12 Many planning objectives deal with the first of these in detail. They describe the desirable features of new development. These include preferences to see
- brownfield development prioritised over greenfield development
 - development in socially deprived areas prioritised over development in wealthier areas
 - more sustainable locations (in, for example, likely transport patterns) prioritised over less sustainable locations

- 12.13 Whilst planning objectives set out in strategy often talk in detail of what is desirable, they have until recently often avoided mention of what is deliverable. They can ignore the fact that planning policy does not directly deliver housing and employment space. At best, it allows market forces to do the generating. Given that free market forces require a profit in order to stimulate activity, feasibility generally requires developments to be financially viable.

- 12.14 Our study seeks to understand what development *could* happen. It does not seek to make judgements about what *should* happen. For example, there is no weight given in this process to matters of environmental sustainability: it is likely, for example, that developing inner area sites first - or sites which would be more reliant on public transport - would have a smaller carbon footprint. Equally, there is no account made of the matters of social equity.

This report is not transferrable to policy

- 12.15 Because of the limitations mentioned above, we caution that our findings are not straightforwardly transferable to policy. Any good planning system will want to take a rounded view on matters such as social inclusion, sustainability, place shaping and so on. We have only left these considerations out of this report because these judgements are essentially political. Because we are neither elected, nor work directly for elected officials, we have unable to properly weight important preferences that are expressed through the planning system. Any attempt on our part to do so would cloud the analysis.

- 12.16 A recent CPRE report has stated that "the pursuit of affordability targets through the incorporation of market information into planning decisions, although presented as a technical exercise, is likely to prioritise housing production above urban regeneration and cause downward pressure on brownfield development targets."⁷⁷ We agree, and so think that further work, outside our commission, takes our analysis of what *could* happen further to decide what *should* happen. For example, partnership members may decide to wait for values to improve (in order to support the development of sites that are less deliverable, but more desirable in policy terms) or might prefer to package together a number of sites with different attributes that might allow them to get what they consider to be the best balance between deliverability and desirability.

⁷⁷ CPRE (2009) Brownfield Market Signals (18)

We do not assume any policy interventions will take place in future. If they are already happening now, we have reflected the impacts

12.17 Many of the growth barriers identified could be overcome. Viability issues can be solved by the use of, say, HCA funding; utilities problems can be overcome by investment. However, we do not assume that specific funding or management action is in place to overcome these difficulties when we have generated the traffic light analysis. This would be unwise, as we do not know what actions will be taken to react to this report.

12.18 It is important to note, though, that we discuss possible interventions and changes to policy, management and strategy in later sections.

We make assumptions about build rates based on past trends

12.19 As we have already noted above, housebuilders are very cashflow sensitive. It is critical to their commercial survival to ensure that, once built, houses are sold as quickly as possible. We make the following assumptions about build rates, based on rate of sales of private housing.

12.20 It is important to note that the Government wants to see build rates increase from these historic trends. Social housing build could contribute to this increase. For now, though, we have stuck to past trends as the best current indicator we have of future build out rates.

Base assumptions on build out rates on individual sites within PKDS are two per week

12.21 In our experience, sales rates on a large, well marketed individual site will average around one, possibly two per week. To include affordable housing, we assume that a build rate will be two per week.

Base assumptions on build out rates at PKDS level are eight per week

12.22 When PKDS are seen as a whole, clearly this rate can be exceeded. For example, when at its peak, Cambourne (a new settlement outside Cambridge) was selling at a rate of six units per week.⁷⁸ This was in a very strong housing and jobs market with no nearby competing supply. At Bradley Stoke, the average annual output was 7.5 units per week (although it is worth noting that the “record” annual output in the best year was 22 per week, when 15 housebuilders were competing on site). However, housebuilders will not want to produce housing at anything like this rate for long, as it will erode values.

12.23 For our assumptions on PKDS, we have assumed that six units are sold per week. We assume that the 35% affordable housing will also be completed in the urban extension and suburban areas, and 20% in the urban areas. This roughly means that an additional two affordable units are built per week in each PKDS. Overall, this equates to an assumption of eight units built per week, or 416 per year.

12.24 We suggest that assuming that quicker build out than this could be achieved is unrealistic. Cambourne Project Director David Chare has suggested that the maximum building rate for most such settlements is around 350 homes per year.⁷⁹

12.25 In some instances it has been necessary to alter these levels assumed. We note these instances in the traffic light table trajectory commentary.

Note that the build rates used are not intended to cover all house-building activity in an area

12.26 As we have stated earlier, our report only looks at the PKDS. It is not intended to cover all house building activity in the West of England. At a local authority level, then, other sites will come forward in the plan period which we are not counting here.

How we allow for nearby competing supply

12.27 There is also the issue of “market flood”. Developers will not be able to sell houses at the same rate where there is nearby competing supply (for example, between Hicks Gate in the South East Bristol Urban Extension and nearby Keynsham). In these instances, we have reduced build out rate assumptions.

How we include build out rates for on housing with pre-existing planning permissions

12.28 We have not included these housing units in our study. They are out of our scope. However, we have had to include these units on our tables, otherwise we are not able to undertake the necessary arithmetic to look at RSS delivery.

12.29 It is important to state that we have not studied this rate of build out independently. Instead we have asked UAs to give some indication of the assumptions we should use here.

It is possible that build-out could start in advance of the blue line

12.30 It is perfectly possible for some housing development to start in advance of the point in time indicated by the blue line. On any large sites, there are likely to be “low hanging fruit” which are attractive to developers for various reasons, and might not be subject to the usual growth barriers. This sub-regional analysis cannot pick up all these contingent factors. Instead, this is a strategic study which intends to indicate when the *bulk* of housing development on a site is likely to come forward. Critically, our calculations rest on the assumptions we have been given to work with - on factors such as grant levels, Code for Sustainable Homes, and affordable housing requirements. Development which comes forward in advance of the blue line might not be subject to these assumptions.

How we have dealt with infrastructure “thresholds”

12.31 Investment thresholds show where the “tipping point” for new infrastructure is. For example, it might be the case that 500 houses could be built in a certain location but no more, due to the lack of, say, sewage capacity.

12.32 Where we have that information, we have provided it in the report. However, in many instances, providers do not have the necessary level of detail that would enable them to make the judgements required.

⁷⁸ Cambourne is planned to have around 4,000 homes with possible expansion to up to 7,000 homes.

⁷⁹ Quoted Planning Magazine 11 April 2008

How do the delivery issues change the realistic housing trajectories? What does the revised housing trajectory mean for the delivery of housing targets?

12.33 In this section, we look at what the traffic lights analysis means for the delivery of housing units in the West of England.

The barriers to development have important implications for trajectories

12.34 The barriers to development have important implications for trajectories. Our analysis suggests that build start dates are pushed until later in the plan period than previously anticipated, often due to viability problems and transport barriers.

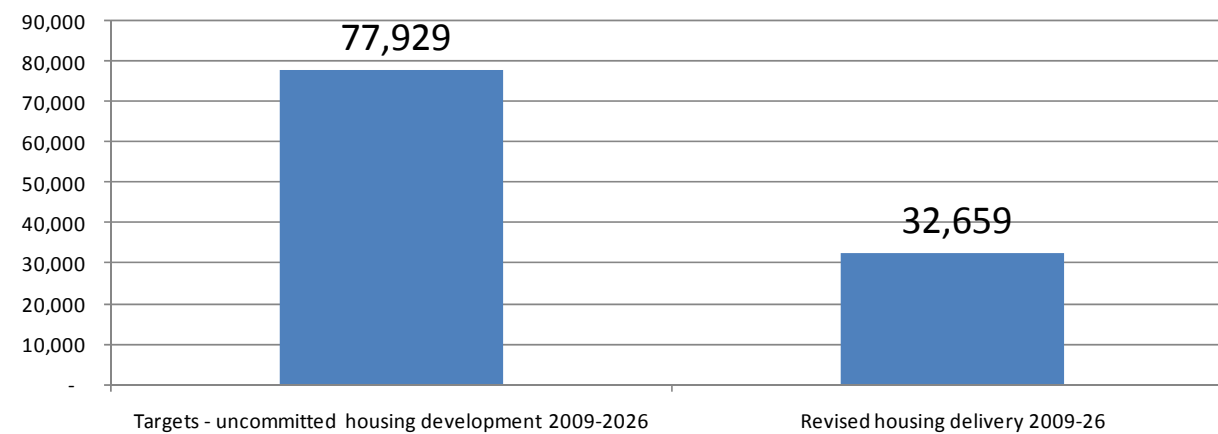
12.35 This has onward ramifications for delivery. Delivery is significantly lower than anticipated to 2026 due to a) later starts (caused by the barriers above); and b) our use of what we consider to be more realistic build out rates.

What are the implications of the traffic light analysis on the “real world” delivery of uncommitted growth at PKDS 2009-26?

For the West of England, our projections suggest that less than half of housing growth is delivered 2009-26 in the PKDS

12.36 Uncommitted growth from 2009-26 is the growth we have looked at specifically in this study. Below, we have looked at how our amended trajectory compares to the growth targets for the PKDS assumed in the RSS (Proposed Changes).⁸⁰ Our analysis of barriers to growth suggests that less than half of uncommitted planned growth will be delivered from 2009-26.

Figure 12.1 Projected achievement of uncommitted growth 2009-26 (West of England)

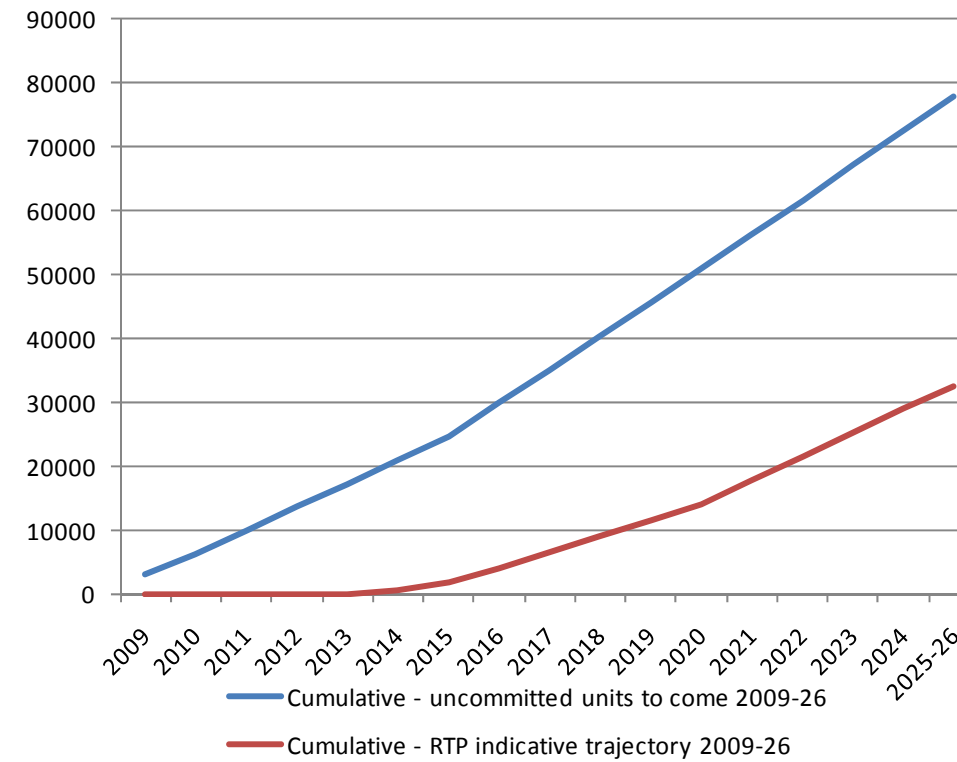


Source: RTP

12.37 The chart below looks at cumulative delivery. Our analysis suggests that there will be a very slow start compared to that originally anticipated, with delivery to these relatively demanding planning

requirements (of Code for Sustainable Homes Level 5, 35%/20% affordable housing) not beginning until 2014. Clearly, if these requirements were to be relaxed, or planning authorities were willing to tolerate greater levels of congestion, then more housing could come forward sooner.

Figure 12.2 Cumulative delivery of uncommitted growth 2009-26 (West of England)



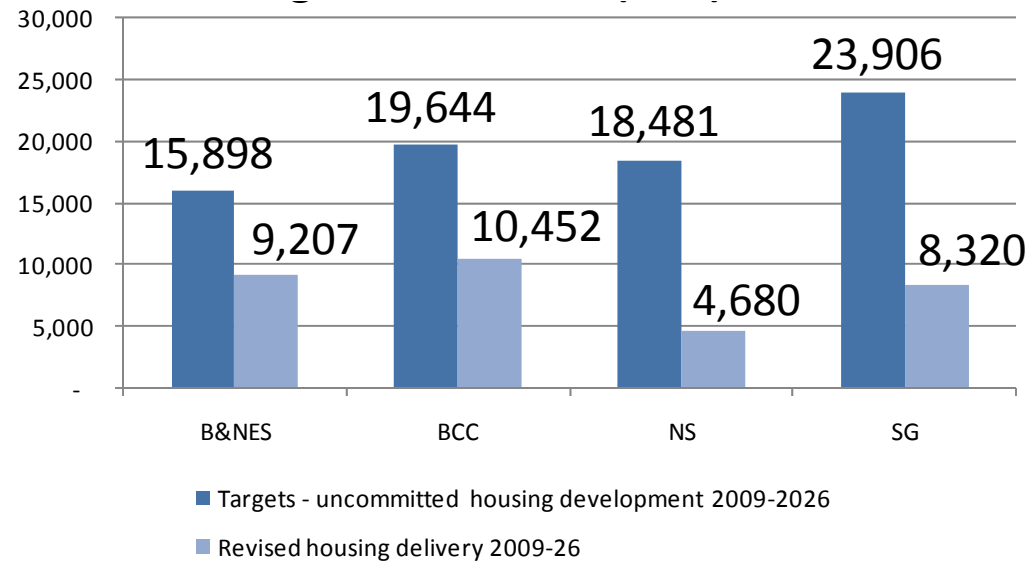
Source: RTP

⁸⁰ As pointed out above, our source for these numbers has been the MAA.

The delivery of housing growth in the PKDS 2006-26 in the constituent UAs

12.38 We now break out the above numbers by UA. The different levels of site viability and transport constraint within each UA have the most significant impacts on the ability of PKDS to deliver the anticipated growth.

Figure 12.3 Projected achievement of uncommitted growth 2009-26 (UAs)



Source: RTP

What are the implications of the traffic light analysis on the performance against the RSS-compliant trajectory 2006-26?

12.39 The RSS trajectories run from 2006-26. This presents our study (which starts from the later date of 2009) with the arithmetical difficulties. In order to make our numbers cover the same time period (and so balance), we have had to include in our study information from UAs about a) housing units built from 2006-9, and b) housing committed from 2006-9 which currently remains unbuilt.⁸¹

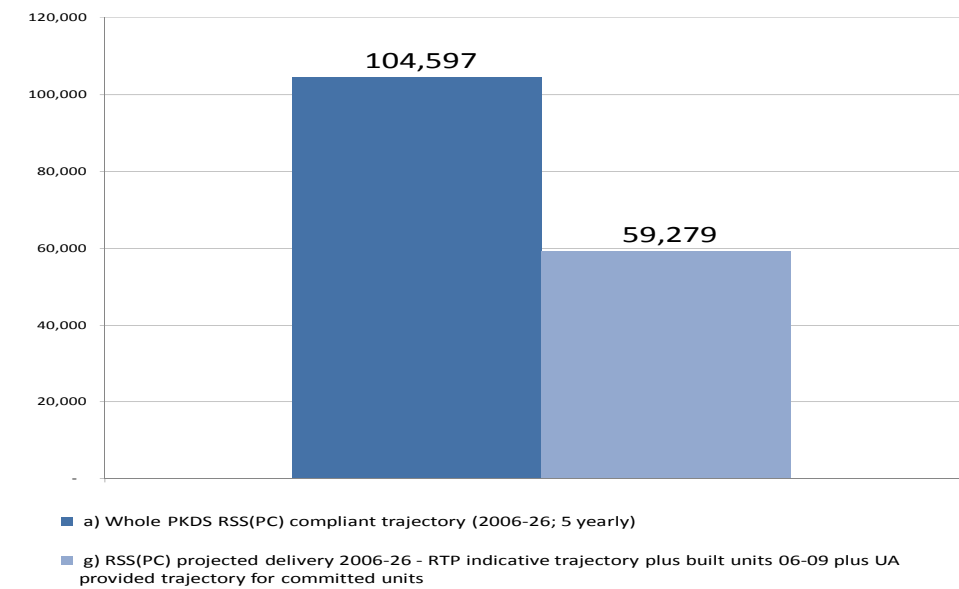
12.40 The inclusion of this information allows us to look at how the identified barriers affect the West of England's performance against RSS compliant growth.

For the West of England, our projections suggest that around half of RSS growth is delivered 2006-26 in the PKDS

12.41 Combining UA's own estimates of build out of sites already with planning permission with our estimates of build out at PKDS suggests that around half of the RSS growth will be delivered.

⁸¹ In order to assemble the required data to construct a build out trajectory over time, we have used information supplied to us by UAs in order to understand the build-out rates of units which currently have planning but currently remain unbuilt. This information is untested by RTP.

Figure 12.4 RSS 2006-26 trajectory for the PKDS against projected achievement

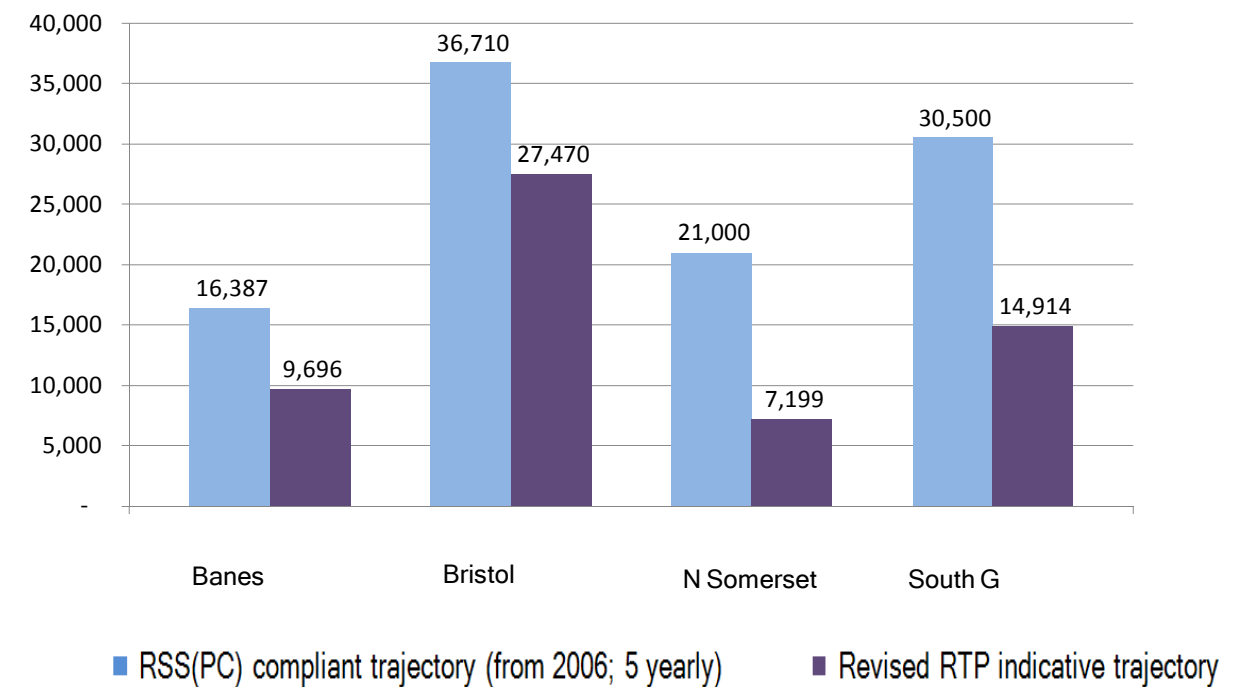


Source: RTP

The delivery of RSS growth in the PKDS 2009-26 at the constituent UAs

12.42 We have broken the above figures out by UA level. See the figure below.

Figure 12.5 RSS 2006-26 trajectory for the PKDS against projected achievement (UA level)



Source: RTP

13 WAYS OF OVERCOMING GROWTH BARRIERS

Introduction

- 13.1 Partners will need to think carefully about their response to the infrastructure funding gaps and growth barriers that have been identified.
- 13.2 As we have pointed out above, it is not our intention to make policy in the West of England. However, we believe it would be helpful to make explicit some of the possible solutions that could address the problems that we have found. We start by clarifying the nature of the challenges in the West of England.

In this section, we firstly discuss the need for an action plan, and then deal in more detail with the strategy, management and policy issues that would need to be addressed.

The nature of the challenge in the West of England

- 13.2 It is clear from the work above that there are significant problems in the delivery of infrastructure and growth in the West of England.
- We have shown that there is a very significant infrastructure funding gap. This funding gap arises in the context of the fact that a) possible developer contributions are insufficient to plug the funding gap identified, and b) the medium to long term ability of central Government to fund infrastructure has fallen.
 - We have shown that there are a number of “real world” obstacles to the anticipated build-out schedule. This has negatively affected the West of England’s ability to deliver the hoped-for housing trajectories.

Responding to the challenge with an action plan

- 13.3 We believe that because the assessment looks at the interlocking issues of viability, planning obligations, emerging changes in CSH, and market conditions alongside strategic plans it is both unusual and valuable. As a result, it generates some far reaching conclusions that go beyond infrastructure itself.
- 13.4 There is a long list of recommendations in the report that we think are important. But they might be best be seen knitted together, into an overall action plan. Without a clear action plan, there may well be little concrete progress (even though there might be a lot of “activity”). The “action plan” can draw together the various threads of work and plot a way forward. At a minimum, an action plan would have to
- sort the wheat from the chaff - by outlining each authority’s priorities, and the right sequence for investment
 - help the political decision making process by clarifying decisions that need to be taken, when they need to be taken, and what the ramifications of choices are
 - focus around how problems will be resolved - in a very direct and head-on way.

Action plan step 1: using the findings from this report to prioritise sites and policy interventions

- 13.5 The objective of this step would be to decide where to concentrate planning effort and the available funding.
- 13.6 We have been clear throughout this report that we have focused on development deliverability (showing which developments could happen) and left others to make judgements about development desirability (about which developments should happen in strategy and political terms).
- 13.7 There is now a need put these issues together. The West of England needs to have an integrated view of which sites are both deliverable *and* desirable, and so evolve a rough order of priority for attention over different timescales. This would mean that planning officers’ time, management time and available public funding (such as HCA Single Conversation funding) might be concentrated on the sites which will provide the maximum return.
- 13.8 Though the criteria used for prioritisation would need careful thought, they might include the following.
- Viability - in other words, which PKDS does the market want to take forward?
 - Sustainability and strategy. The core questions here are which PKDS’ have the lowest carbon footprint, and are most aligned to strategy?
 - Public sector cost, and the likelihood of infrastructure support / funding. This would investigate which sites are most “infrastructure cost efficient”. Some quite careful analysis will be needed here in order to sensibly apportion what are often sub-regional infrastructure costs to specific sites (although this study has provided the necessary basic information in section 9).
 - Timeframes. It is necessary to undertake this analysis to get a short, medium and long term programme. More infrastructure funding focus, staff time and management effort should go into dealing with the immediate short term problems, with some effort invested in the medium and longer term.
- 13.9 We look at these issues in the strategy, management and policy sections below.

Action plan step 2: fixing problems on priority key sites

- 13.10 The objective of this work would be getting delivery moving on the priority sites. This work would attempt to move to a situation where planners are active co-deliverers of positive change. That means a more proactive approach, working alongside developers to ask questions like: how do we fix the barriers to positive change? What do we do next? When? How? What’s the right public sector role?
- 13.11 This would be a case of
- Understanding how to solve real-life issues on the critical path. For example, an accelerated planning programme would have a positive effect on start dates in some areas, given that it is start delays that are currently on the critical path. Management intervention and funding could be focused on these issues.
 - Drilling down into the specifics of a priority site. It would use the existing work as a starting point, given that the existing work has answered these questions on the sub-regional scale.

- Revisiting strategy. This would flag up the need to fill strategic gaps, and bring strategy up to date to cope with the “new normal” in the post credit-crunch world.
- Working with and influencing HCA and RDA funding to de-risk sites.

13.12 We now review some of the strategic, policy and management responses that could form part of an action plan to overcome the delivery problems we have identified. These tasks could also be carried out on a more piecemeal basis.

Strategic responses

13.13 Strategy is the overall process of deciding where we want to get to and how we are going to get there. Here we suggest a number of ways in which stakeholders might respond to the economic context and the findings of our report by adapting their strategies.

Recommendation: sequencing and prioritising sites

Focus strategy on the higher priority sites

13.14 In theory, all the sites we have examined here are priorities - they are all “Priority Key Development Sites”. However, it appears that some will be higher priority than others. The sub-region may wish to consider a more targeted approach to the delivery of the PKDS. We question whether the UAs and the sub-region should be attempting to deal with all sites at the same time, or whether it should adopt a more focused approach on a smaller number of sites.

13.15 Once priorities are decided as part of the Single Conversation process, we expect that management effort could be explicitly focused on sites that are prioritised for the near term.

Minimising funding gaps by looking at which sites are most “infrastructure cost efficient”

13.16 Our analysis above shows that mainstream capital funding will be scarce in future years. It is therefore important to understand which PKDS are most “infrastructure cost efficient”. By “infrastructure cost efficient” we mean which PKDS have the best ratio of key infrastructure costs (in transport, education and open space) to possible houses released. In these terms, the most efficient projects will have a) low costs and b) high numbers of housing units released.

13.17 Some quite careful analysis will be needed here in order to sensibly apportion what are often sub-regional infrastructure costs to specific sites (although this study has provided the necessary basic information). But even then, this is only one part of the equation. We cannot simply take these “cost efficient sites” forward. It is important to note that the cost efficient sites may not be viable. They may not be considered sustainable. They may have other planning obstacles. But this analysis would inform decision making. Partners may decide to prioritise solving these problems in an attempt to get the maximum housing numbers delivered for the minimum cost.

Understanding which transport schemes bring maximum benefit

13.18 Part of the prioritisation process could include taking a high level transport cost-benefit appraisal (perhaps broadly using NATA/STAG principles and summary tables⁸²) across the schemes in the

West of England - so there would be a very general understanding of which alternative transport schemes would likely to bring forward the greatest economic benefit.

Focus on solving issues on the critical path

13.19 In the traffic light analysis, we used the project management concept of the “critical path” to understand which issues formed a barrier to progress at site level. The issues on the critical path are those which directly impact the planned project completion date.

13.20 This work provides a view on where work can be most effectively undertaken to speed up delivery. Management intervention and funding could be focused on these issues.

13.21 Two issues crop up as frequent barriers on the critical path for site development at the PKDS. These are transport and viability. It is difficult to positively affect either without significant funding. As discussed in the transport section, it is possible to tolerate congestion (and so ignore the transport growth barriers) but viability cannot be ignored, and can only be overcome with funding.

- Transport is the most frequent barrier for PKDS development. It is on the critical path at the South East Bristol Urban Extension; some of the components of the South Bristol PKDS; South West Bristol Urban Extension; North Fringe of Bristol; Yate; and East Fringe of Bristol.
- Development viability is also a frequent issue. Development viability is on the critical path of development at Bath City Centre, Keynsham (town centre & Cadbury); Bristol City Centre; South Bristol (Knowle West); North Bristol; and components of the Weston Town PKDS.

13.22 Sometimes on the critical path are site start delays at the Bath Urban Extension, and parts of Keynsham PKDS. Our assessment of start delays brings together the time taken to assemble sites, do consultation, work through the planning process, and assemble the necessary funding. The planning components of these elements are under the control of the local authority without the application of large amounts of funding. An accelerated planning programme for Keynsham and Bath UE would have a positive effect on start dates, given that it is start delays that are currently on the critical path.

13.23 The issues which never appear on the critical path are education, electricity, flood, gas, parks, telecoms, and water.

Consider sequencing a careful mix of greenfield and brownfield sites into strategy

13.24 The analysis carried out above suggests that there will be two main implications of any “brownfield first” policy towards housing sites. Although brownfield sites can have advantages (such as the availability of existing utilities connections, and fewer planning objections), we observe that

- the complications of many brownfield sites tend to mean that housing numbers will not be available until later in the plan period; and
- the existing use values available on many (but not all) brownfield sites mean that developer contributions towards supporting infrastructure may be lower than on greenfield sites.

13.25 Practicality suggests that some of the sites brought forward at an early stage might be edge of town housing (rather than apartment) developments. In turbulent times prioritising such sites might respond better to sectors of the market that are ‘in favour’. This would have the following benefits, given that

⁸² NATA is New Approach to Transport Assessment; STAG is Scottish Transport Advisory Guidance. Both set out the broad principles for the assessment of transport costs and benefits.

- indications are that as the house building industry recovers from recession developer interest will be focused on the creation of family housing partly in response to demand and partly because of the exigencies of development cash flow.⁸³
- we anticipate that the main demand in terms of affordable housing will be for family housing. Family housing is less likely to be created if the focus is on higher density inner-city apartment blocks.

13.26 These are the advantages of an edge-of-town, housing-first strategy. Clearly, there are offsetting disadvantages of such a policy, including possible environmental, social and sustainability disadvantages compared to a stricter urban-brownfield only approach..

13.27 It is beyond our scope to examine these choices in this report. Ultimately, these are political decisions, but it needs to be understood that neither choice is without costs. It may be that a way forward can be found that can maximise benefits and minimise costs by developing a carefully selected package of sites with the appropriate balance between greenfield and brownfield development.

Reviewing, and quickly reallocating, transport funding if development is not coming forward

13.28 Transport forms such a significant component of the infrastructure requirement for the PKDS that it needs focused consideration.

13.29 Transport a) generates many cross-border issues, b) is capital intensive and therefore requires long-term planning and c) is frequently at the mercy of shorter-term commercial decisions about development viability. These characteristics of transport investment are particularly problematic in the current economic conditions.

13.30 If, for example, the credit crunch means that particular strategic sites might not come forward, it will be important to recognise this and refocus resources on those sites or areas with the higher potential for delivery elsewhere in the West of England. The West of England Partnership might be the best place to pick up this role, which would require someone monitoring delivery, and setting timescales and priorities for when transport infrastructure delivery is necessary.

Minimising funding gaps by putting together a short, medium and long term programme

13.31 When faced with any difficult problem, it is a good idea to break the problem down into discrete parts that are more tractable. In this case, it is important to break the infrastructure development process into a short, medium and long term programme. It would then be possible to

- Focus resources on short-term issues
- Actively plan to resolve medium-term issues
- Leave long-term issues where it is clear fundamental changes in funding regimes or market conditions are necessary before these schemes are being viable.

13.32 We have used the traffic light analysis to provide us with a short, medium and long term PKDS programme.

- Short term (2009-to end 2015)
- Medium term (2016 to end 2020) and
- Long term packages (2021 - end 2026)

13.33 We have mapped the short, medium and long term programmes below.

⁸³ Developers find it difficult to recover cash quickly from apartment developments - because the entire development often needs to be finished before any sales can take place. This tends not to be the case to the same extent for developments of individual houses. In current circumstances, where cashflow is going to be centrally important, this will be an important consideration for developers.

Figure 13.1 The short term PKDS programme (note that Avonmouth and Severnside are employment-only sites)

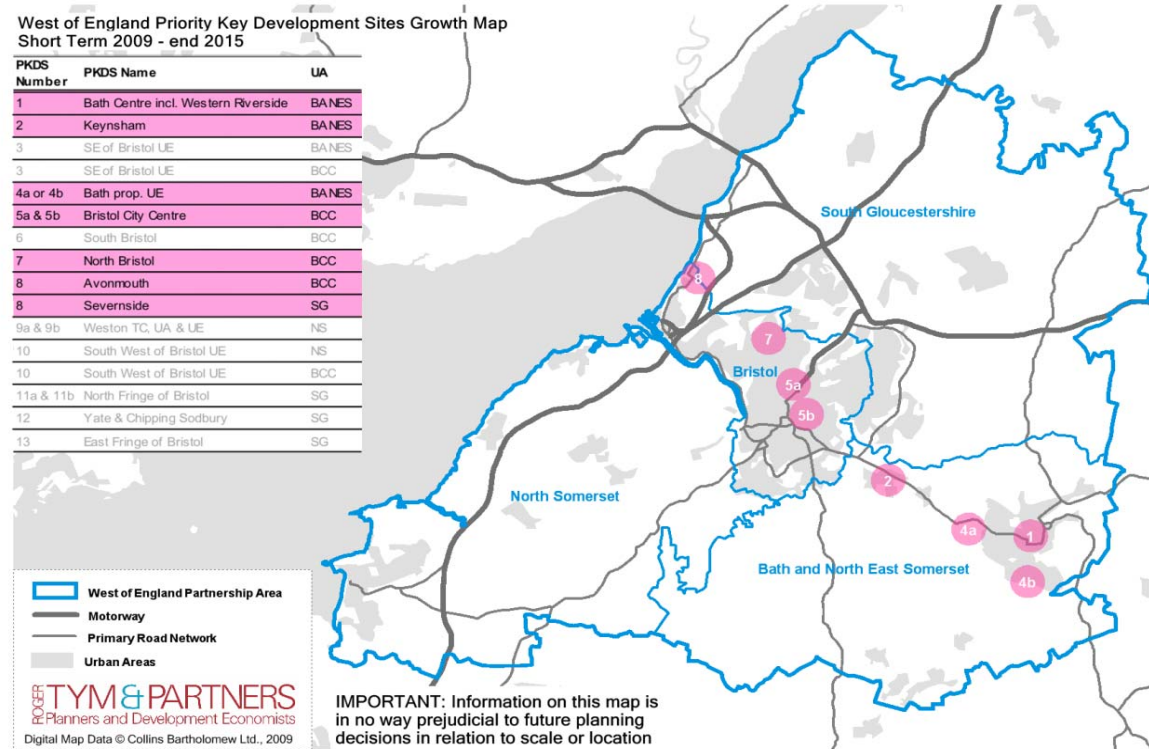


Figure 13.2 The short and medium term PKDS programme (note that Avonmouth and Severnside are employment-only sites)

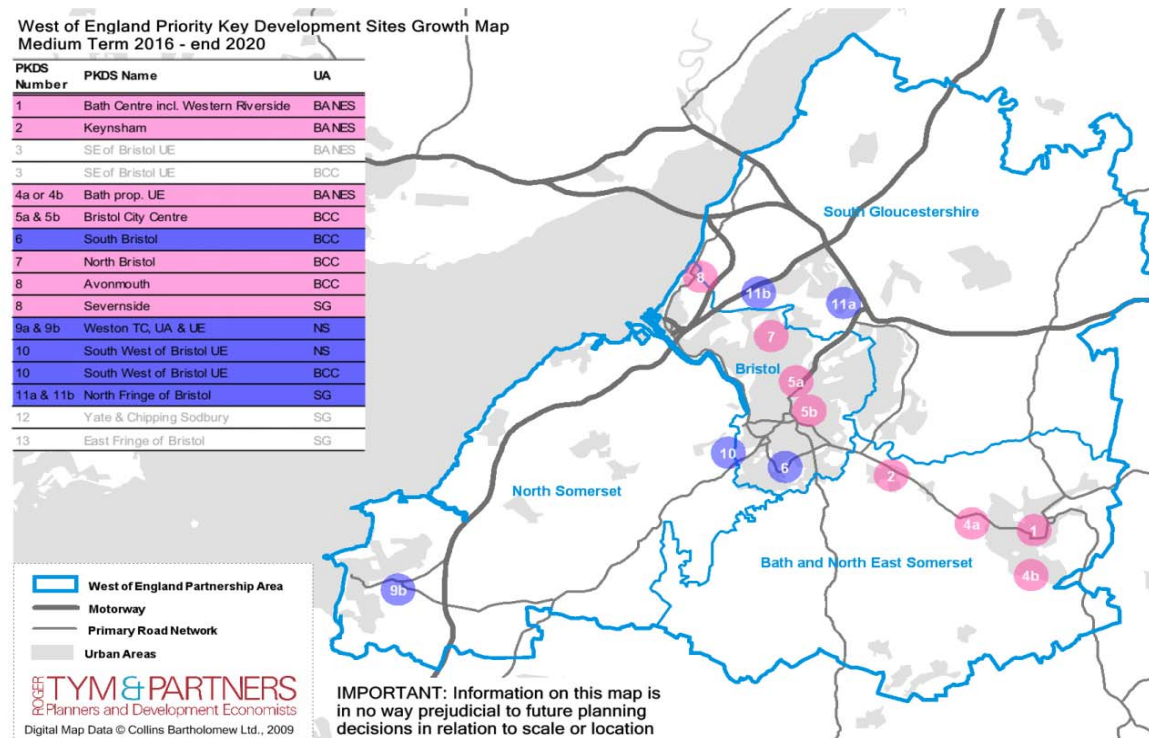
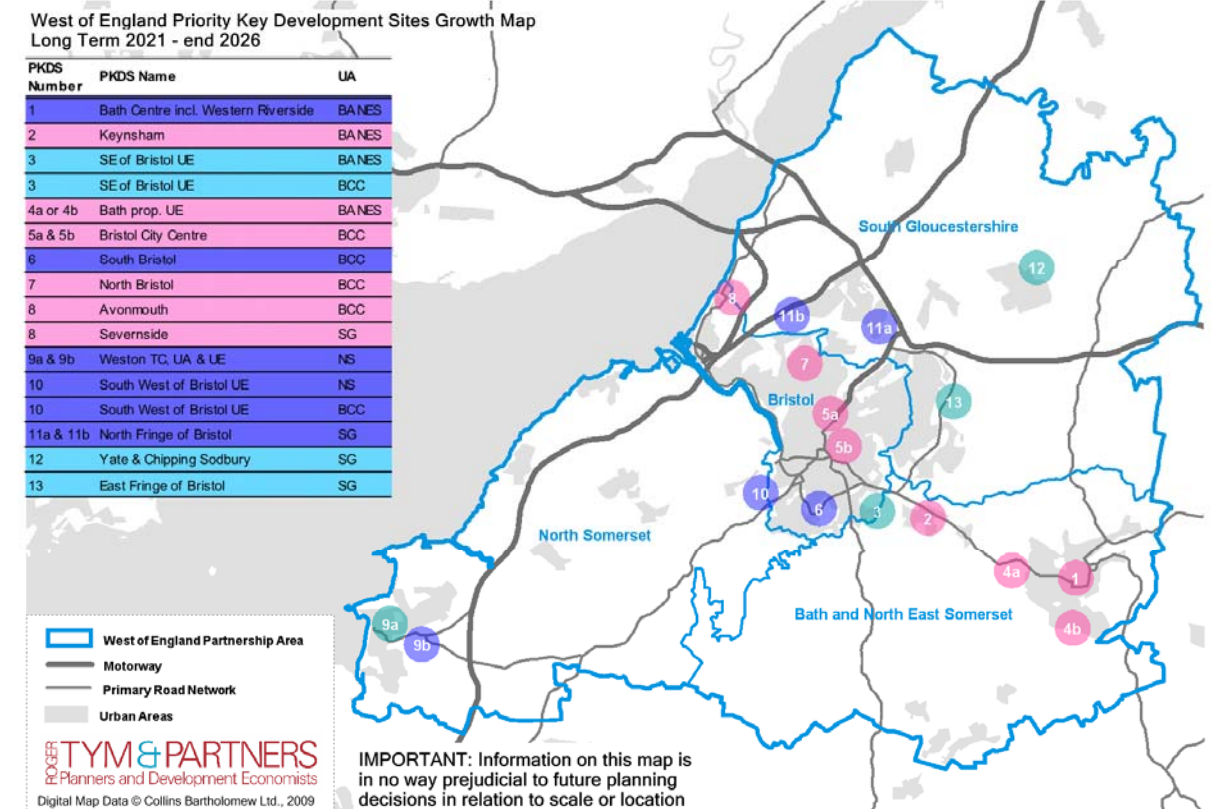


Figure 13.3 The short, medium and long term PKDS programme (note that Avonmouth and Severnside are employment-only sites)



13.34 This work might be used as a starting point for a sequencing process. It should be noted, though, this work

- does not take into account forthcoming policy or strategy interventions, which could change the proper sequence
- does not take into account sustainability and other policy choices such as a preference for brownfield development or development in South Bristol, which could also change the proper sequence
- does not take into account the costs of infrastructure of each PKDS.

13.35 As outlined above in section 12.15 onwards, then, this work should be seen as a starting point for policy development, rather than a policy recommendation in itself.

Recommendation: revisit strategy. Fill strategic gaps, and bring strategy up to date to cope with the recession

Revisiting strategy: review policy linkages between housing development and employment take-up

13.36 In some instances (including Weston) there has been a strategic concern that housing development be balanced by an increase in jobs. This has had two expressions in policy. The RSS has suggested firstly, the release of housing sites is dependent on the take-up of employment space; and secondly, there has been an emphasis, particularly in the town centre, on mixed use development.

13.37 There are good reasons why this approach has been taken in the past. They are related to an urban renaissance-type agenda, and a concern to reduce unsustainable out-commuting. But the policy is having a significant effect on the viability and delivery, of housing sites in the area. It may be the right time to re-examine this policy, to see if the interests of the area over the next few years are better served by allowing “pure” town centre housing to come forward. Some “pure” housing schemes, for example retirement accommodation, would have some positive sustainability and urban renaissance effects, and no significant effect on commuting levels. We say more below on the merits of looking at retirement (and student) markets below.

Revisiting strategy: review the detailed findings of our work on transport

13.38 The work that URS has carried out as part of this commission provides useful detail on the outstanding transport strategy issues and possible ways forward. The details are too numerous for them all to be reiterated here. We say more in the “issues” section of the transport chapter.

Revisiting strategy: Research, and if necessary prioritise, retirement and student accommodation

13.39 At the moment, there are good economic reasons to a) keep the construction industry busy, and b) ensure an increased supply of housing to the market. This could have a number of social and economic benefits.

13.40 One of the main ways that this can be achieved is for authorities to facilitate the construction of housing provision in markets where demand remains strong. In particular, publically owned sites could be specifically marketed to the two sectors which present themselves here.

- Student accommodation. There are several companies and funds that are interested in student sector and who have money to invest. The best example is Unite. Although student housing does not count towards the housing trajectory, it does release family accommodation, and so makes a contribution to easing housing pressures. We suggest that a couple of short-term opportunities, perhaps one in Bristol and one in Bath, are actively prioritised and taken forward.
- Retirement accommodation. Self-contained housing units do count towards the achievement of housing targets, but we note that McCarthy and Stone are back on the market for land for retirement housing. Prices paid in this market have declined because buyers can't sell their existing property, but once this starts to ease, retirement home buyers seldom need mortgages and are thus not as directly affected by the credit crunch. This allows many viability problems to be sidestepped. We suggest that these types of opportunities are taken up across the sub-region, with Keynsham town centre, central Bristol, Bath, and Weston possibly being particularly suitable. First steps here would involve the various UAs being proactive in bringing their own land forward, or suggesting the use of suitable sites for the purpose and then seeing if developers bite. We note that retirees have low car ownership, and do not commute, meaning that many transport problems could be overcome.

Filling gaps in strategy: decisions are needed quickly on the South Bristol Link

13.41 The absence of a clear strategic view about the South Bristol Link actually consists of, let alone any kind of scheme delivery, is holding back development in South Bristol.

13.42 Given that the constraints on availability of transport funding, we suggest that the assumption should be that the link should be created in the quickest and most economical way or phased so that in the

first instance at least they can make a start on some of the sites affected by it and on a sustainable basis. Public transport solutions to the problems are more likely to be fundable in the early phases and should be less vulnerable to budget cuts than new road schemes. Perhaps Voltaire's maxim should be adopted: "Don't let the perfect be the enemy of the good."

13.43 The advantage of a bus link is that it can be improved later perhaps moving from a prioritised service to hard route improvements. An entirely new road might be more difficult to implement and fund.

13.44 Regarding developers interests, some horse trading with the industry consortium with the aim of finding a solution that allows a start on site in return for an undertaking to contribute towards wider scale transport improvements later. This leverages a significant cash flow advantage to developers in the postponing outlays.

Filling gaps in strategy: there is a need for a strategic approach to Avonmouth and Severnside

13.45 Avonmouth and Severnside are regionally significant employment sites. However, at the moment they labour under a number of imperfectly understood legal, flood, transport and environmental constraints.

13.46 We understand that

- There are a series of awkward legal complexities associated with Severnside (in South Gloucestershire) regarding the extant 1957 ICI permission. We understand that South Gloucestershire has limited legal control over approximately 325ha of employment land, with the effect that there is limited ability of either the Council, Highways Agency or the Environment Agency to a) successfully object to growth, or b) require financial contributions to infrastructure. We understand that legal work has been undertaken on this issue in the past, but this could be revisited.
- There is no coherent view on the flood issue. It appears that there is currently no real handle on flood defence strategy or costs for the area, although studies are under way. The Environment Agency is looking for a comprehensive flood defence solution across this whole area. The cost of protection against extreme tidal events would cost in the region of £280m (though we note that the range of costs quoted is very large, and more modest solutions have been quoted at £17m and £32m). However, because the area does not contain a significant residential population, such expenditure does not perform well in Environment Agency Cost Benefit Analysis. The fact therefore appears to be that a comprehensive, full protection scheme against extreme tidal events is highly unlikely to ever appear. Even so, the EA is in a position to object to development, at least in the areas unaffected by the 1957 permission.
- Again, our outline view is that the approach here might be to ensure that the “perfect is not the enemy of the good”. Given that the full flood defence solution is unlikely to ever appear, individual solutions might be preferable both in Avonmouth and Severnside. An example here is the approach adopted at one development at Severnside, where ground levels were raised. This solution was tolerated by the EA only because of their limited legal hold on the site resulting from the site's location within the boundaries of the 1957 permission (the EA would presumably have otherwise launched a successful objection on the grounds that this solution would tend to displace floodwater onto other property).

- On the face of it, rather than waiting for a full flood defence solution, the question would appear to be the extent to which properties are adversely affected by their neighbours' individual flood defence solutions. If newly developed sites flood, then that should presumably be a matter for occupiers and their insurers. It should not be a problem for the public purse.
 - There is no intermediate modeling of transport demand. There are significant gaps in understanding around the impact of new development on transport infrastructure, or the costs of those implications.
 - Habitats issues (such as the impact of development on roosting sites) should also be sorted out now before any relevant major applications are made. These issues are not properly understood now.
- 13.47 It might be useful if both Bristol and South Gloucestershire took a more active approach to managing the strategically vital Avonmouth and Severnside area. At Severnside, apart from the land with the ICI planning permission few permitted sites remain available, and further permissions on green field sites beyond the plan period would need to address the issues as described above related to flood risk transport and nature conservation.
- 13.48 A more pro-active approach would be preferable to simply reacting to applications, not least because of
- the huge lead-in times required by the EA
 - the fact logistics sites are still in demand, and would be in greater demand if any barrier scheme went forward.
- 13.49 We understand that this will take considerable staff resources, but it would seem that the current downturn would be an ideal time to focus time on this issue.
- Filling gaps in strategy: Hengrove is a potentially a good medium term prospect, but lacks a strategy*
- 13.50 The successful regeneration of South Bristol is an immediate high priority. It has great merit as a development site. It is within the built-up area; growth would serve a number of policy objectives around sustainability and regeneration; and crucially, the site is in one (Council) ownership, with no significant contamination or tenancy issues to deal with. These facts mean that this is a site of great potential.
- 13.51 There are two major issues that seem to be holding Hengrove back.
- A masterplan. There is a need for a clear idea of how to take the site forward. A masterplan was created in 2005 but this is no longer active, and this would need to be revisited. Developers are waiting for council to give them a product that they can work with. If the Council can decide in broad terms what they want and where they can start, it will be in a position to start looking for a developer partner.
 - The need for a decision around the South Bristol Link. We have discussed this above.
- 13.52 We suggest that strenuous efforts are made to ensure that any visioning exercise does not ignite a shopping list of unrealistic demands, thus undermining the likelihood of delivering any housing. (We note that similar efforts will be needed to keep the process currently underway in Knowle West from undermining the viability of development).

Filling gaps in strategy: North Bristol Fringe could benefit from a more formal "cross-border" approach

- 13.53 The Hengrove area, for example, appears to need a comprehensive masterplan. It appears that the North Bristol area might benefit from a similar approach. Strategically, North Fringe is covered in LDF, and specific work has been done on Lockleaze, but the area might benefit from a cross-border approach with South Gloucestershire which "joins the dots". This would help get a grasp on what is a very complex situation, and would flush out what the key priority projects are.

Filling gaps in strategy: consider renewed area strategies

- 13.54 Some cities (such as Liverpool and Manchester) have made quite remarkable strides over the past decade. In the process of writing this report, we have heard calls for Bristol to understand and emulate the methods that have been used.
- 13.55 Prof Michael Parkinson's conclusions in the 2006 *State of the English Cities* report bear re-reading. He states that "A key characteristic of successful cities is their strategic capacity to exploit their assets,"⁸⁴ and that leadership needs strategy, stating that "Manchester in particular has a very robust strategy".⁸⁵
- 13.56 In the past decade, Bristol has been regionally dominant, and hasn't needed a growth strategy. Now that growth is no longer assured, the city and sub-region may wish to look at how a strategy for the city centre might be used to bolster Bristol's offer. The lack of an adopted, actively followed strategy means that whilst the development and regeneration of Bristol city centre is a strategic priority, there is no underlying strategy to evidence or direct this (although the emerging Bristol Regeneration Framework may plug part of this gap). Whilst Bristol has an unadopted City Centre Strategy (the latest edition is dated Nov 2005, but did not get beyond draft stage) it has no status and is in no sense a delivery vehicle, although does outline opportunities, issues and priorities for the future.
- 13.57 A strategy could support this ambition in policy, outline the necessary supporting infrastructure, undertake a place shaping role, and provide a framework for implementation. Clearly, any refreshed strategy would need to reflect carefully on the medium and long term impacts of the credit crunch.
- 13.58 The theme of place-based or area-based rather than programme-based or theme-based targets and budgets also chimes with the Government's approach to local government performance review and more block funding - with Comprehensive Area Assessments, LAAs or MAAs and other 'initiatives' related to the Treasury *Sub-National Review*. Activities of the RDAs and HCA are also moving in this direction.

⁸⁴ Parkinson et al for ODPM (2006) *State of the English Cities* Volume 2 (153)

⁸⁵ Parkinson et al for ODPM (2006) *State of the English Cities* Volume 2 (104)

Policy responses

13.59 Policy provides the means of delivering strategy. We deal with it here.

Recommendation: develop a strong policy rationale for developer contributions

The Greenhithe decision has potentially far-reaching consequences for developer contributions strategies. Work will be needed to evidence future demands

13.60 The “Greenhithe decision” shows that any attempt to obtain developer contributions without being clearly evidenced will be unsuccessful.⁸⁶

13.61 Viability is not particularly sensitive to marginal differences in the level of S106 contributions towards strategic infrastructure. The important issue here is perception. Developers are most likely to challenge the proposed regime if

- public sector agencies aren’t trying to use mainstream money where they can,
- the menu of items sought include things which the developers might regard as luxuries and
- the calculations involved are clearly open to challenge both in terms of precision and equity.

13.62 Planning authorities could use the current downturn in activity to strengthen the policy rationale for their contributions strategies.

Use expert valuer advice to inform any future renegotiations of developer contributions

13.63 In some instances, the credit crunch has seen developers attempting to renegotiate developer contributions on the grounds that developments are no longer economic. However, no planning obligations should be renegotiated until the local authority has full understanding of the fundamental development economics of the site. (This study is not a substitute for a proper individual understanding of each site).

13.64 Such a process would certainly need to involve an understanding of what the developer has paid for the site, or the price options that have been negotiated. The objective would be to ensure that the public sector was not subsidizing developers’ unwise market-peak land purchases, or subsidizing land values. It may be that in some instances that some developers should go bust, to allow land back onto the market where it can be repurchased at more realistic prices.

13.65 This approach should also be taken to planned sites. There are good practice examples around the West of England of where this approach is being taken. Expert views have been taken of values and possible developer contributions of sites in Bath, and in North Somerset. These studies allow a better understanding of what design features and developer contributions each site can bear.

⁸⁶ Dartford Council had claimed that planning permission should be refused for development in the absence of payment of a “roof tax” of £5,000 per dwelling for a development of 49 flats in Kent Thameside. The Council had insisted on payment as a contribution to strategic transport improvements in the Kent Thameside area. The Council attempted to justify the sum by relying on the Kent Thameside Strategic Transport Tariff policy which it had adopted for development control purposes. The builders successfully challenged the policy, arguing that no material weight could be attached to the Tariff which imposed a flat rate charge which was not justified, was applied without realistic prospect of negotiation, and which was not fairly and reasonably related in scale and kind to the proposed development contrary to the advice in Circular 05/2005. Both the Inspector reporting on the appeal and the Secretary of State agreed.

13.66 This more nuanced approach would allow more informed choices to be taken. For example, otherwise uneconomic brownfield sites could be allowed forward with lower or nil developer contributions in order to realise their often greater social, economic and environmental benefits.

Ensure that current development makes a fair contribution to future infrastructure requirements

13.67 Where housing growth precedes infrastructure investment, it will be necessary to ensure that all housing, whether developed before or after the arrival of infrastructure, contributes fairly to the costs of the infrastructure necessary for the development over the long term. Developer contributions negotiations will need to take these longer-term needs into account.

13.68 A clear and properly evidenced understanding of necessary infrastructure for each PKDS will be required if funding is to be successfully obtained from developers.

Recommendation: influence public sector masterplan content and urban design to ensure that it is development-friendly

13.69 Planning should support optimal utilisation of sites and investment. However, public sector masterplans are often drawn up with provisions that are sub-optimal from the developers’ point of view. A degree of market realism would have a considerable impact on the viability of final development. There are a number of ways in which public sector masterplans can be made more “development friendly”. The objective ought to be to a) to minimise spending of elements that are not valued by end purchasers and b) to minimise masterplan content that actually damages end sales values.

13.70 There are some design and sustainability features which are valued by occupiers, principally those that can result in demonstrable savings or tangibly improve the comfort and amenity of homes. These should be encouraged. Implementation of masterplans and design codes could focus on requirements that add value that can be monetised.

13.71 Finally, masterplanners sometimes do not reflect the realities of landholding constraints in larger schemes - for example, where one landowner’s holdings are designated as open space while the next one gets to build a private housing. Local authorities can help by trying to broker equalisation agreements in instances in which the burden of providing land for open space and public facilities needs to be shared between several landowners in the context of all wider area.

Recommendation: researching best practice design

13.72 There is concern at some sites that the loss of developer appetite for apartment development means that densities will fall, with consequent under-achievement of housing targets.

13.73 There is research that shows that the negative effect of density in family housing schemes can be made up by investing in good design. Planning authority leadership on this issue is likely to be required: we should perhaps not underestimate the extent to which the recession is going to reduce housebuilders capacity for creative thinking.

13.74 Local authorities could research best practice in this respect and use it to encourage developers to look at high-density housing schemes rather than either medium density schemes on a standard basis or for apartment schemes.

Recommendation: Local Authorities and/or HCA may wish to consider Compulsory Purchase Orders for some sites

- 13.75 Local authorities and HCA should in the first instance attempt to acquire land by negotiation where it is possible on reasonable terms. A compulsory purchase notice (CPO) is usually a measure of last resort.
- 13.76 However, if landowners are unwilling to sell at a realistic prices, the prospect of a CPO is often the only basis upon which reasonable terms can be achieved. In some instances it may be necessary to make a statement of decisive action on CPO early in a project. Selective use of CPO powers may be required in order to demonstrate that public sector agencies intended to acquire the land, and that holding out for very high hope values would be fruitless.
- 13.77 We have not detected a particular appetite for this approach to adjusting land values in the sub-region, but there is acceptance that such an approach might in some instances be necessary.

Management responses

- 13.78 Here we suggest a number of ways in which stakeholders might respond to the economic context and the findings of our report by adapting their management approach.

Recommendation: de-risking sites by upfront site and infrastructure funding

- 13.79 Developers are highly cashflow sensitive. This is a particular problem on “risky” sites, where there are significant up-front works required including decontamination. In these instances, developer partners will be discouraged by a requirement to undertake major remediation in advance of housing sales.
- 13.80 The RFA2 bid supports a further range of management interventions put forward by the South West Regional Assembly⁸⁷. In our view they are sensible. Some are likely to be taken up through the HCA’s Single Conversation process. There is little to be gained from us repeating these ideas.
- 13.81 In the past, in other regions, the Regional Infrastructure Fund has been seen as a significant funder. The RIF is a mechanism through which a region can pump prime or forward fund major infrastructure schemes, in situations where the anticipated public or private funding for the scheme will not be available in full at the time when the infrastructure is needed to support planned growth or development. The cost of the capital investment would then be recovered from pre-determined public and/or private funding streams as they become available. RIFs could be formed from a range of different funding sources, for example by pooling section 106 contribution, and it could potentially be established as a sub-fund within the Regional Funding Allocation (RFA).

⁸⁷ RFA2 West of England Partnership Submission Appendix B November 2008 (16). Measures to unlock development of urban and derelict land sites through land assembly, clearance and bringing development certainties; ‘Infrastructure first’: where housing is unlikely to be delivered immediately, a focus on site preparation and supporting infrastructure, with priority given to regeneration areas and brownfield sites, will quicken delivery once the market improves; mixed communities: the purchase of land to facilitate the future supply of more mixed and balanced communities. In particular, RFA funding could be used to buy land in higher-value areas for future affordable housing. This could be organised through an ‘opportunity fund’ allowing a rapid response when new sites become available; additional gap-funding for capital projects or revenue programmes where developer contributions have reduced; an ‘opportunity fund’ for 2 years to allow the rapid purchase of value-for-money land or premises

- 13.82 We caution that there are problems with seeing RIF as a solution to major infrastructure funding problems. The main source of RIF funds is likely to be developer contributions, but as we have seen, these contributions are likely to be significantly reduced in coming years. A RIF is likely to comprise only a small proportion of the resources needed to deliver the infrastructure required. The East of England RIF is looking at securitising an increase in the Supplementary Business Rate in order to release a cash sum. However, this is likely to be highly unpopular with the business community, and seems to be politically difficult.

Complex sites such as South Bristol and North Bristol may need new management arrangements. These arrangements may bring opportunities for Local Delivery Vehicles and JESSICA funding

- 13.83 Given the level of complexity, and the high costs, of the redevelopment and “densification” of areas with existing housing (such as South Bristol and North Bristol) new management methods might be needed.
- 13.84 Local Government Association work on this issue argues that Local Delivery Vehicles (LDVs) can provide direction, commitment and coherence to the delivery of large-scale developments.⁸⁸ LDVs can use land assembly, investment and planning powers to create confidence and stimulate private investment to enable the expectations of government and local communities to be realised.
- 13.85 The 2007 Housing Green Paper⁸⁹ built on this work and called for new “local delivery vehicles” that could “combine local authority land assets, public funding streams, private finance and the new homes agency” to create long-term investment partnerships. Since then, local authorities have started to design Local Housing Companies (LHCs), joint ventures with private companies that use council-owned land and private cash as long-term investments in new homes.
- 13.86 We understand that the concept of a “Housing Company” is being considered for South Bristol. The concept has been approved in principle.⁹⁰ If the Housing Company was to be constituted as a City Economic Development Company (CEDC) - a possibility which would need further analysis - it would make two particular funding opportunities available.

A LABV or other LDV model could be considered

- 13.87 Firstly, the existence of a CEDC would make a Local Asset Backed Vehicle (LABV) possible. Local Asset Backed Vehicles are funds combining locally-owned public sector assets (in the case of South and North Bristol, the asset would be land) and equity from institutional investors, established to finance the delivery of major regeneration outcomes.
- 13.88 LABVs may be a particularly effective form of Special Purpose Vehicle (SPV) because of their combination of developer expertise and local authority land assets in long-term partnership.⁹¹ There

⁸⁸ LGA (2005) *The Role of Local Delivery Vehicles in Creating Sustainable Communities* <http://www.lga.gov.uk/lga/publications/publication-display.do?id=21712>

⁸⁹ <http://www.communities.gov.uk/publications/housing/homesforfuture>

⁹⁰ <http://www.bristol.gov.uk/ccm/content/press-releases/2009/feb/another-step-forwards-for-south-bristol-regeneration.en>

⁹¹ For example, Harrison and Marshall (PriceWaterhouse Coopers and the Centre for Cities, 2007) and Grace and Ludiman (Journal of Urban Regeneration and Renewal, 2008) have both explored the potential of LABVs as long term delivery vehicles for area-based regeneration.

are favourable references to the concept in the State of the Cities Report and the Sub-national Review, and by the All Party Development Group. A key element in the potential of LABVs is their application of a partnership approach to specific development projects where ownership and control of assets is critical for project delivery and provides the collateral against which the partnership can borrow. An important feature of LABVs is that they offer the opportunity to invest in uneconomic early sites by the prospective future uplift of the whole. The approach is therefore particularly appropriate in a situation where enhanced values are to be created through area regeneration.

13.89 There is no approved template for an LABV. However the basic model is one that brings together an asset rich, cash poor organisation or organisations such as a local authority (although in practice most examples to date have been RDAs or British Waterways) and a cash partner or partners such as a developer with access to private capital. These stakeholders then form a long term partnership to carry out a development programme, and to share the returns. It is in effect a long term joint venture, in the basic model owned 50/50 by the two partners, with a board on which the two partners each have half the seats, and a small delivery team.

13.90 While LABVs appear to have considerable potential, they are not suitable for all areas. Harrison and Marshall provide a tool-kit that local authorities or other public bodies can use to evaluate the model to see if it fits their needs. The key questions authorities must ask themselves are:

- What does our authority want to achieve? What are our regeneration aspirations?
- Do we have the asset portfolio needed to secure investment? Does the local authority have a range of attractive and more difficult sites?
- What types of finance and partners can we attract? What skills and resources are needed, and how can we attract a partner with them?
- What governance structure should we propose for the LABV?
- Once established, how can specialist delivery partners be brought in?

13.91 Careful consideration of these will be needed to confirm that an LABV is the best option for areas within the West of England and to design an appropriate one. Other Local Delivery Vehicles models are also available, so it is not necessarily a straightforward choice.

JESSICA funding could be considered

13.92 Secondly, a CEDC could be a legal vehicle for Joint European Support for Sustainable Investment in City Areas (JESSICA) funding. This is not new funding, but does work in a different way to existing funding streams. Here we present findings from a summary paper prepared by Price Waterhouse Coopers.⁹² For the first time, JESSICA allows EU grant funding receipts to acquire a stake in an Urban Development Fund (UDF) investment vehicle. JESSICA allows that creation of an Urban Development Fund that can take a stake in a number of vehicles.⁹³

⁹² PriceWaterhouse Coopers *An Introductory guide to JESSICA*. Note that this only applies to areas which are eligible for European Regional Development Fund and European Social Fund funding. We understand that the whole of the West of England area is eligible.

⁹³ An Urban Development Fund (UDF) is defined as a fund investing in public-private partnerships and other projects included in an integrated plan for sustainable urban development. It is likely that UDFs in the UK will be established at either a regional or local/city level in response to integrated urban development plans, project pipelines and investor interests.

13.93 Opportunities for JESSICA related to the delivery of infrastructure and growth in the West of England are

- Local Authority Asset Backed Vehicles (LABVs) - Price Waterhouse Coopers state that JESSICA could provide an important source of liquidity with which to enhance the value of public assets or acquire additional strategic assets.
- Infrastructure Funds - finance targeted at infrastructure or other enabling investment

13.94 It should be noted that housing is not eligible expenditure, but in practice could be included as part of a mixed use scheme, provided sufficient additional investment is attracted from other sources to finance these ineligible components.

A simple alternative solution might be a Council-led scheme using prudential borrowing powers

13.95 Reference has been made above to new financing models. However, setting up and running these models can be legally complex and absorb great amounts of senior management time.

13.96 We think - although it should be noted that this is not a worked-out position - that a simpler solution might be a council-led scheme using prudential borrowing powers to fund a rolling programme using a management contractor rather than housebuilder. This might appeal to some of the hybrid companies such as Kier or Galliford Try. The advantage from the council's point of view is that it cuts costs both by removing the housebuilders profit and higher financing charges by substituting cheaper local authority capital.

13.97 The down side of the additional risk to the Council should be limited by the extent to which they are dealing in a familiar market with and by the use of a management contractor.

Investigate Tax Increment Financing/Accelerated Development Zones

13.98 Novel funding streams such as Tax Increment Financing (highlighted in the Chancellor's Budget Statement) may be worth pursuing.

13.99 CMS Cameron McKenna note that a recent House of Commons report highlighted the need for local authorities to have greater flexibility in relation to raising and using revenue and also entering into partnership arrangements with the private sector.⁹⁴ In particular the report proposes that accelerated developments zones (ADZs) should be set up - a UK variation on the tax increment financing (TIF) which is common in the United States and whereby the construction of infrastructure is funded from future increases in tax revenue which arise from the associated new development.

13.100 CMS Cameron McKenna report that the key views expressed by the Group in the report are:

- Over the past 10 years, there has been significant progress in terms of urban regeneration but the recession has brought this to a complete halt.
- Developers should expect further downward pressure on capital budgets going forward. This in turn will mean that local authorities have less resources either to fund infrastructure themselves or to establish partnerships with private sector companies.

⁹⁴ House of Commons All Party Urban Development Group issued its latest report entitled "Regeneration and the Recession - Unlocking the Money" 30th June 2009 reported in CMS Cameron McKenna 2 July 2009

- Similarly developers will be more restrained both by the limit of availability of finance and the general reduction in land values and rents. The private sector will be looking at other ways of sharing some of the risk and upfront development costs with the public sector.

13.101 Business rates supplements and the community infrastructure levy are unlikely to provide sufficient resources to fund infrastructure on their own. If local authorities are going to take a more significant role then there will need to be more devolved funding and greater flexibility in terms of the types of arrangements which they can enter into.

13.102 The key conclusions and recommendations are:

- The Government should sanction in the next Pre-Budget Report a series of five or six ADZ pilots in different cities across the UK.
- These pilots should be used to push through a full national ADZ scheme from 2011.
- Local authorities need to take a more proactive and entrepreneurial approach to working with the private sector. They will need to take on more risk (but with the corresponding increase in reward).
- The HCA should establish a specialist regeneration team to assist local authorities with the day-to-day challenges of implementing different funding models and assessing/allocating risks.

Recommendation: set up an Infrastructure Group / Forum to maintain momentum

13.103 There may be a role for infrastructure co-ordination groups to be set up at LA level. We are aware that some of these links already exist. Their key tasks are set out below.

Emphasising with partners the role of "bending" mainstream funding into PKDS, and challenge service providers to look for innovative funding packages

13.104 It is becoming increasingly apparent that the "pre-crunch" approach of giving away development rights with a planning contributions price ticket attached will not work any more. We do not expect it to revive any time soon.

13.105 Our findings show that developer contributions are in no way sufficient to perform the hoped-for role of picking up the necessary infrastructure costs. Developer contributions need to be seen by service providers as the funder of last resort.

13.106 We suggest that one of the biggest single contributions that the public sector can make to improving the viability of development and the social, economic and environmental sustainability of the finished product is to ensure that maximum use is made of mainstream funding sources. Innovative funding packages (involving bending mainstream funding into growth areas, public/private partnerships, and revenue raising schemes) will all be very important if infrastructure is to be funded.

Use co-located facilities to make savings and improve service delivery

13.107 The Price Waterhouse Coopers report quoted above in paragraph 3.49 states that one partial response to the forthcoming shortage of funding will be to think carefully about the procurement and use of public facilities.

13.108 Work carried out for the NHS has wide application here. There appears to be some potential for both quality enhancements and cost efficiencies in the provision of multi-user "community hub" buildings. Research suggests that some of the possible benefits include⁹⁵

- Joined up service delivery to deliver more customer focused services
- Economies of scale through co-location and integration, and introducing cost savings in capital and revenue streams
- Making the most efficient use of land across the public sector estate.

13.109 Consultation with service providers in the West of England has tended to support these research findings. We have found that service co-location is seen as a real strategic preference that will result in improved customer service and increased footfall for the services/activities provided.

13.110 Work carried out through the West of England Partnership Culture Group has also suggested that significant savings might be made in the co-location of provision. For example,

- schools buildings could incorporate community centre provision
- schools grounds could be used for out-of-hours sports facilities
- libraries, sports facilities, informal learning and social services can be co-located

13.111 Initial approaches towards this type of co-operation are already under way. Continued efforts, either through the Partnership, MAA process or other mechanisms, needs to be taken. We anticipate that this type of partnership working can begin to overcome the barriers to this kind of inter-agency co-operation that have been identified by NHS research (including financial constraints, working culture, policy alignment and geographical coverage).⁹⁶ These constraints are live issues. We note that this at least one example in the West of England of differing partners having different ideas of what constitutes reasonable costs. These differing approaches have in the past meant that facilities that were intended have been delivered jointly have been separated out in order to allow individual partners to control their own expenditure.

Contingency planning

13.112 Over the next few years, there is an obvious risk that hoped for public spending (on, for example, transport schemes) will not actually materialise. Any strategic body needs to have thought through, and be able to cope with, the implications of rapidly changing circumstances.

13.113 PPS12 makes it plain that a Local Development Framework Core Strategy should make proper provision for uncertainty and not place reliance on critical elements of infrastructure whose funding is unknown.⁹⁷ This commonsense approach is now reflected in planning requirements. PPS12 says that "A strategy is unlikely to be effective if it cannot deal with changing circumstances....Plans should be able to show how they will handle contingencies: it may not always be possible to have maximum certainty about the deliverability of the strategy. In these cases the core strategy should show what

⁹⁵NHS London (2006) *The Case for Social Infrastructure Planning*
http://www.healthyrbandevelopment.nhs.uk/documents/int_social_infrastructure/The_Case_For_Social_Infrastructure_02_06_06.pdf

⁹⁶ ibid

⁹⁷ See PPS12 paragraph 4.10

alternative strategies have been prepared to handle this uncertainty and what would trigger their use.⁹⁸

13.114 The spreadsheet model provided with this Growth infrastructure assessment can help with this effort. The spreadsheet can be altered to explore different land values, affordable housing ratios etc, so different scenarios can be explored. This and other work should be used to “stress test” different planning scenarios, with worked out strategic planning responses on each. The new governance structures mentioned above will provide an ideal arena through which these discussions can be managed.

13.115 As a way of beginning to think about this issue, the NHS ‘potential futures’ scenario planning tool uses agreed scenarios to

- Test in-depth and refine the strategic intentions set out in strategy.
- Stress-test plans.
- More clearly identify and understand key strategic imperatives.
- Engage key stakeholders in strategic plans.
- Identify any capability requirements not already identified.
- Identify contingency plans.

13.116 These techniques are also used in the private sector. Work by McKinsey may be useful as a starting point.⁹⁹

Market scanning to understand which developers will be bringing sites forward, and how able they are to contribute to infrastructure

13.117 Around 100,000 houses are planned for the West of England. The delivery of these homes depends on the ability of major developers to bring forward these homes. Although many developers have been profoundly damaged by the recession, some are now moving towards a situation in which they are readying themselves to restart some developments and to acquire sites where these are available at bargain basement prices. In addition there are now quite a few “vulture funds” which, once they have bought land, will be keen to trade it or use it.

13.118 Those sites which are owned or optioned by the weaker developers are likely to come forward later in the plan period. In particular, small developers are virtually unable to access funding. This will be a real obstacle to small-scale and infill development.

13.119 We suggest that any infrastructure group (or other group) appoint someone to scan the market to see which of the major housebuilders they deal with has some prospect of being in funds and thus might be expected to bring forward schemes sooner rather than later if given the chance.¹⁰⁰

⁹⁸ See PPS12 paragraph 4.46

⁹⁹ See, for example, The McKinsey Quarterly December 2008 *Leading through Uncertainty* http://www.mckinseyquarterly.com/Leading_through_uncertainty_2263

¹⁰⁰ See, for example, Bovis Trading Statement, July 2009: “2009 will be a year of delivering strong positive cash flow, repositioning the Group’s balance sheet with lower work in progress and anticipated net cash in hand at the year end. This should provide the Group with the opportunity to invest in the residential land market at what it anticipates will be attractive values”.

13.120 If authorities had better background intelligence on developers, it would be possible to anticipate likely build-out, and focus policy, management time and infrastructure spend on those sites which were more likely to come forward.

The way forward to a Community Infrastructure Levy

13.121 The brief states that this study “will facilitate the establishment of a Community Infrastructure Levy if the local councils seek to use this procedure at a later stage”. It is clear that the concept of a partnership-wide Community Infrastructure Levy is being explored as a way of capturing more developer contributions for infrastructure.¹⁰¹

13.122 The Government explicitly requires progress be made towards Community Infrastructure Levy (CIL). PPS12 makes it clear that the Core Strategy should advance their infrastructure planning to “serve as a basis for establishing policies for charging CIL on developments in their areas”.¹⁰²

Recommendation: we suggest a “wait and see” approach to CIL

13.123 The recent Planning Bill, which received Royal Assent in November 2008, contained provisions for the introduction of the Community Infrastructure Levy (CIL). Despite this and two previous policy documents on how CIL could work, its precise provisions are still currently unclear. The Pre-Budget Report has stated that the implementation of CIL has been delayed until April 2010.

13.124 Even after primary legislation is published, we expect that there will be a great number of practical issues to iron out. It is our guess that the benefits of being first with a CIL would be outweighed by the advantages that might be gained for the West of England by a “wait and see” policy. It might be better to allow other areas to flush out the issues first. Quite apart from these technical matters, there are other good reasons to wait. CIL was conceived in a strong development market, whereas conditions now are fundamentally different and values are not expected to return to previous levels in the short term. There is consequently a greater risk in introducing a new contributions policy into a fragile, uncertain market. As we have suggested above, we think that there are significant strategic changes needed if we are to see the level of housing delivery take place, and management time would be best spent focusing on these issues, rather than setting up a CIL.

13.125 We think this the best policy because of the likely complexity of setting up a CIL (or CILs). The difficulties can broadly be categorised into setting, implementing, spending and administering a CIL, and some of these issues are set out below.

Difficulties in setting a CIL tariff

13.126 The CIL consultation document¹⁰³ proposes allowing the level of charge to vary across an area to reflect variations in viability. In paragraph 15 the consultation document seems to envisage that the prime purpose of this flexibility would be to allow charges to be set at a lower rate in regeneration

¹⁰¹ Growth Points Bid Update Report West of England Partnership Agenda Item 5 24th October 2008. Infrastructure Delivery Plan: “It is envisaged that s106 contributions determined on a site by site basis may not deal adequately with strategic issues. At a later stage, consideration will be given to setting a development tariff or community infrastructure levy by the Local Authorities, working together through the framework of the Partnership.

¹⁰² DCLG (2008) PPS12 Paragraphs 4.11 and 4.12

¹⁰³ DCLG Community Infrastructure Levy Consultation (July 2009)

areas rather than at a higher rate in wealthy areas but clearly in practice the rules they envisage could be used either way. The consultation document is also quite clear that the levy charges would not be bound by the necessity test.

- 13.127 This raises a number of issues. Firstly, the proposal has some similarities with a progressive tax insofar as the amount charged is related to the ability to pay rather than to the defined need for infrastructure. Secondly, the proposal doesn't make it clear whether reduced rates in lower value areas will be funded by increased rates in high value areas or through higher public contributions.
- 13.128 Setting a CIL is therefore easiest where infrastructure needs are evenly spread in relation to the size, location and type of development, there is a relatively homogenous development market (i.e. viability in each development category is broadly the same across the area) and development can afford the necessary proportion of such costs (i.e. taking into account public sector funding).
- 13.129 In reality though, each local authority will have difficult decisions to make in each of these areas. For example in terms of viability, a CIL set too high will render some less viable sites uneconomic - and these are often going to be the inner-city sites which generate the greatest wider social and economic benefits from their regeneration. A CIL set too low will mean that the more viable sites effectively get a free ride. Such a policy would be ineffective in capturing the broader social and economic gains from the granting of planning permission. There are also inter-related issues of priority - affordable housing and sustainability requirements need to be considered.
- 13.130 A local authority will therefore need to consider:
- Which development categories to apply a CIL to (eg does CIL only apply to residential development, or commercial development as well?),
 - Which infrastructure categories are included in the charge (does CIL only relate to, say, transport, or are other issues included?) and
 - The variance in viability between developments in the area (is CIL set low, so as not to discourage development on regeneration sites, or high, in order to capture value from high value sites? Are there to be any site exemptions and if so on what grounds?)
 - How often will charging levels be reviewed?

Difficulties in implementing CIL

- 13.131 The Government's consultation document sets out that the process of setting charges should be embedded in the development plan process, and be subject to consultation and inspection processes. It is envisaged the CIL charges will be set out in a "charging schedule", and that this will be a legal document created through the CIL regulations but will also be part of a local authorities' LDF.
- 13.132 The CIL will be tested in a similar way to development plan documents to ensure robustness and provide a full opportunity for stakeholders to test it.

Difficulties in spending CIL

- 13.133 The plan and decision making process for spending CIL funds will require a mechanism that provides a rational basis for choosing between the competing claims of service providers and geographical areas. There are likely to be political and "buy in" issues associated with this that will need to be overcome before a CIL can be introduced effectively. Whilst these problems are not materially

different from those experienced in setting a standard charge regime used at present by the county council, there may be more visibility and profile in allocating CIL.

- 13.134 CIL will have to be used to deliver the required infrastructure arising from new development, and will be based on a robust and publicly examined infrastructure assessment. This assessment will need to allocate anticipated CIL funds between different service providers and geographical areas. This will require a much closer relationship between service providers and the charging local authority to agree the plan, responsibilities for delivery, and also a decision making mechanism for spending the CIL funds. It is not clear how closely spending CIL funds needs to relate to the infrastructure assessment that forms the evidence for it and, or, the core strategy.

Difficulties in administering CIL

- 13.135 Implementing a CIL will require charging authorities to introduce new administration and management systems. There is the
- collection and charging of CIL from development;
 - the spending and distribution of CIL funds with service providers; and
 - producing, updating and monitoring CIL information (both internally and to external service providers).
- 13.136 There are a number of issues and risks on the above basis that would need resolving before a CIL could be effectively introduced. We therefore think that a full CIL across the West of England area should probably not be pursued for another 3-5 years. A review will be needed in the future to see if a CIL is worth pursuing.

Recommendation: next steps on CIL

- 13.137 We would not suggest that the Partnership simply ignore the CIL issue over the medium term. One potentially major advantage of CIL (or, for that matter, a tariff) would be that, if set at the right level(s), a greater quantum of contributions could be secured from development, mainly because there would be fewer exceptional circumstances that would make for non-payment. This could be critical to funding the infrastructure identified in this report. The certainty of developer contributions from a CIL also allows the potential of forward-funding key infrastructure that would otherwise not be fundable until major development schemes either provide it directly or through the financial contributions it provides.

The Partnership needs to test the local appetite for CIL

- 13.138 A key benefit of CIL is that it can more easily fund sub-regional infrastructure - that is, larger pieces of infrastructure typically benefiting more than one local authority area. The Government proposes that local authorities should have the freedom to work together to pool contributions from CIL within the context of delivering their local development plans.
- 13.139 For this benefit to be realised, the authorities in the West of England Partnership need to agree in principle that working together on a joint charging schedule is desirable. There must be a collective understanding that issues are collective in some way, and could be solved by joint action.

If appetite exists, then preparatory work could begin to define the issues covered by CIL, and the area which it could cover

13.140 Secondly, if this is the case, it may wish to undertake some preparatory work to decide the exact nature of joint issues, find solutions to some of the challenges outlined above, and develop the evidence base required to implement a CIL.

This work would be worth doing even if a CIL is not pursued by the West of England

13.141 Even if stakeholders do choose to rule a CIL out at this moment, there are still potential improvements to infrastructure service planning, delivery and developer contributions policies that could be made. These may also indirectly help prepare the Partnership for a CIL in the future, with potentially new planning approaches or policies that reflect some elements of a CIL. This could include:

- Improvement of service planning/delivery. The infrastructure assessment and funding model could be used as a base and catalyst for improving service provider liaison and agreement of priorities for s106 investment. Although districts would still retain all ultimate control over use of 106 monies, and the infrastructure assessment would not necessarily have planning or legal status (other than as part of the evidence base for LDFs), better solutions such as joint service provision facilities (e.g. joint emergency services) could be facilitated and funded through joint service provider forums/management boards.
- Concentration on, and resolution of, particular infrastructure category issues - certain infrastructure categories have been highlighted in this report as a particular infrastructure issue. CILs can cover a number of infrastructure categories. However, the CIL approach seems particularly relevant to certain categories of infrastructure (such as transport), and it may be better to concentrate on these, at least in the short term. For example, the impact of new development in Kent Thameside (part of the Thames Gateway) on the strategic road network was deemed to be unacceptable by the Highways Agency when planning applications were being prepared. Dartford and Gravesham Borough Councils are therefore developing a strategic transport tariff to supplement funding agreed with DFT, DCLG and the developers Land Securities to pay for a plan of key transport infrastructure works.
- Moves towards policy alignment. Developer contributions policies, and prioritisation of infrastructure, differ between the local authorities in the West of England area. Opportunities for authorities to work more closely together on planning and developer contributions policy would not only help tackle some of the shared growth issues in the West of England area, but also form a stronger base through policy alignment for implementing a CIL in the future.

Whilst preparatory work can begin now, the Government says that primary legislation will be in place by April 2010. Detailed work should wait until after this date

13.142 Whilst the general shape of CIL is reasonably clear now, and many of the above tasks can begin straight away, detailed work should perhaps wait until legislation has been passed by Parliament. The July 2009 Consultation paper states that this will come into force in April 2010.