West Midlands Combined Authority

Using infrastructure to reinforce housing and job site delivery

A strategic advice paper

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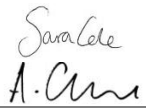
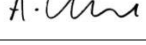
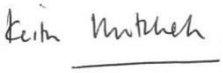
Prepared by	Sara Cole Andrew Clarke	Principal Engineer Senior Associate		15/09/15
Reviewed by	Andrew Clarke	Senior Associate		15/09/15
Approved by	Keith Mitchell	Chairman		15/09/15

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EXECUTIVE SUMMARY

1. **This study is about how the West Midlands Combined Authority might use infrastructure investment to maximise the delivery of jobs and housing development.** We hope it will help to create a work programme for the Combined Authority which will create real added value.
2. **Circumstances are auspicious.** Projections suggest that the West Midlands jobs are on a healthy upward trend.[1] Demographic growth rates are rising.[2] Together, the result is a big increase in housing demand.[3] The structural boost from the arrival of two HS2 stations will provide additional momentum. The devolution deal has every sign of providing the West Midlands with the integrated strategic governance it requires to capitalise on opportunities at the right economic scale.
3. **But growth is still latent. For growth to happen, it must be embedded within the West Midlands through the creation of the right investment opportunities. However, history suggests the West Midlands economy finds it difficult to create these viable investment opportunities**: the area's industrial heritage frequently creates high land remediation costs on sites. Sales values are not high enough to overcome these costs. Even where remediation costs turn out to be modest, information failures create perceptions of development risk which hold back activity.
4. **These processes make everyone worse off.** They force development to peripheral greenfield and green belt sites. That creates social and economic damage in the hollowed out central core, and development sprawl in the more rural fringe. The results are at once both deeply unpopular and economically inefficient. The scale of projected growth means that some level of greenfield and greenbelt site development will be necessary in the West Midlands in any event, but if central urban areas are not able to absorb growth viably, then development greenbelt landtake will rise steeply.
5. **Infrastructure investment is one way of solving these problems. There is evidence that infrastructure provision can increase demand for land, and thus values.** This makes development more viable, and helps us solve a major development problem in the West Midlands.
6. **This report focuses on the relationship between infrastructure provision and site development viability**. We look at how infrastructure investment might help bring forward housing and job sites.
7. **Our focus means that we are *not* looking at the other (very valuable) effects of infrastructure investment** such as agglomeration impacts, improvements in

[1] Experian Regional Planning Service (June 2015) Total workplace jobs

[2] PBA (November 2014) Strategic Housing Needs Study Stage 2 report. Chapter 3 of the report and the Appendices show positive natural change and net inward migration

[3] ibid

business efficiency and costs, deprivation reduction, and so on. These matters are being dealt with by other studies.

Our approach

8. **We have shown our approach diagrammatically on Figure 0.1 below.**
9. We have already set out the development challenges in the West Midlands: these frame our work. The next steps are to understand growth and transport investment planning separately, and then bring both together to show how better integration between the two can maximise the delivery of jobs and housing development.
10. We then review whether utilities shortages and other infrastructure investments might affect delivery, and set out how the CA can move towards a focused planning and infrastructure strategy across the West Midlands.
11. We show how the CA can manage and implement change, and finally set out some of the longer term issues that the CA may wish to consider.

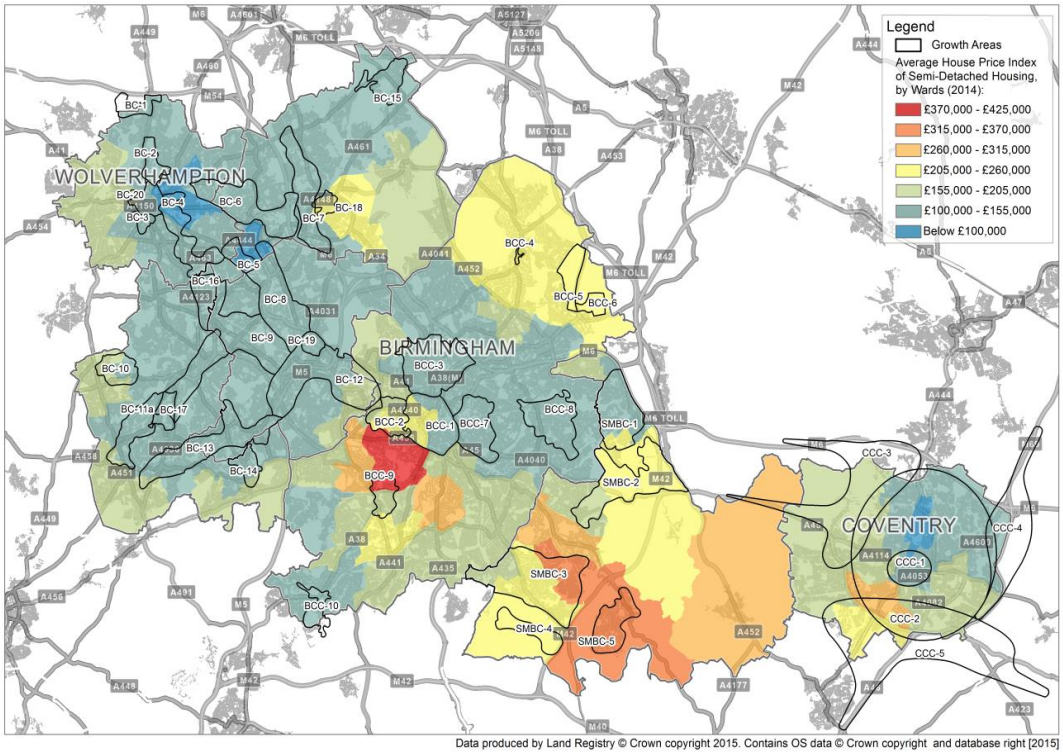
Figure 0.1 Report structure

Understanding growth plans

12. **Our first step was to analyse growth plans in the West Midlands to 2031. The picture is fractured. Plans are intellectually coherent, but it is hard to pull together a consistent, area-wide view about which growth sites are the most important.** Growth zones and corridors that are identified in existing plans are geographically very wide, and usually follow areas of particularly low sales values which will tend (other things being equal) to struggle with development viability (see

Figure 0.2). There is little to orientate an investor, or provide a strategic direction for West Midlands strategy.

Figure 0.2 Growth areas against housing sales prices (a development viability proxy)



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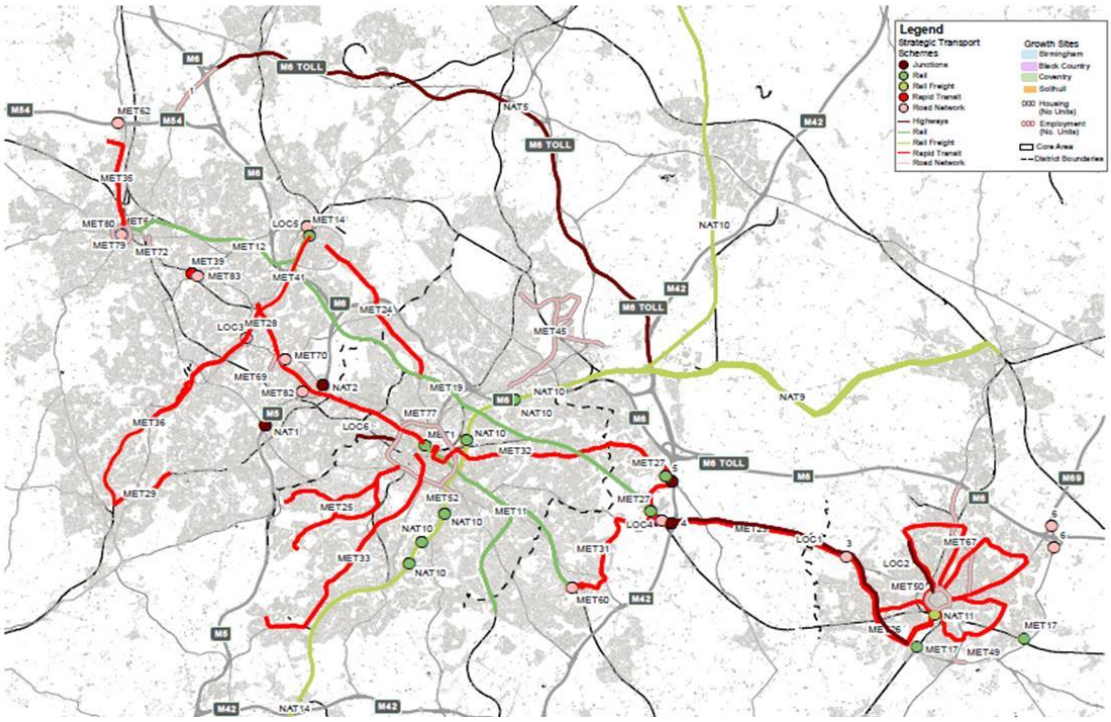
Understanding transport plans

13. **We worked to understand the West Midlands' transport plans. Again, the picture is complex**: this is a big area, with plans covering a long timescale to 2031.
14. **This study needed to get a strategic overview**. As a starting point, we created a longlist of 130 uncommitted schemes from the Highways England Regional Investment Strategy, the list of uncommitted schemes from ITA Strategic Transport Plan longlist, and the uncommitted schemes in HS2 Growth Strategy Connectivity Programme.
15. **We focused the list of schemes with a series of tests designed to identify which schemes might genuinely assist in the development of housing and jobs sites.** The tests looked at whether the projects were in a growth area, and then whether they were of the right type, scale and location to assist development.
16. **The focus of our tests meant that they could exclude otherwise excellent transport schemes, if they did not assist in site development.** The tests should not be confused with a Cost Benefit Analysis, which would be based on value of time savings, and be constructed in an entirely different way. The tests resulted in a list of 55 uncommitted transport schemes which might help to deliver jobs and housing sites (see Figure 0.3).

Figure 0.3 Transport schemes helping job and housing site delivery



Integrating planning and transport provision

17. **We then needed to take the above analysis, and understand how land use planning and infrastructure investment might mutually reinforce each other to create the viable growth capacity that the West Midlands needs**.

18. **First, we examined infrastructure plans and understood the extent to which land use planning supported them**. Our objective was to understand where additional planning work might better unlock the benefits of planned infrastructure investment (for example, planning or assembling new sites, allocating new uses, or advocating site intensification) that might extract maximum value from transport investment. We arrived at a list of areas where additional planning work might usefully take place. Some projects were of a scale that demanded a particular focus. These included the following.

    - **Making the M6 Toll Road free at point of use for HGVs.** This project may release capacity on the classic M6, and may increase in developer interest along the A38 Lichfield/Burton on Trent corridor, on the A5 into Tamworth. It may also create pressure to switch from low-value activity to logistics and higher value manufacturing: areas affected are likely to include Brownhills, Norton Canes, Little Norton and south east Cannock. Planning policy may choose to respond to maximise the opportunity.
    - **Camp Hill chords.** The project will create new stations at Kings Heath, Moseley and Hazelwell, Fort Parkway, Castle Bromwich, Kingsbury and West Nuneaton (Galley Common). Some areas adjacent to new stations are relatively developed

– meaning that value uplifts may mostly accrue to existing property owners rather than stimulate new growth - but there could be scope for intensification and new uses at some sites, especially along the north Chord.

- **Snow Hill lines**. This project may assist Black Country corridors 12 and 13, and the Solihull and Shirley growth area. Planning work can prepare for the opportunity.
- **Brierley Hill to Wednesbury metro extension**. Brierley Hill plans are well understood, but there could be additional opportunities arising in the Dudley – Brierley Hill – Stourbridge Corridor (corridor 11), Hill Top and Tipton – Dudley Port (corridor 8) and Brades Village (corridor 9).
- **The East Birmingham to UK Central Metro Extension line.** New opportunities may arise along the alignment.

19. **We then reversed this process. We looked at whether *growth plans* had sufficient *infrastructure planning* support to realise their opportunities**. We found that there was some apparent timing mismatch between planned growth and transport interventions, but this can be fixed. We also found that some schemes appeared not to be well supported with transport infrastructure interventions, but this might be for perfectly good (local) reasons. Future local detailed work needs to check.

Will utilities capacity constrain growth?

20. **Our objective was to understand whether sufficient utilities investment is in place to allow capacity for growth in the West Midlands CA area.** Some responses from utilities companies remained outstanding.

- **Electricity**: a number of upgrades were required to cope with growth in Solihull and Birmingham, and major upgrades needed to cope in Coventry.
- **Telecoms**: new growth is covered by BT Openreach, but a major uplift in capacity – perhaps required to deliver ambitious Smart city networks – require early CA interventions.
- **Gas**: our respondents suggested that capacity should not be a problem, providing advance warning is provided.
- **Potable water**: supplies are unlikely to constrain development. Severn Trent identified possible long term shortages, but is investing to overcome these.
- **Sewerage**: foul capacity is not a major obstacle to growth, although Coventry North West needs work.

How can opportunities from other infrastructure interventions be maximised?

21. **The UK Government plan to invest over £100 billion of public money on infrastructure over the course of the Parliament**.[4] It would seem sensible to maximise the positive impact of that expenditure in the West Midlands.

22. **There are a range of opportunities.** Public realm strategies remain important in getting values up and demonstrating development momentum, but are most effective if married with broader investment and growth strategies. We found good evidence that this relationship was well understood in the West Midlands: a number of transport schemes have factored in public realm improvements.

23. **Other strategies are less likely to affect values, but there could be a useful CA role in sponsoring change across the West Midlands, and spreading best practice.** Examples of such areas include walking and cycling provision, green power generation, air quality, and providing a test bed for new engineering such as driverless cars and very light rail.

A focused Combined Authority strategy for planning and infrastructure

24. **We believe that the Combined Authority has a potentially very important role in the development of the West Midlands**. The scale of the growth involved, and the cross-border nature of the issue, firmly suggests that cross area strategic governance is required.

25. **The CA will need a focused strategy if it is to achieve its potential**.

26. **Our work suggests that, at the moment, a fractured strategic picture creates investment risk and reduces growth.** We found that, in some areas, growth areas are too large to highlight key site development opportunities, or to focus thinking and planning delivery; that hard decisions are needed on the right role of strategic centres in order to provide the right infrastructure in the right place; and that – historically, at least - there has been too little focus on the links between Birmingham and its economic hinterland.

27. **Now is an excellent time to clarify and integrate the strategic planning and infrastructure investment picture.** As we have seen, the growth context is positive. Governance is in flux: the CA is being instituted, and many authorities are developing or refreshing their planning strategies. There is also a new recognition of the importance of getting the 'Core City' to work effectively in order to create agglomeration economies.

28. **The question is how the necessary clarity and focus can be achieved. In London, the strategic planning picture is made more tractable through the use of the Opportunity Area designation**. Opportunity Areas are large, strategically

[4] http://www.parliament.uk/business/publications/research/key-issues-parliament-2015/industry-infrastructure/infrastructure/

important sites which are also supported by new transport infrastructure. They focus strategic thinking and site delivery activity.

29. **Our work provides a start towards a list of West Midlands Opportunity Areas.** We have identified a list of sites which have both significant development potential, plus a good relationship to transport plans. More work will certainly be required on this list. We do not offer it as a finished product, but as the start for further discussion. In our view, a major objective of future CA work should be it take these broad areas and better define the key Opportunity sites which sit within them.

Table 0.1 Towards a list of West Midlands Opportunity Areas

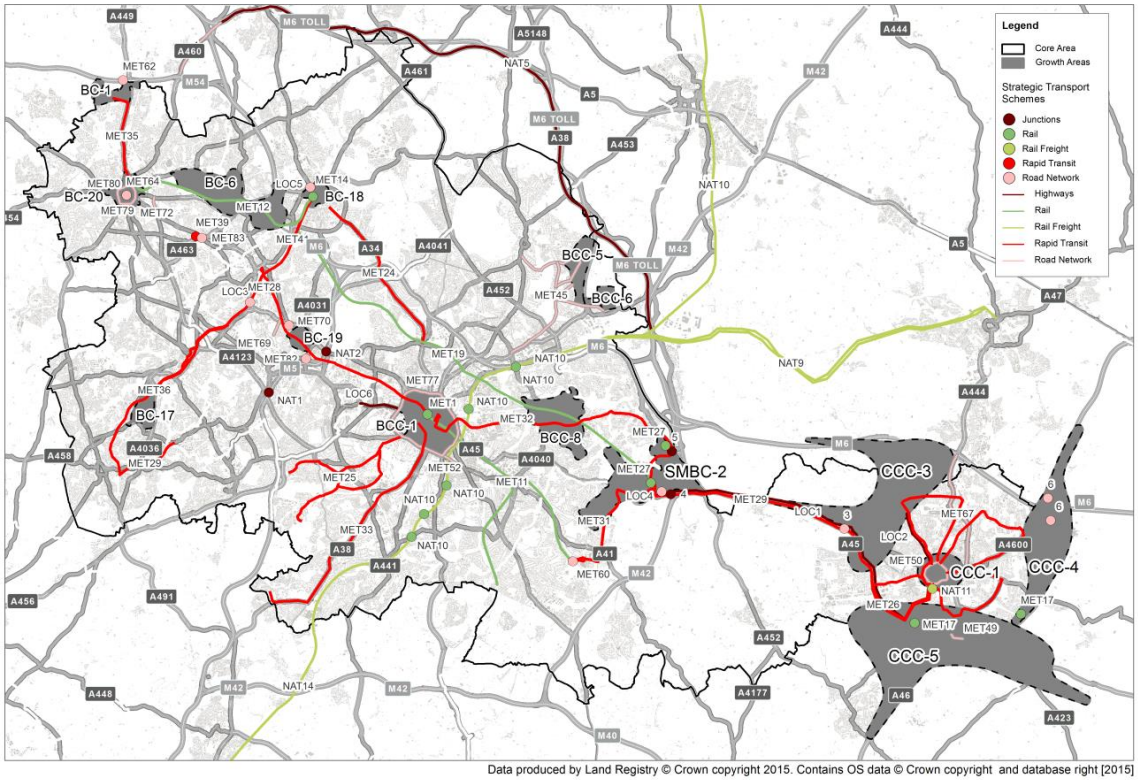
	Opportunity Area	Infrastructure scheme	Planning area	Housing by 2031 (units)	Jobs by 2031
1.	Birmingham city centre	Range of PT infrastructure interventions including Snow Hill, Metro extensions, Sprint, Camp Hill Chords	Birmingham	12,800	36,893
2.	Peddimore	Sutton Coldfield PT package (Sprint element)	Birmingham	-	7,214
3.	Langley	Sutton Coldfield PT package (Sprint element)	Birmingham	5,000	
4.	Selly Oak	Longbridge to Birmingham Sprint	Birmingham	700	4,500
5.	Eastern Triangle	Metro extension east	Birmingham	1,000	2,016
6.	Brierley Hill	Metro extension west (Brierley Hill to Birmingham via Wednesbury)	Black Country	4,105	27,152
7.	Walsall	Range of PT interventions. Metro extension, A34 Sprint. Walsall Gateway.	Black Country	1,457	26,539
8.	West Bromwich	Metro extension west (Brierley Hill to Birmingham via Wednesbury)	Black Country	511	25,314
9.	Wolverhampton	Walsall to Wolverhampton rail; city centre ringroad; i54 Sprint	Black Country	2,271	26,988
10	Pendeford/ Fordhouses including Black Country Enterprise Zone - I54	i54 Sprint	Black Country	-	2,893
11	Wednesfield - Willenhall – Darlaston including Black Country Enterprise Zone - Darlaston	M6 Toll alterations; J10 upgrade (already committed)	Black Country	-	16,780
12	Coventry north east periphery	SPRINT Cloverleaf.	Coventry	4,000	11,000
13	Coventry north west periphery	SPRINT Cloverleaf. Warwick University UK Central Sprint A45	Coventry	6,500	6,000
14	Coventry south periphery	SPRINT Cloverleaf	Coventry	5,000	16,000
15	Coventry centre	SPRINT Cloverleaf; station track remodelling; ringroad	Coventry	5,000	17,500
16	Solihull UK Central Interchange[5]	Metro extension and other supporting infrastructure developments (plus HS2 not dealt with here)	Solihull	1,300	7,461

[5] The growth at Solihull UK Central Interchange is projected to run from 2017/18 to 2045/46. The growth shown in this report is based on projected growth to 2031 (which equates to 38% of the total housing for the area and 45% of the total jobs for the area).

30. **This analysis suggests that there are a series of supporting infrastructure packages which support the Opportunity Areas**.

- **The Metro package**. This is the East West Link – with development at HS2 UK Central, Brierley Hill, intermediate sites along route, and hooking into central Birmingham.
- **The Sprint package**. This includes A34 Sprint, I54 Sprint, Longbridge to Birmingham Sprint, Warwick University/ UK Central Sprint/A45 Sprint, Coventry Cloverleaf, and Sutton Coldfield Sprint.
- **The road package**. The M6 Toll free at point of use scheme reinforces sites up the classic M6 corridor, and potentially releases new capacity at junctions around the M6 Toll, and along the A38 and A5, with effects in the Black Country, Lichfield and North Warwickshire. Also required is the Wolverhampton and Coventry Ring Roads, and other supporting road developments at UK Central.
- **The rail package**. Snow Hill and the Camp Hill Chords create new stations and reinforce the central Birmingham office core. Also required is Walsall Gateway, Walsall to Wolverhampton Rail and Coventry Track Remodelling.

Figure 0.4 Potential opportunity areas and supporting transport packages



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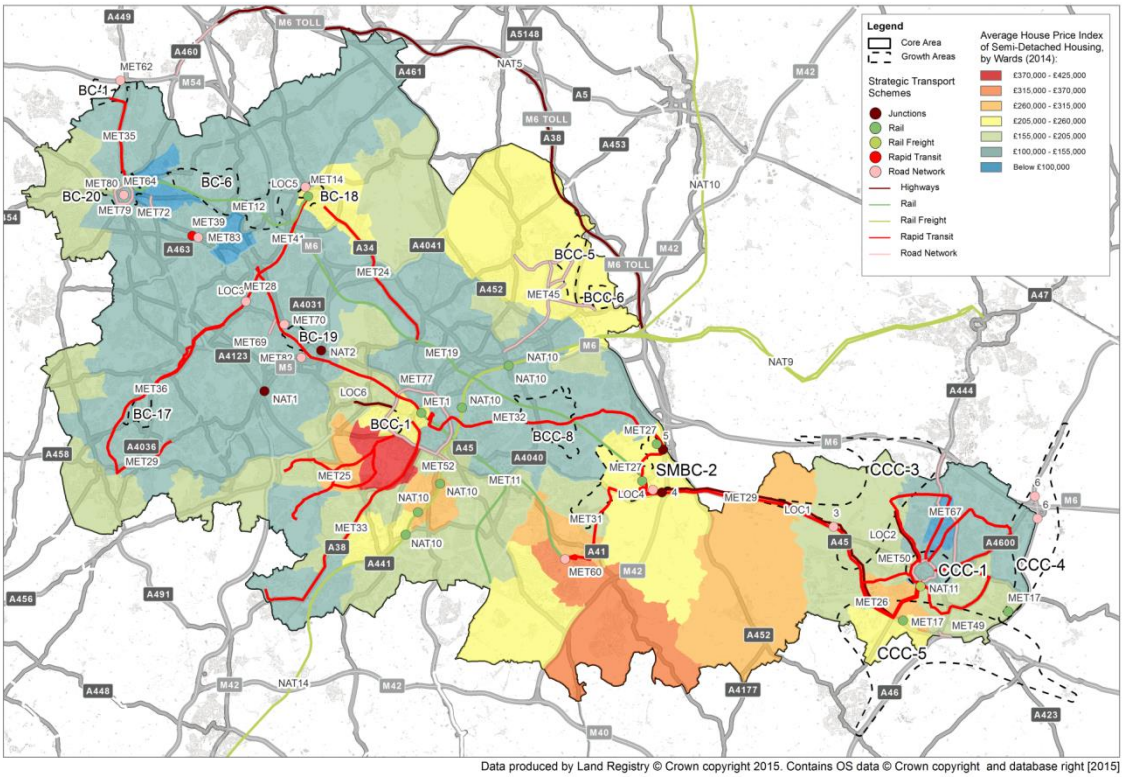
31. **Even with Opportunity Area shortlist, the CA will need to prioritise effort on its Opportunity Areas.** The objective must be to set up self-reinforcing development processes which will operate with minimal state support. That might tend to suggest starting with the Opportunity Areas which are nearest to market viability, or offer

major wider strategic benefits. Figure 0.5 shows the broad relationship between the Opportunity Areas and housing viability.

Figure 0.5 Potential opportunity areas and supporting transport packages, showing house prices (provided as a development viability proxy)



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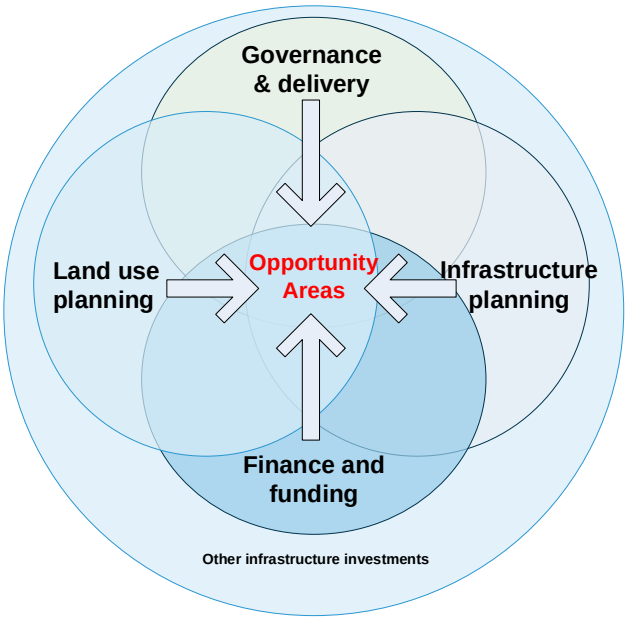
32. **Other strategic work could be usefully carried out by the CA** on reviewing demand management strategies (including smart cities work), freight consolidation, HS2 construction logistics strategies, system resilience, and integrating with Highways England economics work.

Getting change delivered

33. **Having arrived at an agreed list of OAs, the CA will need to build up a package of governance, land use and infrastructure planning, and funding and financing support**. The objective must be to create development momentum at the sites.

Figure 0.6 Focusing effort around the Opportunity Areas



34. **Infrastructure and land use planning is likely to need focused work**.

- **Opportunity Areas should be supported by a planning framework**. In the West Midlands, Area Action Plans are frequently used. These should sets out the type and form of development sought, a development trajectory, and a high level outline of the supporting infrastructure, land assembly and land remediation necessary to deliver the site.
- **Opportunity Areas should be supported by a Development Infrastructure Funding Study** (DIFS). London experience has shown that a DIFS encourages and enables co-operation between public and private sector actors on infrastructure requirements, costs and funding. The process increases market confidence and de-risks investment.

35. **A strong delivery focus will need to be brought to bear by the CA**.

- **A 'Delivery Roadmap' would be helpful for each Opportunity Area.** It would be a very practically orientated project plan that would help to get delivery and infrastructure actually in place. It would understand real-life issues on the critical path, and how to overcome them; understand risks and dependencies; clarify project sponsors, project managers, and develop implementation links between public and private sector.
- **Utilities delivery could be run through a Strategic Energy & Utilities Delivery Group**. The Group could manage information flows to provider companies, co-ordinate any upstream reinforcements, and help to organise finance for up-front infrastructure costs.

36. **Funding and financing will need to be brigaded around the Opportunity Areas**.

- Opportunity Area delivery can be integrated with emerging CA Land Commission, Investment Strategy and Revolving Funding streams. There is likely to be strong demand for direct remediation support grants.

- **Enterprise Zone status and TIF funding** could be drawn in behind the Opportunity Area strategy.
- **Other funding streams (such as Starter Home Funding and Home Zones) could be integrated into Opportunity Area delivery.**

Looking to the longer term

37. **Evidence from elsewhere – including Manchester, Boston and London – suggests that there is real value in creating a joint approach to policy development and implementation** which involves a conversation between public and private sectors and wider civil society. In effect, this would represent the creation of a policy network which allows different ideas to be combined in innovative, ambitious ways that work for the West Midlands.[6] [7]

38. **There is currently no document which sets out futures thinking or horizon scanning for the West Midlands**. One would be helpful. This would not be a statutory document, but would orientate public and private investment and set out the shape of development across the CA area over the next 20-30 years. Such a document could an output of the policy network set out above.

39. **One concern may be to help to balance growth in the West Midlands.** Current patterns of growth see particularly strong development in the centre and east. The western areas of the West Midlands may see gradual relative erosion in their growth potential if action is not taken.

40. **Alternative scenarios could be developed to adjust this pattern. One alternative scenario might involve revisiting the concept of the Western Orbital**. The objective of the scheme would be to relieve the urban parts of the M5 and M6 through the Black Country, opening up development opportunities along those routes. The current unreliability of the M5 and M6 create significant risks for investors, with the result that the Black Country's development is held back. Clearly, there important environmental objections which would need to be held in balance.

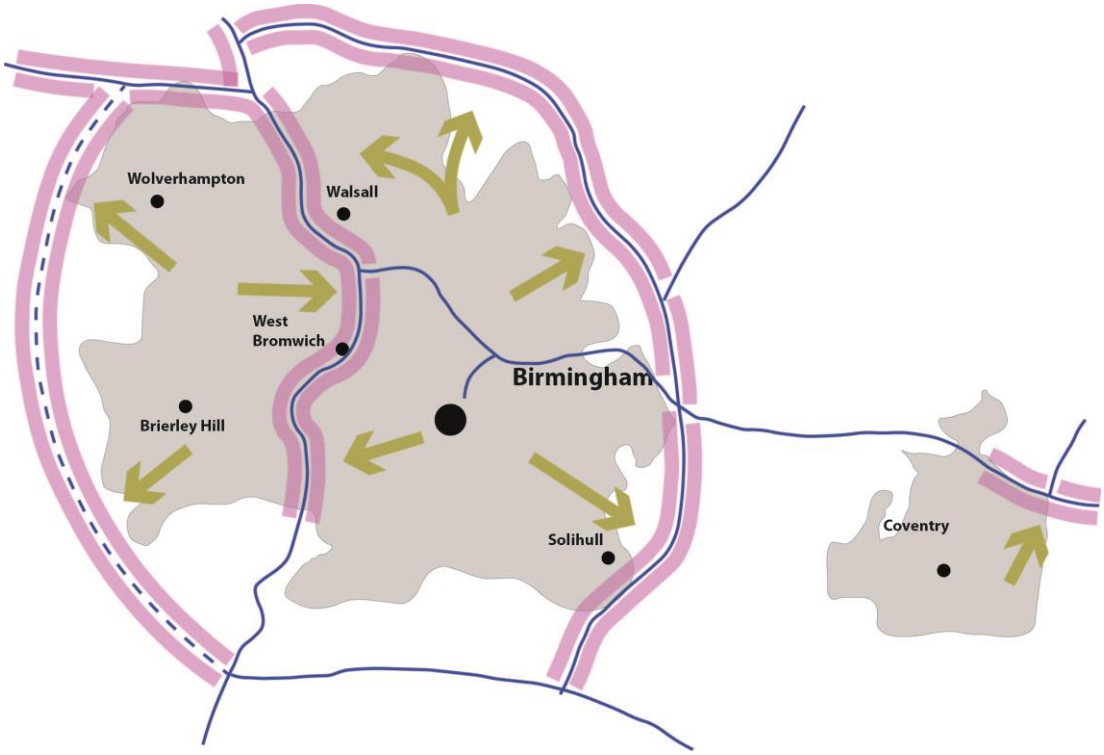
41. **The West Midlands should aim for a step change in service frequency and capacity on public transport**, strengthening the both the office core and the wider area. To implement this, the CA may need to have some control over the operations of the wider network. Further work is needed to understand the exact mechanisms to enable the CA, or allied body, to have control of the network.

42. **Together, these scenarios might amount to an 'inside out' and 'outside in' approach.** We advance this scenario as an example of the scale of thinking that the CA may wish to pursue in future. This scenario might see the provision of a ring of advanced industrial sites on the peripheral transport networks (potentially on junctions on the M6T, M42, M54 or even a possible Western Orbital). These would provide investors with the transport connections that they seek, and represents the 'inside out' element of the strategy.

[6] Charles Leadbeater: *The Era of Open Innovation*

[7] National Endowment for Science and Technology and the Arts (2012) *Plan I* (73)

Figure 0.7 'Inside out' scenario



43. Critically, this strategy would need to be balanced by an 'outside in' element to ensure that residential demand picked up any surplus employment sites, potentially using site remediation and infrastructure investment as a tool.

Figure 0.8 'Outside in' scenario

1 INTRODUCTION

Study objectives

1.1 This study attempts to understand how the West Midlands Combined Authority (CA) might use infrastructure investment in the West Midlands to maximise the delivery of jobs and housing development.

1.2 This objective makes our report different to a 'classic' infrastructure planning document which is found as part of a Local Plan evidence base. These evidence bases take housing and jobs growth, and work out how to provide sufficient supporting infrastructure. This approach is perfectly sensible, but can be reactive: it tends to see infrastructure investment as a response to growth.

1.3 This study has a different perspective. Although we adopt important elements of this 'classic' approach, we start from the principle that infrastructure investments can *create* and *reinforce* new growth opportunities, rather than simply react to them.

1.4 This approach is particularly important in the West Midlands, because new infrastructure plans are creating precisely these types of new opportunities. HS2 is one example: it might materially change the economic geography of the region. The new possibilities created by rethinking the M6 Toll, or from investing in new East-West metro links, are other examples. Each of these projects might create new growth opportunities for an area, and it is these opportunities that we wish to capture in this study.

1.5 Our approach allows us to think proactively about how infrastructure investment can be used to stimulate the economic future that the CA wishes to see for its area. This means that we can suggest new projects and make recommendations on the next steps in a way that a typical planning evidence base cannot.

1.6 Simply put, we want to understand how the CA can add value through the intelligent coordination of infrastructure investment and land use planning. The CA has an opportunity do things differently, and better, given the opportunity of seeing development and infrastructure provision as an integrated cross-border problem and opportunity. We have been careful to build our thinking around an understanding of the distinctive economic conditions of the West Midlands itself, and understand how infrastructure might help deliver the changes sought.

Geographical scope

1.7 This study will cover the West Midlands CA area. By CA, we mean the following authorities which were constituent members of the CA at the time of commissioning in April 2015. These were:

- Wolverhampton City Council;
- Walsall Metropolitan Borough Council;
- Sandwell Metropolitan Borough Council;

- Dudley Metropolitan Borough Council;
- Birmingham City Council;
- Solihull Metropolitan Borough Council; and
- Coventry City Council.

1.8 The focus will remain on the implications for infrastructure within the CA area. It is possible that the infrastructure needs of the CA area may arise from change either inside or outside the boundary set out above – meaning that growth *outside* the CA area might give rise to a need for infrastructure *within* the CA area.

Thematic scope

1.9 We have set out above that this is a strategic report, which does not attempt to cover the same ground as an Infrastructure Plan produced to support a Local Plan evidence base. We are therefore particularly concerned with inter-authority cross-border networks such as transport and utilities, with a view to the growth and economic development of the CA area. We also focus on how other infrastructure investment opportunities might be maximised and how change might be delivered on the ground.

1.10 We do not pursue other infrastructure categories. Infrastructure which is internal to a local authority area (such as education) will be very important, but is better dealt with at local authority level. The CA adds no value by becoming engaged.

Study method

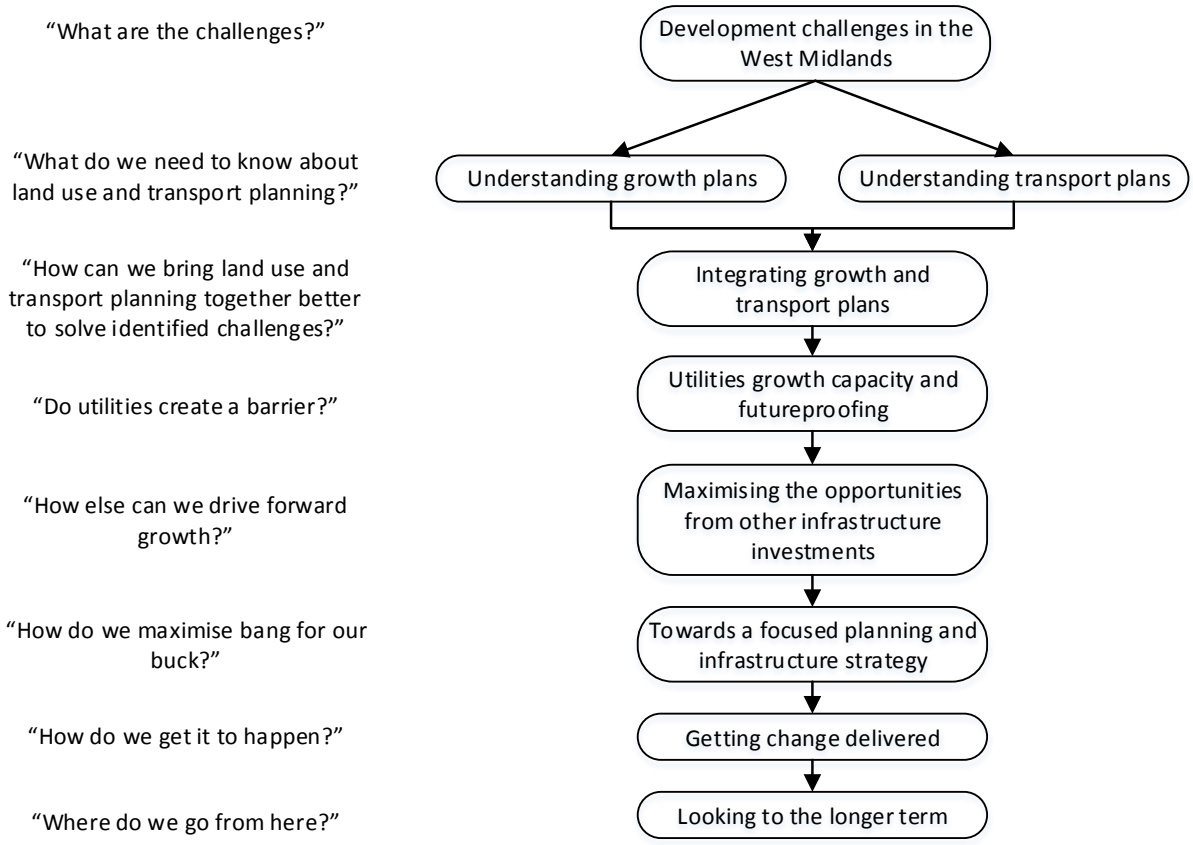
1.11 As we have set out above, we seek to understand how the CA might use infrastructure investment in the West Midlands to maximise the delivery of jobs and housing development.

- We start by identifying the development challenges faced by the West Midlands. Only by having a clear idea of these challenges can we hope to arrive at an efficacious response. We concentrate on land remediation. The topic is fundamental to the delivery of the CA's objectives, and must be considered alongside infrastructure to provide a coherent response to the questions of economic development and growth delivery.
- We then analyse housing and jobs land use plans from the CA's constituent local authorities.
- We take uncommitted infrastructure plans from the ITA, Network Rail, Highways England, and HS2, by phase.
- We then combine these elements. We seek to analyse how these plans might best reinforce the others to maximise positive impacts.
    - Firstly, we look at transport schemes to identify which transport schemes appear not to have supporting land use plans, and therefore where additional land use planning might allow additional benefits to be released.
    - We then reverse this process. We will use the analysis of land use to identify which areas do not have obvious supporting transport infrastructure plans,

and where additional transport intervention might, on the face of it, be required to help bring forward the site.

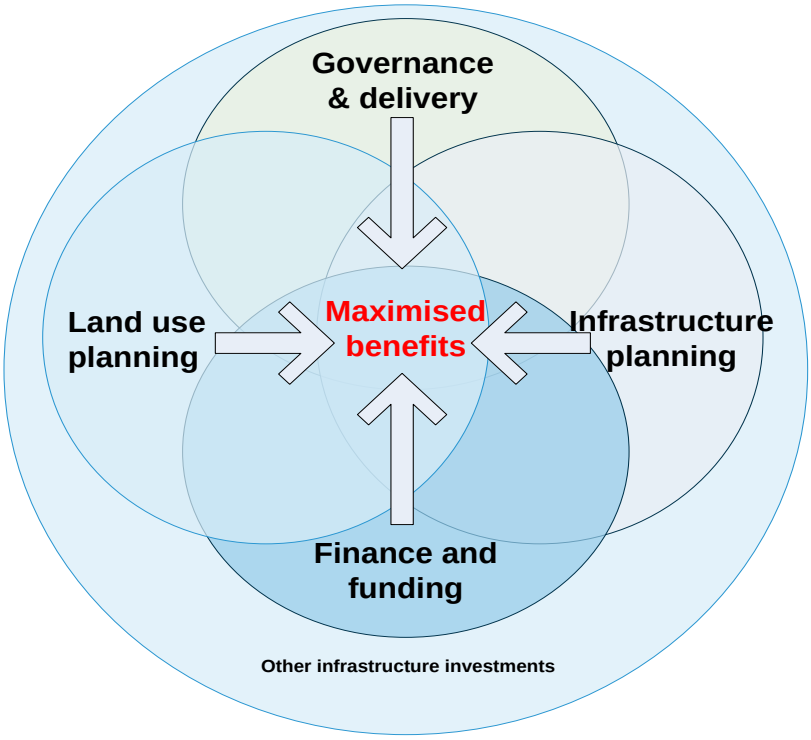
- We look at utilities delivery, and the extent to which sufficient utilities investment is in place to allow capacity for growth in the CA area.
- We look at how opportunities from land use and transport interventions can be maximised by implementing other infrastructure interventions on an area basis and the CA area-wide basis.
- We look at how the CA might best align the governance and delivery of planning and infrastructure to reinforce the delivery of housing and jobs sites.
- We then take a high level look at how infrastructure finance, funding and management might be marshalled to reinforce the delivery of housing and jobs sites.

Figure 1.1 Approach to this study



1.12 Our general theme across the study is to ensure that each element overlaps and reinforces the others, maximising the ability of the West Midlands to deliver housing and jobs growth (see Figure 1.2).

Figure 1.2 Maximising benefits from land use planning and infrastructure planning



1.13 We cannot use this work to make definite recommendations that additional transport provision will be necessary or land use plans should be amended. This will rely on the individual circumstances of each site. However, this work creates a view of the sites and schemes in which the chances of success are highest, and suggests possible approaches and mechanisms that the CA could investigate to maximise the outputs of infrastructure and land use.

2 DEVELOPMENT CHALLENGES IN THE WEST MIDLANDS

Introduction

2.1 In this chapter, we look at the development challenges in the West Midlands, and the extent to which infrastructure can help bring growth forwards.

Figure 2.1 Report stages and objectives

The Combined Authority's objective

2.2 The Combined Authority's emerging core objective is to achieve a sustainable growth in Gross Value Added (GVA). It must achieve this in the face of strong competition in global markets.

The West Midlands economic context

Strong economic and population growth translates into strong demand for housing and employment land within the CA

2.3 Population and economic growth is a fundamental driver of infrastructure demand. The West Midlands is a growing area. Across the CA area, around 10,000 new

homes are needed every year.[8] Around12,000 additional jobs are projected every year, and more are realistically expected if known influences such as HS2 are added in[9].

Plans have been developed to deliver growth across the CA, but focus on each plan area and not on CA wide delivery

2.4 The individual local authorities have either developed, or are developing, Local Plans to deliver housing and jobs growth in their area.

2.5 Delivery of the growth in the Local Plans is supported by a number of other mechanisms and plans including Area Action Plans (AAP), specific housing funding[10], and LEP Strategic Economic Plans.

2.6 The plans are not comparable, as they tend to have different buildout timescales, and do not always consider the authority as part of a bigger area very effectively.

CA growth will need some greenfield release, but delivery depends on brownfield sites

2.7 The land use planning response to identified demand is only partially worked out at the moment, because there is an overall shortfall of identified housing and employment sites to accommodate the projected growth. [11]

2.8 Growth in the Local Plans is of a scale to need some green field release within the CA area. The delivery of the Local Plans also depends on the full reuse of available brownfield sites in order to regenerate sites and avoid an inefficient use of greenfield sites.

Many brownfield sites across the West Midlands need remediation – and so are not viably developable

2.9 On their own, low sales values damage the viability of development. But in the West Midlands, there is frequently a further factor that damages development viability further. The West Midlands' ex-industrial heritage means that sites are frequently relatively expensive to develop: previous uses means that land has to be remediated. This can be costly, and also represents a significant risk to developers, because it can be difficult to buy land in full knowledge of remediation risks.

2.10 This is a key risk for the West Midlands. It creates a shortage of locations in which investment can take place. This reduces the ability of the economy to respond to economic change and so generate productivity growth.

[8] PBA Strategic Housing Needs Study Stage 3 Report Working Draft June 2015. Projected need per annum ONS/PBA 2012 Table 2.2. Figure for Coventry from Coventry and Warwickshire and South East Leicestershire Economic Prosperity Board 21st November 2014 Agenda Item 7

[9] Policy-off figure based on annual jobs growth between 2011 and 2031, extracted from Experian June 2015.

[10] Dudley and Sandwell were shortlisted for the Housing Zone pilot scheme.

[11] PBA Strategic Housing Needs Study Stage 3 Report Working Draft June 2015.

Brownfield sites must be made more viable, or too much growth will be on greenfield and greenbelt land

2.11 The National Planning Policy Framework (NPPF) states that there should be a supply of housing sites sufficient to cover five years'-worth of housing build-out. These sites must be viably 'developable' – which, broadly defined, means that that a developer should be able to bring the sites to market, and make a commercial return.

2.12 If no such sites are available, then developers may be successful in appealing to the courts for permission to develop unallocated sites. These pressures will be hard to resist under the NPPF.

2.13 The viability of brownfield sites is important to the West Midlands conurbation as a whole. Although green belt sites retain strong protection, this process will tend to put greenfield sites on the rural fringes of the conurbation at risk of development, and the urban and industrial areas of the conurbation at risk of hollowing out and dereliction.

2.14 Brownfield sites in Birmingham and parts of the Black Country have the ability to accommodate a great deal of the housing and employment growth projected for the West Midlands. There is also a political appetite for accommodating this change on brownfield sites. All will prosper if delivery on brownfield areas is successful.

Without intervention, there may be a gradual shift eastwards in economic gravity

2.15 Although there are clear strengths in the economy of western parts of the West Midlands (not least at i54, where there have been major Jaguar Land Rover investments), current patterns of growth see particularly viable development patterns emerging in the centre and east of the West Midlands.

2.16 Growth in the centre and east is to be welcomed. Nothing should be done to slow it down. But if the western areas of the West Midlands cannot keep up, there may be a gradual relative position of the western areas which may itself prove self-reinforcing. If demand falls in western parts of the West Midlands, then development sales prices fall. This matters a great deal, because higher sales values are needed to cover the relatively substantial land remediation costs which frequently form a barrier to the development processes on brownfield housing and employment sites in these areas.

Sustainable planning for growth in the West Midlands therefore depends on getting brownfield land development processes fixed

2.17 If Local Plan allocations are to be delivered, brownfield sites across the West Midlands area will need support to make development viable and attractive.

2.18 Infrastructure has a key role to play in this and could make some brownfield sites more attractive for developers.

Can infrastructure provision help solve development problems in the West Midlands?

Transport infrastructure can help to raise demand and help to trigger a viable development marketplace

2.19 Rising demand can create rising sales values, assisting the development process. Infrastructure provision can be used to increase demand in an area.

2.20 We undertook a brief literature review (attached as Appendix A) to investigate the relationship between transport infrastructure, property prices, and land development. We did not look at other transport impacts, agglomeration or efficiency. The review would tend to suggest that transport provision can have a role in creating new site opportunities, particularly when existing sites are constrained by a lack of transport provision. We have summarised findings below.

- Rosewell points out that identifying the payback to any kind of infrastructure is surprisingly difficult.[12] Infrastructure projects are general purpose technologies - and separating their impact out from everything else is analytically very awkward.
- The literature review shows that we cannot reliably quantify an effect of transport investment on sales values of development (or consequent land values), but that benefits would be broadly positive in a growing economy such as the West Midlands'.
- The review suggests that there would be considerable value in ensuring that sites were available in order capture the growth arising from investment. This is because economic growth is only generated by transport investment if the other ingredients for growth are in place.[13] One of these ingredients includes the availability of suitable site locations.[14]
- Rail projects tend to have a positive effect on residential property prices, although the size of the effect varies considerably depending on the type of residential unit and its proximity to provision. No rail effect on commercial property prices has been found. We therefore included rail projects in our review as a broad category in principle, but then excluded rail projects that did not seem likely to release site development opportunities (eg a number of national and regional interventions were unlikely, in themselves, to create the local regeneration effects we are looking for, because these are focused on system-wide transport impact improvements).
- Road projects tend to have a positive effect on property prices, although the effect in prices may depend on distance to the project (and the effects can vary over time). The LSE found that road projects also have a positive effect on

[12] Rosewell (2013) (52)

[13] Table 3.1 Llewellyn Davies, Bannister, Hall for DfT& ODPM: *Transport and City Competitiveness: A Literature Review*

[14] Llewellyn Davies, Bannister, Hall for DfT& ODPM: *Transport and City Competitiveness: A Literature Review* (13)

productivity. House prices immediately adjacent to roads may fall. Prices nearby new roads, but not immediately adjacent, tend to rise. There are no findings on the effects of roads on commercial values, but productivity rises in industries which use roads intensively. We included road projects in our review in principle, but again excluded road projects that did not seem likely to release site development opportunities.

- Tram and bus schemes: the LSE found no high quality evaluations that provide evidence on the impacts of trams and buses schemes (although that does not mean that such schemes produce no impacts). We included tram and bus projects in our review in principle, given that, on the balance of probability, some effects were likely. They may, however, be relatively dilute. We took out projects such as bus station improvements, when these projects appeared unlikely to impact on site development.
- The LSE found no high quality evaluations providing evidence on the impacts of cycling and walking schemes. Although that does not mean that such schemes produce no impacts, we decided that, on the balance of probability, that such schemes were likely to have only a tangential effect on site deliverability. They may, however, have a valuable impact on the ability of the CA area to attract and retain skilled labour, when seen as part of an overall package of measures.
- The literature review also showed that the benefits from earlier transport projects were lost because a complementary policy package did not accompany investment.

Direct land remediation policies are likely to also be needed, and should be seen as a category of infrastructure activity

2.21 Transport provision alone is unlikely to be sufficient to repair development viability on many brownfield sites. To be clear, we should point out that transport projects should have transport objectives: they should not be seen as site viability projects. (They would be very inefficient ways of making sites viable). However, our objective should be to fully capture the spin-off benefits which arise from them.

2.22 More direct action to deal with land remediation is likely to be necessary. We see this as an essential part of an integrated programme. Along with other RDAs around the country, Advantage West Midlands (AWB) had an ambitious programme of acquiring and remediating contaminated sites. AWM justified this programme by showing that in parts of the West Midlands values were too low for developers to take on the risk of contaminated sites. Sites were therefore remediated and then sold as 'clean' land, frequently with a development masterplan that was intended to raise values at the site. This programme of work has been very much curtailed in recent years with the closure of the RDAs. This decision perhaps justified during recession, given that development volumes collapsed. However, the need for the programme is re-emerging given the ongoing emphasis on brownfield areas in development plans. Nationally, the Government has set a target to release enough land to build 150,000 new homes before 2020. This is clearly a very challenging target, but the brownfield focus will be familiar to the West Midlands.

2.23 Success in developing brownfield sites is an issue of critical strategic importance to the whole of the West Midlands. If funding cannot be obtained from the WM, then the area has a powerful national case for funding. The issue is certainly of sufficient scale to attract national attention.

Wider economic success will also be important to improve site viability

2.24 Broader productivity improvements will be important to get values up in the West Midlands. One of the main reasons why residential values are low is that wages in the area are low. Productivity in the area must be increased – meaning that broader economic development themes, particularly around skills development, will remain very important.

3 UNDERSTANDING GROWTH PLANS

Introduction

3.1 Our objective in this chapter is to obtain a CA-wide view of growth to 2031.

3.2 We also wish to understand the locations in which growth is likely to be more difficult to get delivered. These are likely to be areas in which development is less economically viable. We wish to understand these locations because they indicate where a higher level of intervention may be important.

Figure 3.1 Report stages and objectives

Our approach

We obtained a consistent view of planned growth

3.3 This study demanded that we take a consistent, area-wide view of growth so that the analysis would be possible across local authority boundaries.

3.4 Obtaining this view has been a complex process. Different local planning authorities are at different stages in the planning process. The Black Country CS was adopted in February 2011 and a review is planned to commence in 2016. In the meantime work is being progressed to deliver aspects of the plan through the SEP delivery plan,

and work is being undertaken by the Black Country Place Group on pipeline project identification. Birmingham's Local Plan, on the other hand, has recently been developed in draft and has been through examination. Solihull's Local Plan is current under review following a High Court challenge, and a new Local Plan is being drawn up for Coventry after the previous version was withdrawn.

3.5 Additionally

- Plans run over different time periods;
- Plans denominate jobs growth in different ways; and
- Plans apply a different level of detail to the geographic description of growth.

3.6 Getting a consistent basis to work from meant we had to make a number of assumptions and further calculations, some of which create their own risks.

- We have taken growth from existing Local Plans and Core Strategies where possible, taking into account information on completions if available. We did this in order to maintain consistency with the published position in each local authority.
- Whilst we have worked with existing Local Plans and Core Strategies where possible we have added in addition to growth where we are confident of scale and location. In the case of Solihull we have added on growth at the UK Central Hub. This growth (in particular, that at the UK Central HS2 Interchange site) was not anticipated at the time the Solihull Plan was published. However, plans for significant growth at this site are now well advanced, and have been included in this study. We have also taken the view directly from Coventry City Council on projected growth for Coventry, extracted from the Coventry and Warwickshire Strategic Economic Plan and Strategic Housing Market Assessment.
- However, it is important to understand that the housing and job sites allocated in plans might be an underestimate. We have not anticipated additional growth which is expected to be needed to cope with projected household growth revealed by recently published demographic data. This recently published data suggests that the Birmingham Housing Market area, which operates over a different geography to the CA, will need to find land for an additional 40,000 homes in the period to 2031 (the shortfall is in great measure driven by Birmingham itself). These findings, and others like it, will have significant implications for future land use planning across the CA area.
- We have extrapolated jobs and housing growth to 2031, if plans end prior to that date. These numbers have been agreed with each LA.
- We have converted jobs to floorspace, or vice versa, using industry standard floorspace/jobs density multipliers. [15,16] Given the level of information available from the plans, we have kept these conversions straightforward and have assumed only industrial (general and light industry), office and high street land

[15] Employment densities guide, 2nd Edition (2010), https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/378203/employ-den.pdf [Accessed 7 August 2015]

[16] Standard density values of 6000sqm per Ha for office space, and 4000sqm per Ha for industrial space.

uses. These conversions have been agreed with the local authorities where possible.

We obtained an overview of strategic growth locations

3.7 Growth in each area over the plan period will depend on thousands of individual sites coming forward.

3.8 Attempting to deal with each in detail would obscure the outputs of the study. We have sought ways of getting above the fine grain of the detail in each LA area, in order to clarify the infrastructure planning issues.

3.9 We worked with local authorities to do this, and pulled together a series of strategic growth locations that would drive forward the plan.

- In the Black Country and Birmingham these areas match those defined in the Black Country Core Strategy and Birmingham Plan respectively.
- Solihull is based on grouping of individual growth sites in the Local Plan and growth plans for UK Central.
- Coventry's areas were suggested by Coventry City Council.

3.10 We have provided our detailed authority-by-authority findings at Appendix E.

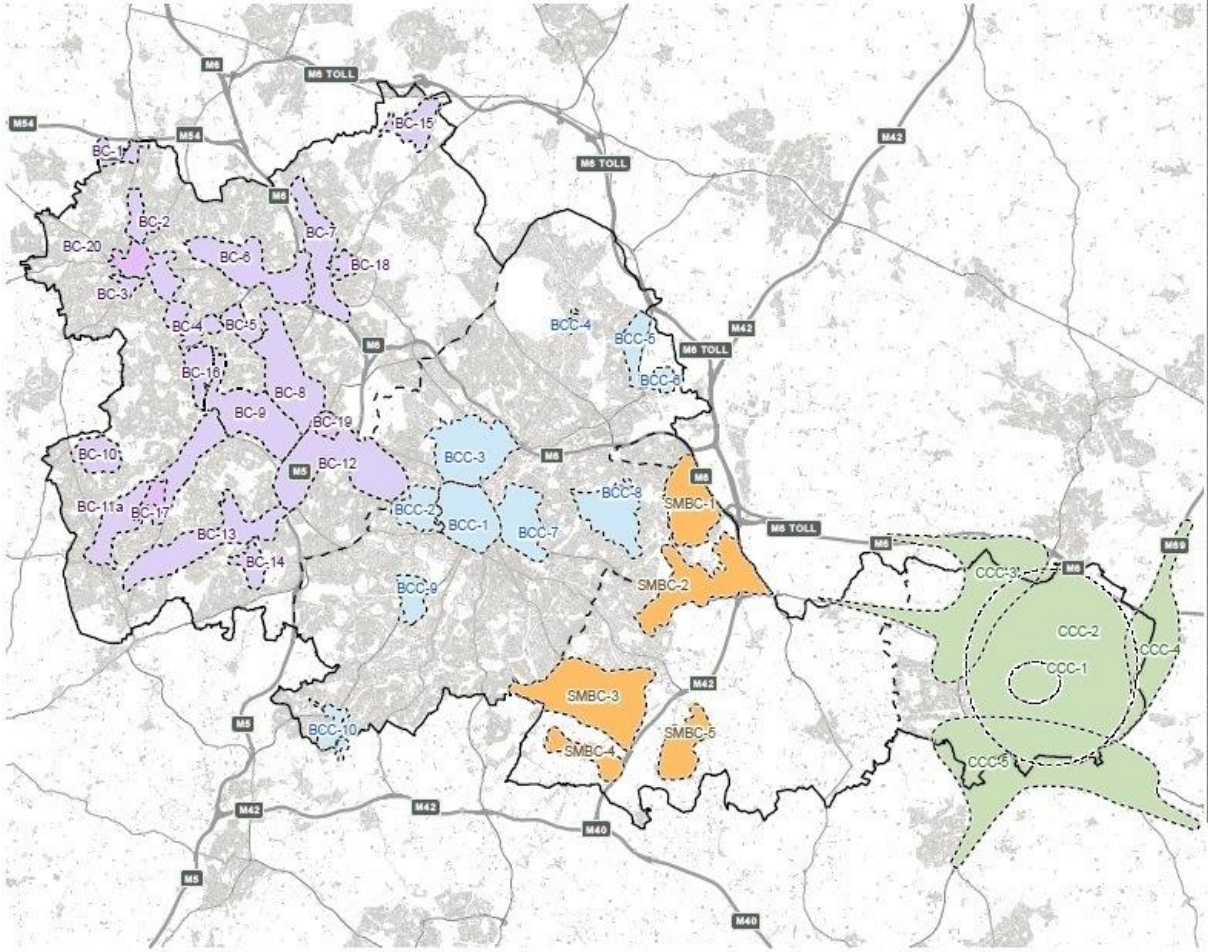
Growth plans at Combined Authority level by phase

3.11 We combined the pictures of growth at individual local authority level into a single picture which shows growth areas for the CA. The data provides a useful starting point to consider the planned infrastructure investment. This picture is a snapshot in time based on the information available to us and will change.

3.12 Figure 3.2 and Figure 3.3 shows the growth areas across the CA. In Figure 3.3 the circles show the relative proportions of housing and jobs growth within these areas on a scale that allows comparison between different growth locations.

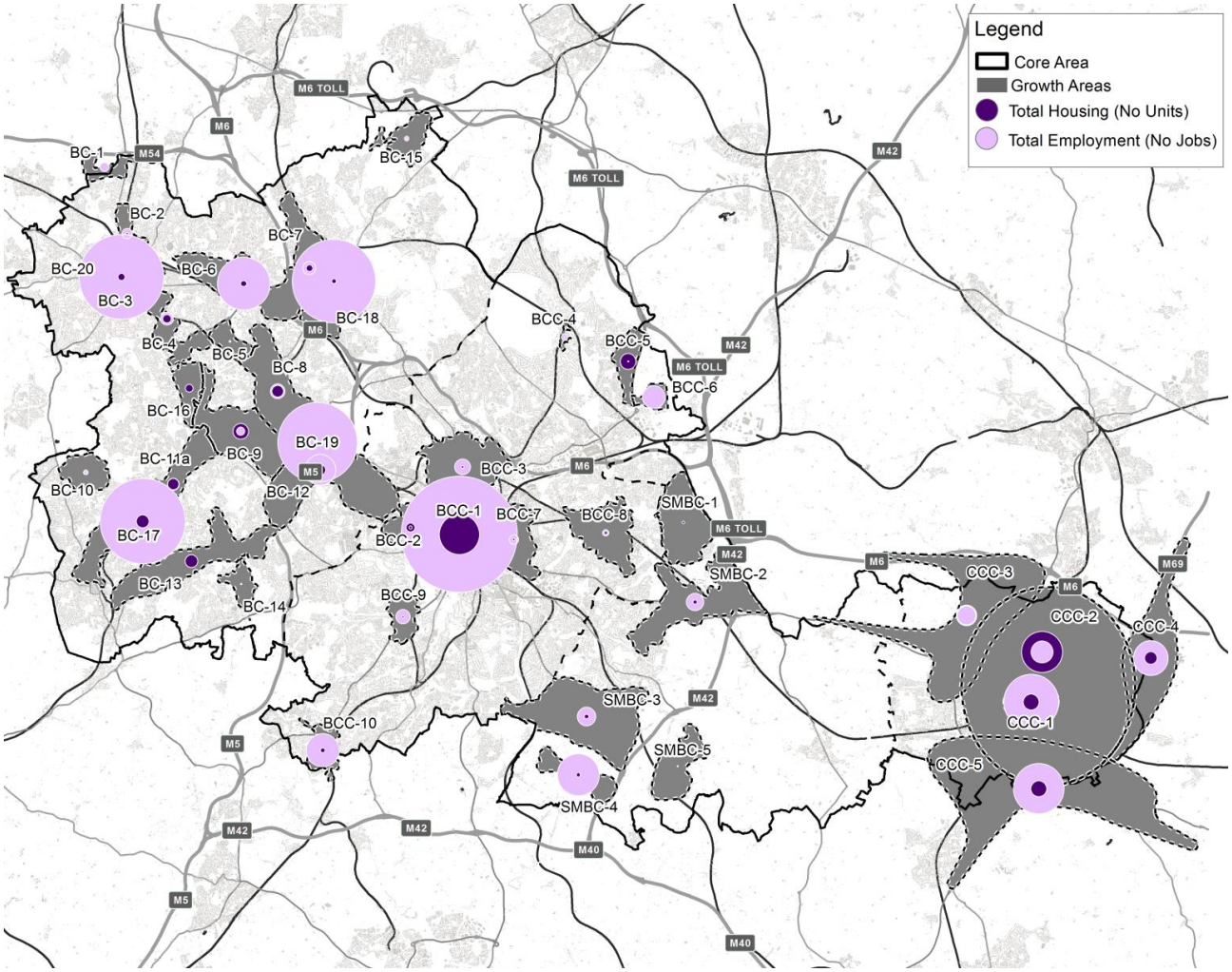
3.13 It is worth noting that the development period ends in 2031. That means that the full growth at some of the longer term sites will not be fully captured in these numbers – notably the UK Central Interchange, which is the location of the new HS2 station in Solihull.

Figure 3.2 Growth areas across the CA to 2031



Area Ref	Area
	Growth Areas
BC-1	Pendeford/ Fordhouses
BC-2	Stafford Road
BC-3	South of Wolverhampton Strategic Centre
BC-4	Wolverhampton - Bilston
BC-5	Loxdale – Moxley
BC-6	Wednesfield - Willenhall - Darlaston
BC-7	Bloxwich - Brichills - Beacon
BC-8	Hill Top
BC-9	Tipton - Dudley Port - Brades Village
BC-10	Penarwell - Kingswinford
BC-11	Dudley - Brierley Hill - Stourbridge and Corridor
BC-12	Oldbury - West Bromwich - Smethwick
BC-13	Rowley Regis - Jewellery Line
BC-14	Coombs Wood- Halesowen
BC-15	Brownhills
BC-16	Coseley - Tipton - Princes End
BC-17	Brierley Hill
BC-18	Walsall
BC-19	West Bromwich
BC-20	Wolverhampton
BCC-1	City Centre
BCC-2	Greater Icknield
BCC-3	Aston, Newtown & Lozells AAP
BCC-4	Sutton Coldfield
BCC-5	Langley Sustainable Urban Extension
BCC-6	Peddimore
BCC-7	Bordesley Park AAP
BCC-8	Eastern Triangle
BCC-9	Selly Oak and South Edgbaston
BCC-10	Longbridge AAP
SMBC-1	Chelmsley Wood
SMBC-2	Airport, UK Central and JLR
SMBC-3	Shirley and Solihull
SMBC-4	Dickens Heath and Blythe Valley Park
SMBC-5	Knowle and Dorridge
CCC-1	City Centre
CCC-2	Urban Growth
CCC-3	North Western Periphery
CCC-4	North Eastern Periphery
CCC-5	Southern Periphery

Figure 3.3 Growth areas across the CA to 2031



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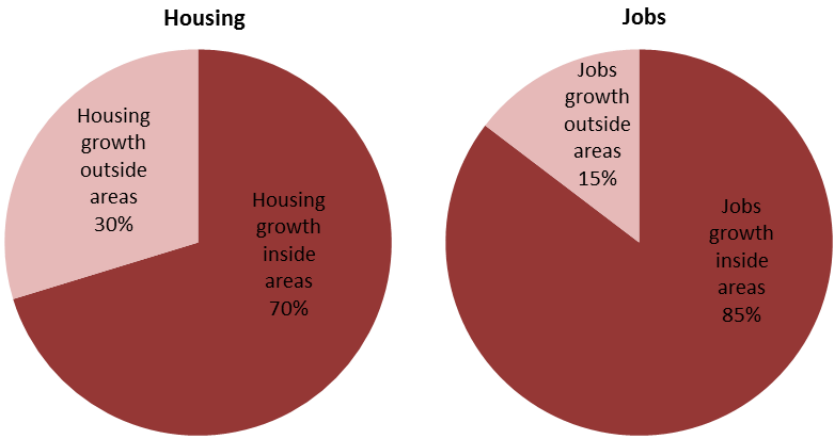
Growth is expected outside specified growth areas but within the CA area

3.14 Of course, not all growth in a local plan area takes place within the growth zones we have defined. Much is distributed more widely across a local authority area.

3.15 The relative balance between growth inside and outside the growth locations is important, because it provides us with guidance on the extent to which we can focus on interventions in specific areas, against more general and dispersed infrastructure measures to support growth.

3.16 We have provided this information at plan level in Appendix E. Below, we summarise at CA level.

Figure 3.4 Housing / jobs proportion inside and outside of growth areas (all CA area)



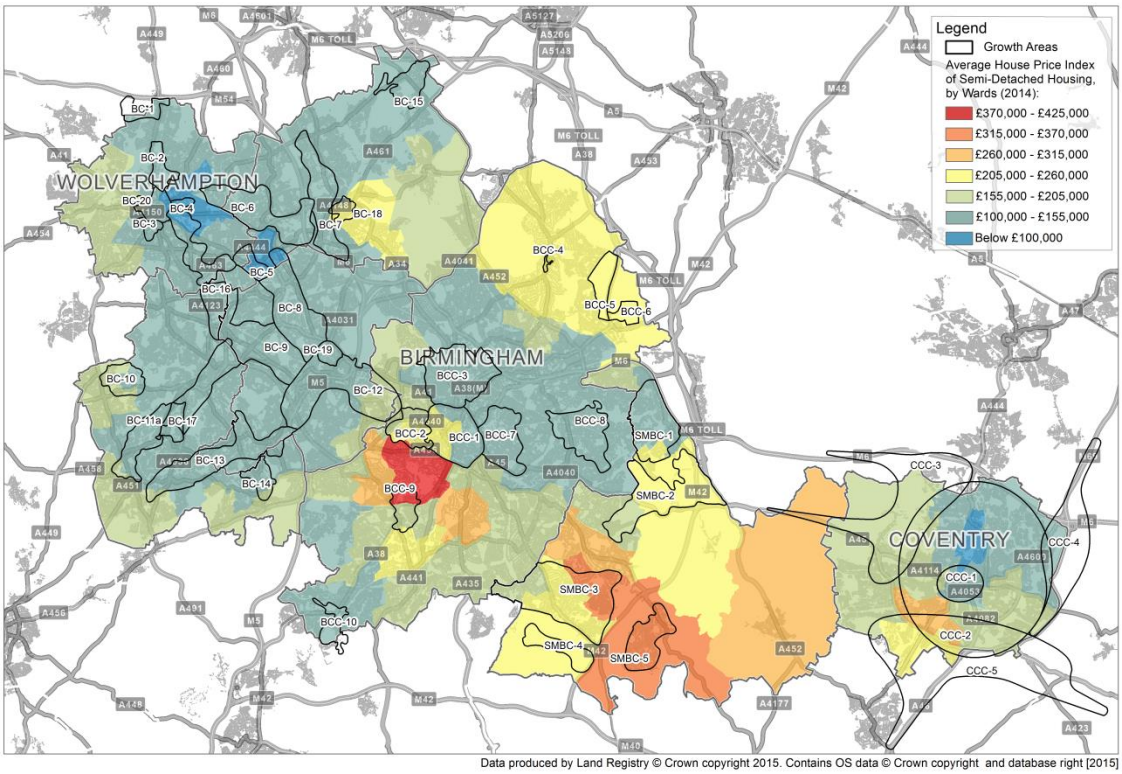
Planned growth is concentrated in lower value areas

3.17 Figure 3.5 shows the strategic growth areas identified against house prices. It shows the broad value contours across the region. We have presented this data on a map because it allows us to understand the broad contours of residential prices against the planned growth zones. Sales prices are a reasonable, though imperfect, proxy for development viability. The map provides us with a broad idea of which areas would tend to have more viable housing developments, other things being equal.

3.18 The map shows that the bulk of development across the West Midlands conurbation is concentrated on areas of relatively low sales prices. This is particularly the case in the Black Country, where the Regeneration Zones chosen in the plan follow the areas of lowest value.

3.19 This planning profile is the logical outcome of a series of Government policy directives. The urban renaissance agenda and PPG3 encouraged precisely this regeneration agenda, and this fed through into planning policy across the West Midlands. Advantage West Midlands and HCA support was available during the first decade of this century to support this policy, but this support is now either more constrained or unavailable.

Figure 3.5 House prices in the West Midlands, showing the growth areas



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Identifying strategic growth areas

Even this 'simplified' picture remains very complex. It remains hard to identify the major strategic opportunities in the West Midlands

3.20 We undertook further analysis to attempt to identify the key sites in the West Midlands. We charted housing and jobs growth, and picked out the largest jobs and housing sites (taking the top 15 in each instance – see Figure 3.6 and Figure 3.7 below).

Figure 3.6 Housing/ jobs growth for each area to 2031 (ranked by housing capacity) with red bar showing the top 15 sites

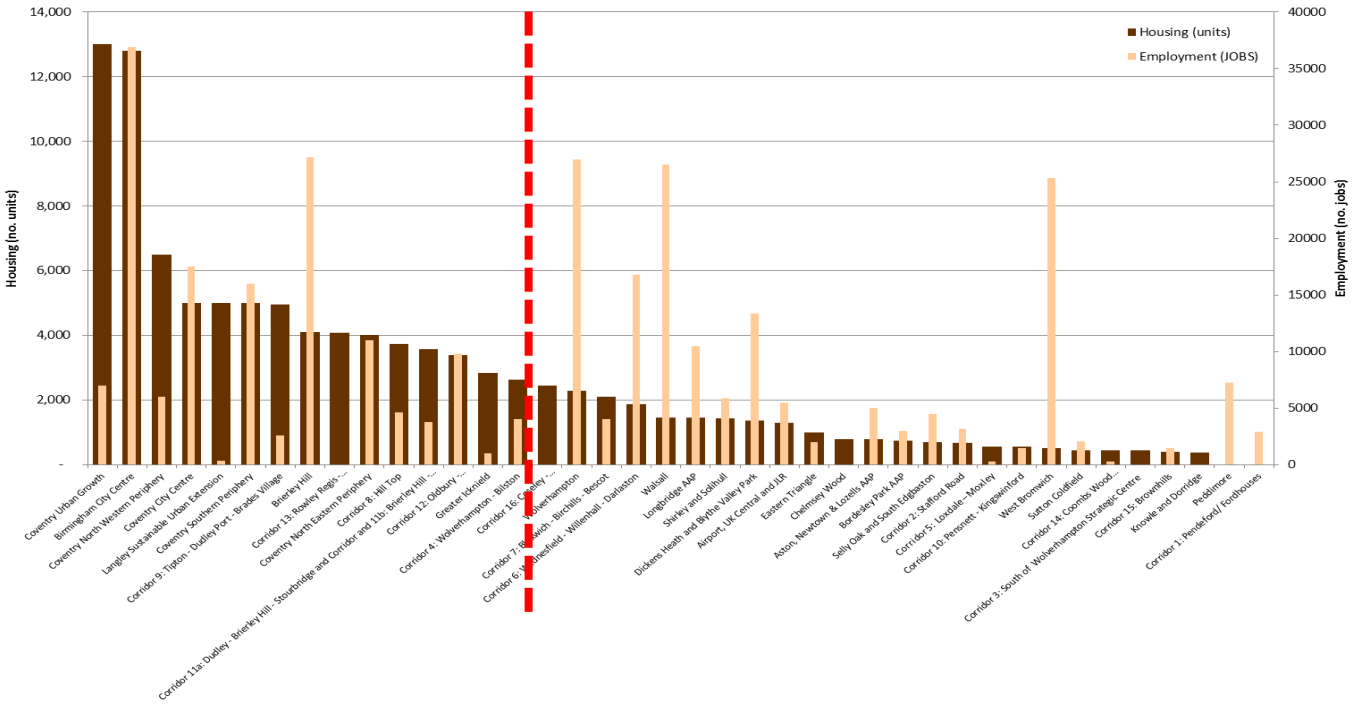
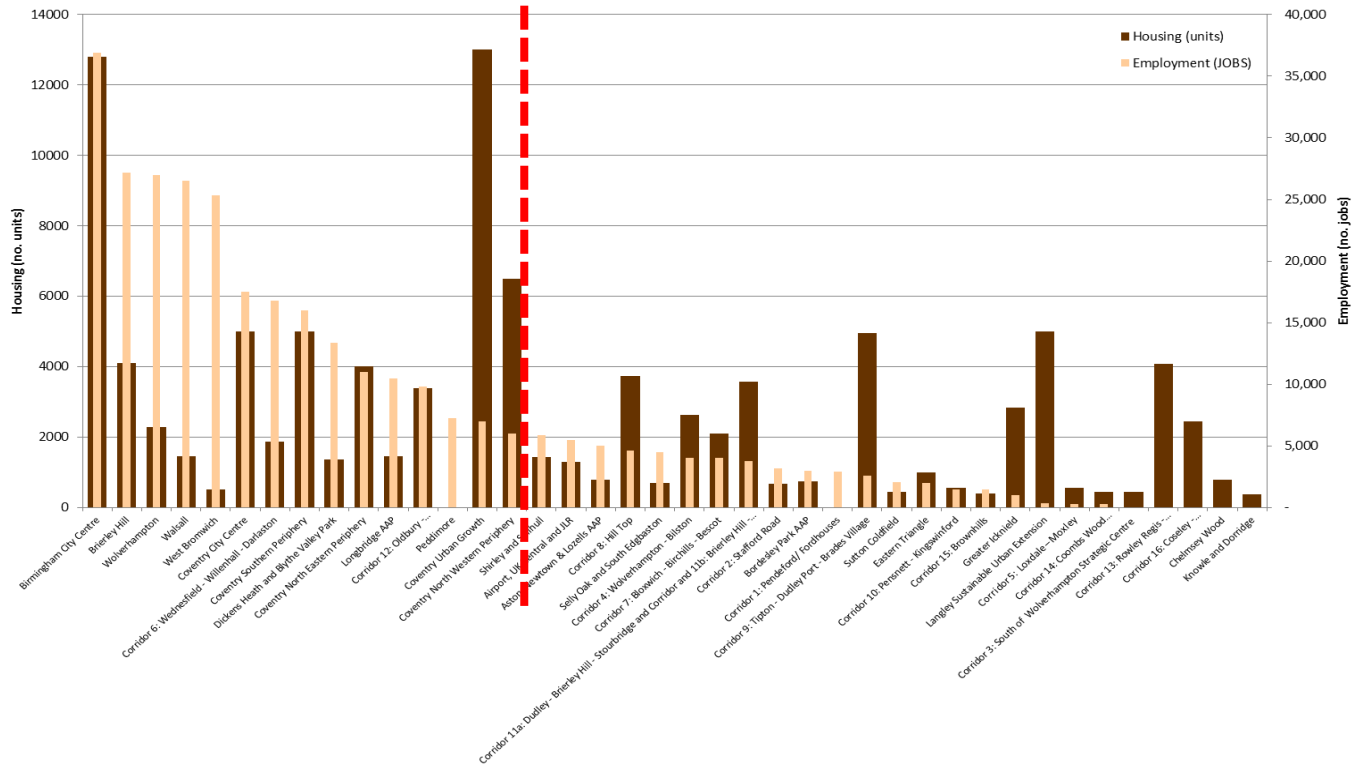


Figure 3.7 Housing/ jobs growth for each area to 2031 (ranked by job capacity) with red bar showing the top 15 sites



3.21 The exercise was helpful in that it showed where the major growth was taking place – but failed to provide a reliable guide to the strategic opportunities available. This is because

- Firstly, the apparent development capacity for each growth area is a function of the geographical size of the catchments applied in local plans. For example, the area with the largest number of homes is titled Coventry Urban Growth, which a very large area covering distributed growth across right across Coventry urban area. Similarly, some of the Growth Corridors in the Black Country plan are geographically very extensive and therefore axiomatically appear to accommodate significant housing and jobs growth. But there is relatively little way of using these designations to focus investor interest or create momentum around particular sites.
- Secondly, size is a poor indicator of strategic importance. For example, the Solihull UK Central Interchange site will be the location of a major new growth pole for the West Midlands. It is the location of a new HS2 stop and strategic housing and jobs growth - but does not feature in a list of the top 15 sites as less than half of the projected housing and jobs growth will be built out by 2031.

Next steps

3.22 This analysis tends to indicate is that

- The focus of planning policy has been to regenerate low value areas. However, this may slow the production of housing and jobs space, particularly in the absence of viability and infrastructure support.
- The West Midlands struggles to pull together a clear, area wide narrative about the most important growth sites in its area. The West Midlands is not currently realising the benefits that could arise from working together as a whole CA area.

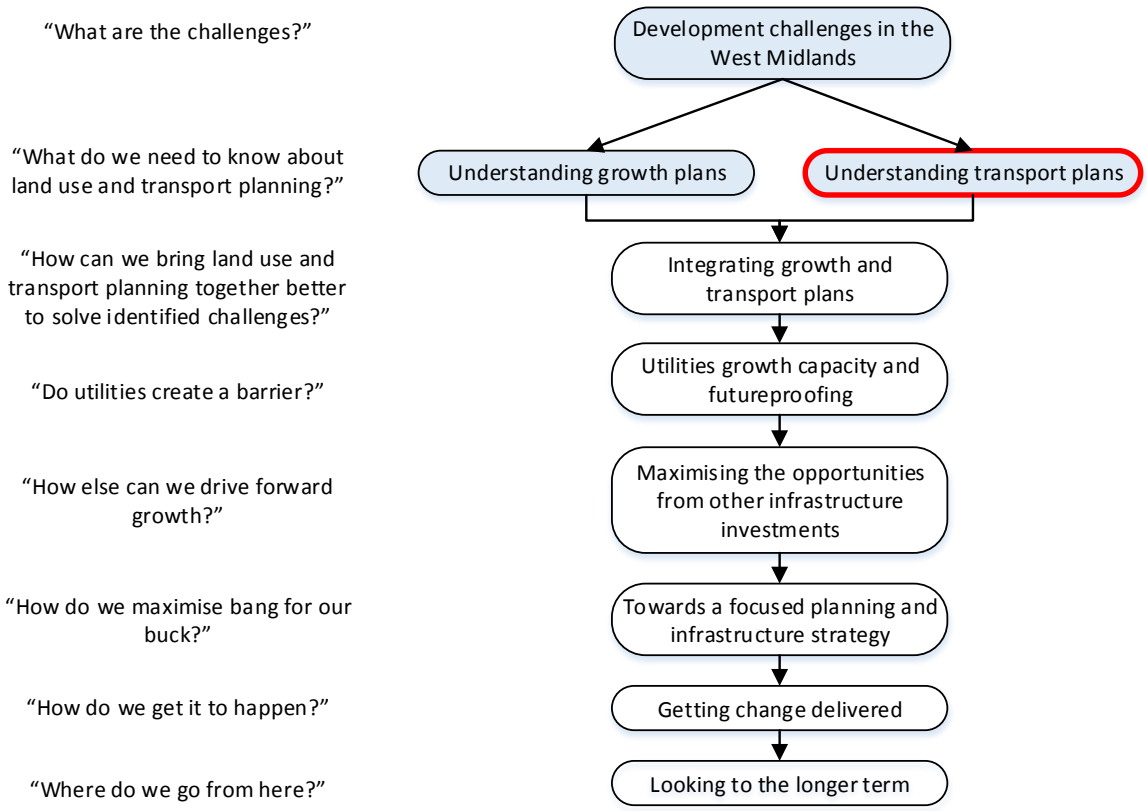
3.23 We have some suggestions about how this may be remedied. We discuss these in Chapter 5, alongside an analysis of transport infrastructure provision.

4 UNDERSTANDING TRANSPORT PLANS

Introduction

4.1 Our objective in this chapter is to obtain an overview of strategic transport plans which might affect the delivery of growth in the West Midlands area.

Figure 4.1 Report stages and objectives



Approach

4.2 Infrastructure investment can have a series of economic effects. Transport infrastructure, for example, can improve business efficiency, notably by travel time savings and reducing trading costs; create agglomeration economies which are created when industries are able to use deep labour pools, access to new ideas, and increased specialisation; improve access to labour and product markets; connected deprived areas to job opportunities; and attract globally mobile investment to the UK. Utilities investment can release new sites for development.

4.3 This report does not calculate agglomeration economies, or economically quantify the effects of access to labour and product markets, or quantify the amount of inward investment which might be attracted to the UK. This is because other studies fulfil some of these roles. For example, agglomeration impacts of transport investment area being examined through the HS2 Growth Strategies work. Midlands Connect

concentrates on the broader Midlands picture, and works to develop a strategic vision which connects the East and West Midlands, and improves market access through ports and airports.

4.4 These other studies are important, but we have no wish to replicate them. Instead, as set out above, we wish to concentrate on how the CA might ensure that the benefits of infrastructure investment and land use planning come together most effectively to bring forward housing and jobs development.

The transport picture is complex

4.5 This study covers a wide geographical area, and a relatively long timescale. It is therefore to be expected that there are a very large number of planned transport schemes. Some are related to individual development proposals, whilst others deal with particular pinch-points on the network; some relate to through traffic with origins and destinations outside the West Midlands, and others simply maintain the network in its current state.

4.6 As an example of the complexity involved, the ITA has collated a list of 139 'major' transport interventions the seven districts wish to see implemented over the next 20 years. 67 interventions are in rail, rapid transit/metro and interchanges. This forms the starting point for the West Midlands Strategic Transport Plan. There is also a list of investments in the HS2 Growth Strategy Connectivity Programme, and committed and uncommitted investment from Highways England 's RIS (Road Investment Strategy), the Highways England Route Strategies, and Network Rail investment programming. In total, there are many hundreds of schemes listed.

4.7 More prioritisation and sequencing is being carried out by the ITA at the time of writing. This will be available later in 2015. Some schemes have received funding (from, for example, the DfT or the Local Growth Fund) whilst other schemes remain without funding. Most are in the latter category.

4.8 Work is also underway within Highways England on the development of the strategic highway network and economic growth, but it is at an early stage.

Creating a baseline list of uncommitted transport infrastructure

4.9 We needed a way to get a robust strategic overview of transport interventions in the West Midlands.

4.10 Our starting point for this exercise was a) the list of uncommitted schemes listed in Highways England's RIS, b) the un-prioritised long list of uncommitted schemes from the West Midlands Strategic Transport Plan, and c) the list of interventions in the HS2 Growth Strategy Connectivity Programme[17]. The latter list nearly entirely duplicates the West Midlands STP list.[18] It should be emphasised that the schemes described in

[17] Draft for Consultation June 2015 (11-13). This list overlaps in large measure with the ITA

[18] The Walsall to Rugeley Rail Line Speed improvements are listed in the HS2 Connectivity document, but does not appear on the West Midlands STP longlist.

b) and c) are in concept phase and further development work will be necessary on many of these schemes.

4.11 Other schemes were subsequently suggested to us, but to maintain the integrity of the exercise we only used the sources stated above.[19] The long list is provided in Appendix C.

Our tests to identify strategic schemes that will help deliver sites

4.12 A strategic view required that we cut through this detail. We set up a series of tests that would allow us to sort through the long list.

4.13 In this exercise, we are trying to do something very targeted: *we are attempting identify transport projects that will help release housing and jobs sites in the West Midlands conurbation.* This is in line with the objectives of our study set out in paragraph 4.4.

4.14 This is not the same as identifying a list of the transport schemes with the greatest economic impact. Whilst we think that the schemes identified by our tests will all be important, the list will not be exclusive: there may be other schemes which are also economically important which do not appear here. This is because as explained earlier transport schemes have different economic effects. .

4.15 There are no hard and fast rules for isolating the strategic schemes, particularly in advance of a project-by-project review.

4.16 We have relied on professional judgement and a degree of common sense in making these decisions. We isolated the schemes which are of a type and scale likely to have a substantial economic impact on growth, and in particular on site regeneration, in the West Midlands. We used a literature review (attached as Appendix A) to help us do this (We say more about our method in Appendix C).

*Test 1: the scheme's **location** must be in a growing economy*

4.17 For positive impacts to result from transport infrastructure investment, the literature review showed that local economies should be growing. All locations in the West Midlands passed this test, given the strong demand for housing and employment sites across the area.

*Test 2: does the scheme **type** appear likely to benefit site development, given the local context?*

4.18 We used the findings from our literature review to understand whether the scheme type would be likely to benefit site development, given the economic and geographical context of the scheme.

[19] Additional schemes suggested included Dudley A4101/A461 Strategic Highway Corridor Enhancements (5-10 years); Dudley Accessing Growth Package (0-5 years); Dudley Highways Structures Package (0-5 years); Dudley Access to Strategic Housing Sites (0-10 years). These have not been tested.

*Test 3: is the scheme of sufficient **scale** to realistically impact on site development prospects?*

4.19 Again, there is no hard and fast rule here. Scale is a relative concept, and we had no objective point against which the concept of 'sufficient scale' could be measured. We took a pragmatic approach that would allow us to deal with the most significant schemes which might conceivably affect the delivery of development. Relatively small schemes might be relevant here if they are specifically targeted at unlocking a development site.

*Test 4: is the scheme likely to be able to add **additional value** by running through areas with significant available sites and marginal viability?*

4.20 This test is in place to try to judge the likely levels of economic additionality. If a scheme runs through an area in which development is already viable, further demand created by additional transport investment may simply translate into price gains for property owners near affected transport nodes, rather than result in increased development in an area and accompanying wider economic benefits. (Of course, sites may be redeveloped at higher densities, but this effect is likely to be long term in nature).

4.21 We have judged likely viability with reference to surrounding residential property values. Because commercial property values are not consistently available, this test is not available for the same precision for commercial property, but we have used professional judgement regarding the performance of local industrial land markets. .

Transport schemes most likely to help deliver jobs and housing sites

4.22 Applying the four tests identified reduced the long list down to 55 schemes. These schemes represent those that, in our judgement, are of a type and scale likely to have a substantial economic impact on growth. The full list of schemes are provided in Appendix C .

Table 4.1 Transport schemes after refinement: schemes most likely to help deliver jobs and housing sites (tests 1 to 4)

No.	Scheme
	NATIONAL/REGIONAL
	From Highways England RIS
1.	M54 to M6 toll link road (committed but subject to other contributions)
	Motorway Junctions
2.	M5 Junction 2 Improvement
3.	M5 Junction 1 Improvement
	Motorway/Trunk Road Schemes
4.	Better Use of M6 Toll
	Passenger/Freight Rail
5.	Water Orton Rail Corridor Capacity and Local Enhancements
6.	Camp Hill Chords
7.	Coventry Station Track Remodelling

No.	Scheme
8.	Kings Norton - Bromsgrove Corridor Capacity
	METROPOLITAN
	Rail
9.	Snow Hill Phase 1a and b (Urban Realm)
10.	Snow Hill Lines Capacity and Connectivity Enhancements
11.	Walsall to Wolverhampton Rail Connectivity
12.	Walsall Gateway Project, Walsall rail station improvements
13.	New Local Stations at East and South Coventry
14.	Walsall Post-HS2 "Classic Rail " Enhancements , infrastructure programme
15.	Extension of Cross City North to Alrewas and Burton
	Rapid Transit
16.	A34 Walsall Rd SPRINT
17.	Bartley Green SPRINT
18.	Coventry 'Clover-leaf' rapid transit network
19.	UKC - HS2 Growth Strategy Interchange multi-modal access to key sites and business parks
20.	Metro Brierley Hill to Birmingham via Wednesbury
21.	Metro Brierley Hill - Stourbridge
22.	UK Central – Warwick University – Coventry Sprint A45
23.	SPRINT - UKCentral - Solihull via Damson Parkway
24.	East Birmingham to UK Central Metro Extension
25.	Longbridge to Birmingham SPRINT
26.	i54 SPRINT (including extension to Penn and Merry Hill)
27.	Dudley Very Light Rail Passenger Network, 3 phases Dudley Port , Dudley, Brierley Hill[20]
28.	Bilston Urban Village Metro Stop
29.	Walsall to Wednesbury Rapid Transit
30.	Sutton Coldfield Public Transport Package (SPRINT element)
	Main Road Network
31.	Coventry Gateway Development
32.	Coventry Ring Road Enhancements
33.	Highgate Rd A4167
34.	UKC - Connecting Solihull Programme Part A Multi-Modal Access to Key Nodes
35.	Stafford Rd A449 Junction 2 Vine to M54
36.	Wolverhampton City Centre Public Realm improvements
37.	A444 Corridor enhancements
38.	West Bromwich South West Bypass
39.	A41 Albion Junction Improvement, Carters Green
40.	Ettingshall Rd/Willenhall Rd new highway link
41.	Birmingham Ring Road
42.	Wolverhampton City Centre Ring Road breaking the collars on the city Bilston Rd Island (SCHEME A)
43.	Wolverhampton City Centre Ring Road breaking the collars on the city Stafford St junction (SCHEME B)
44.	A4182 Junction Improvements, West Bromwich
45.	Bilston Centre Oxford St Roundabout junction improvement
46.	A452 Highway Capacity Connectivity to UKC
47.	St Martins and A45 / Kenilworth Rd junctions Connectivity to UKC

[20] This potentially conflicts with Items 20/21 (Metro proposals). We understand that a phased approach to implementing a VLR network was considered earlier in the year as an alternative to Metro which at that time was stalled due to issues of affordability. However, we understand the situation has now changed with the new Metro proposals, which (although yet to be informed by the Black Country Rapid Transit Review regarding mode), are now the preferred option for this alignment. Depending on forthcoming work, this project may need to be removed.

No.	Scheme
	LOCAL
	Local Access Highway Measures
48.	Warwick Uni/ Westwood Housing Access
49.	Keresley Link Road (A45 to M6/ A444)
50.	Gold Hill Access Improvements,Tipton, new highway link from A41
51.	UKC - Connecting Solihull Programme Part B Multi-Modal Access to Development Sites outside the Hub Area
52.	Walsall Accessing Growth Package, opening up key employment development sites
53.	Black Patch Access Improvements, Smethwick, new highway link from A457
54.	SUE Site Access Improvements Eastern Green
55.	SUE Site Access Improvements Walsgrave and Ansty

Transport plans in the CA area in time sequence

4.23 The schemes were put in time sequence starting in 2015/16. This was a rough sequencing carried out by the ITA and their retained consultants in advance of a formal piece of work coming later in the year.

4.24 This is split as follows:

- Phase 1 and 2 schemes (0 to 5 years, 5 to 10 years respectively), which need to be implemented to improve existing infrastructure or are critical to development sites coming on stream in the short to medium term;
- Phase 3 schemes (10 to 15 years) to manage growth in the medium to long term and serve more development demand when it comes online;
- Longer term aspirations and schemes which will need implementing to meet future demand.

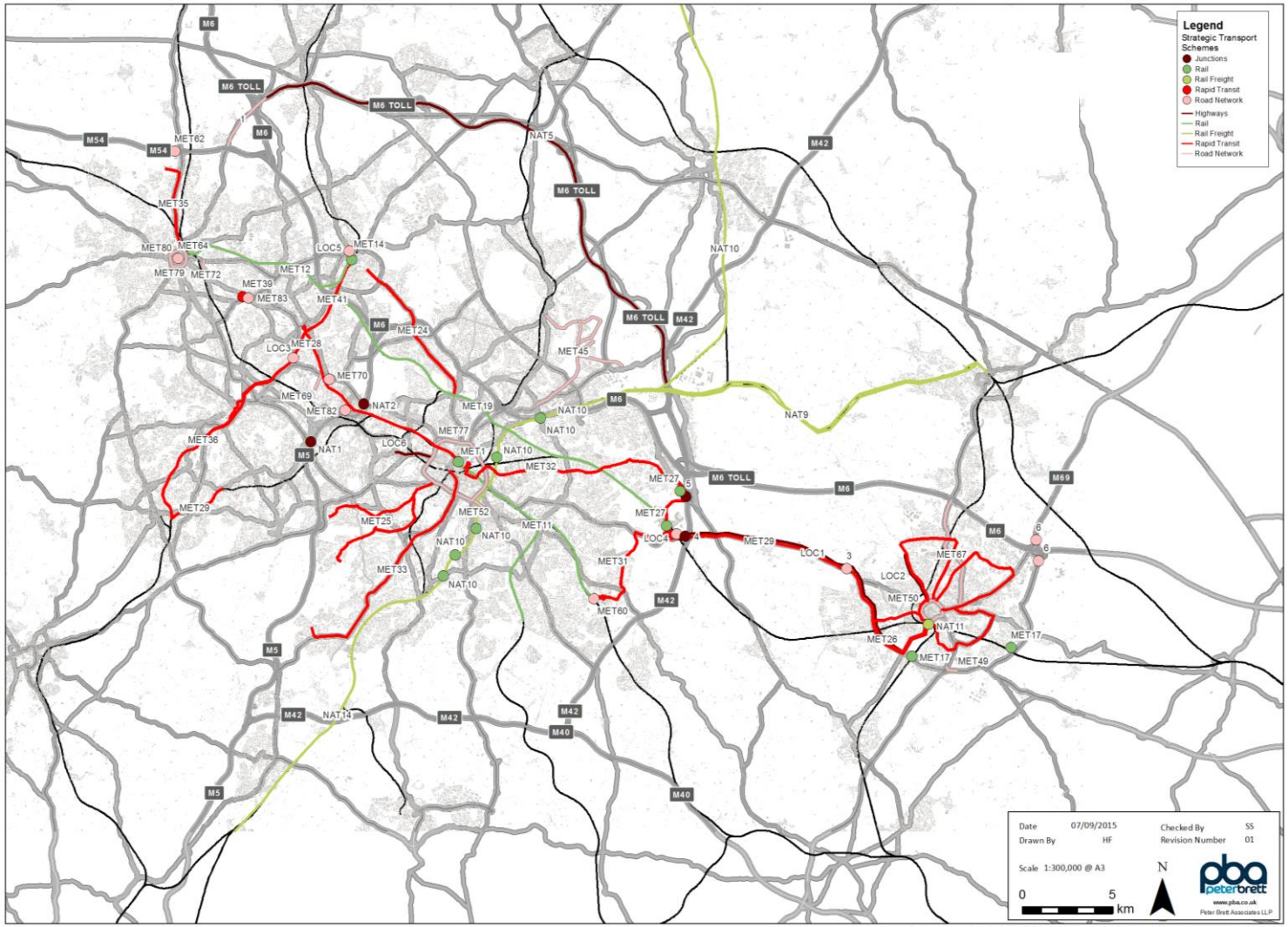
4.25 The current phasing used in this study is summarised in Table 4.2. The scheme promoters (local authorities, Centro, Highways England) will have a better understanding of their priorities and preferred phasing. Further discussion is likely to be necessary outside the terms of this commission.

Table 4.2 Results in time sequence

No.	Scheme
	2015/16 to 2019/20 (0 to 5 years)
1.	M5 4 to M6 toll link road (committed but subject to other contributions)
2.	Better Use of M6 Toll
3.	Coventry Station Track Remodelling
4.	Snow Hill Phase 1a and b (Urban Realm)
5.	Coventry 'Clover-leaf' rapid transit network
6.	Coventry Gateway Development
7.	Stafford Rd A449 Junction 2 Vine to M54
8.	Wolverhampton City Centre Public Realm improvements
9.	A444 Corridor enhancements
10.	Gold Hill Access Improvements, Tipton, new highway link from A41
11.	Walsall Accessing Growth Package, opening up key employment development sites
12.	SUE Site Access Improvements Walsgrave and Ansty
	2019/20 to 2024/25 (5 to 10 years)
13.	M5 Junction 2 Improvement
14.	M5 Junction 1 Improvement
15.	Water Orton Rail Corridor Capacity and Local Enhancements
16.	Camp Hill Chords
17.	Kings Norton - Bromsgrove Corridor Capacity
18.	Snow Hill Lines Capacity and Connectivity Enhancements
19.	Walsall to Wolverhampton Rail Connectivity
20.	Walsall Gateway Project, Walsall rail station improvements
21.	A34 Walsall Rd SPRINT
22.	UKC - HS2 Growth Strategy Interchange multi-modal access to key sites and business parks
23.	Metro Brierley Hill to Birmingham via Wednesbury
24.	UK Central – Warwick University – Coventry Sprint A45
25.	SPRINT - UKCentral - Solihull via Damson Parkway
26.	East Birmingham to UK Central Metro Extension
27.	Coventry Ring Road Enhancements
28.	Highgate Rd A4167
29.	UKC - Connecting Solihull Programme Part A Multi-Modal Access to Key Nodes
30.	West Bromwich South West Bypass
31.	A41 Albion Junction Improvement, Carters Green
32.	Birmingham Ring Road
33.	Wolverhampton City Centre Ring Road breaking the collars on the city Bilston Rd Island (SCHEME A)
34.	Wolverhampton City Centre Ring Road breaking the collars on the city Stafford St junction (SCHEME B)
35.	St Martins and A45 / Kenilworth Rd junctions Connectivity to UKC
36.	Warwick Uni/ Westwood Housing Access
37.	UKC - Connecting Solihull Programme Part B Multi-Modal Access to Development Sites outside the Hub Area
38.	Black Patch Access Improvements, Smethwick, new highway link from A457
39.	SUE Site Access Improvements Eastern Green
	2025/26 to 2029/30 (10 to 15 years)
40.	Walsall Post-HS2 "Classic Rail " Enhancements , infrastructure programme
41.	Extension of Cross City North to Alrewas and Burton
42.	Bartley Green SPRINT
43.	Longbridge to Birmingham SPRINT
44.	i54 SPRINT (including extension to Penn and Merry Hill)

45.	Bilston Urban Village Metro Stop
46.	Sutton Coldfield Public Transport Package (SPRINT element)
47.	Ettingshall Rd/Willenhall Rd new highway link
48.	A4182 Junction Improvements, West Bromwich
49.	Bilston Centre Oxford St Roundabout junction improvement
50.	A452 Highway Capacity Connectivity to UKC
51.	Keresley Link Road (A45 to M6/ A444)
	2030/31+ (15+ years)
52.	New Local Stations at East and South Coventry
53.	Metro Brierley Hill - Stourbridge
54.	Dudley Very Light Rail Passenger Network, 3 phases Dudley Port , Dudley, Brierley Hill
55.	Walsall to Wednesbury Rapid Transit

Figure 4.2 Results mapped (2031)



5 INTEGRATING GROWTH AND TRANSPORT PLANS: OPPORTUNITIES AND GAPS

Introduction

5.1 In Chapter 3 of this report, we have obtained an overview of the major development areas and the key sites within them, and a development trajectory by year.

5.2 In Chapter 4, we have developed an overview of the strategic transport schemes which have a realistic chance of unlocking additional development.

5.3 In this chapter, we examine the relationship between growth plans and transport plans, and how each may reinforce the other. We are focused on the overarching challenge for the West Midlands area, which is to help drive productivity growth. We do this by creating viable development sites.

Figure 5.1 Report stages and objectives

Approach

5.4 To understand the ways in which land use and infrastructure investment might mutually reinforce each other in order to create the growth capacity needed by the West Midlands conurbation, we need to do two things in this chapter.

- Firstly, we must examine infrastructure plans, and understand the extent to which land use planning supports them. Those infrastructure plans which exist without supporting land use strategies can be re-examined, in order that growth potential may be maximised.
- Secondly, we must examine growth plans, and understand the extent to which infrastructure supports them. This is particularly important in the West Midlands, because sites are frequently unviable.

5.5 We do this by phase.

Do transport projects have adequate planning support to leverage growth? Where are the gaps?

5.6 Table 5.1 to Table 5.4 shows a list of key transport schemes which have passed the tests set out in Chapter 4. We have taken this list and looked at supporting planning policy in each instance, to understand whether the transport projects had sufficient planning support to allow growth to be leveraged.

5.7 We have sorted the answers to that question into two categories.

- 'Further opportunities possible from planning review'. This indicates when it appears that a planned transport intervention might create opportunities which further planning support may unlock.
- 'Sufficient support'. This indicates when a planned transport intervention appears to have sufficient planning support.

5.8 In reality, of course, each project finds itself on a spectrum between these two extremes. However, we have taken this simple, binary approach in order to try to clarify what is a very complex infrastructure and land use picture.

Table 5.1 Phase 1 2015/16 to 2019/20: do transport projects have adequate planning support to leverage growth?

2015/16 to 2019/20 (0 to 5 years)	Do transport projects have adequate planning support to leverage growth? (Sufficient support, or Further opportunities available from planning review)
M54 to M6 toll link road (committed but subject to other contributions)	Further opportunities possible from planning review. This conclusion is advanced tentatively. There are already allocations at nearby Hilton Cross business park, and the intervention will support growth at nearby i54. There are significant constraints in the area (the east of Featherstone appears to be covered by historic landscape designations, ancient woodland and green belt source: South Staffs proposals map). However, a review may highlight other unforeseen opportunities.
Better Use of M6 Toll	Further opportunities possible from planning review. See detailed analysis below in paragraph 5.13.
Coventry Station Track Remodelling and station improvements	Sufficient support. Coventry centre has got detailed masterplanning to support this investment.
Snow Hill Phase 1a and b (Urban Realm)	Sufficient support. Helps support values. Planning position is already developed.
Coventry 'Clover-leaf' rapid transit network	Sufficient support, with more emerging through the Local Plan.
Coventry Gateway Development	Sufficient support. Unlocks Coventry Gateway. However, this transport intervention is scheduled for phase 1, whilst development is expected in phase 2. There may need to be improved alignment between growth and infrastructure development.
Stafford Rd A449 Junction 2 Vine to M54	Sufficient support. Helps access to i54 and Enterprise Zone. The planning position on these sites is already developed.
Wolverhampton City Centre Public Realm improvements	Sufficient support. Helps support values. The planning position is already developed.
A444 Corridor enhancements	Sufficient support. Will support growth in urban area and towards north western periphery.
Gold Hill Access Improvements, Tipton, new highway link from A41	Further opportunities possible from planning review. Part of the Tipton Hill Top regeneration zone. The scheme is required to provide good access to industrial development sites which have substandard headroom access from the A4196 thus making them unattractive to investors. The cost of the new access renders the sites unviable. However we have not seen information on the volume of development which could be released, or the right planning response. This may exist, but further review may also be required.
Walsall Accessing Growth Package, opening up key employment development sites	Sufficient support. Underpinned by technical work for the Walsall Council Site Allocation Document (SAD) in 2014/15 and the 'Growth Sites Report' completed by Bulleys Chartered Surveyors on behalf of the Black Country Consortium in February 2014. The latter reviewed 16 key sites in Walsall and applied a market test to each of them, with 'motorway access' and 'local road infrastructure' featuring as key criteria for development. Contains a number of different schemes. Unlocks employment development sites.
SUE Site Access Improvements Walsgrave and Ansty	Sufficient support. Planned development already in place. Transport delivery should come forward towards the latter part of phase 1/ early in phase 2.

Table 5.2 Phase 2 : do transport projects have adequate planning support to leverage growth?

2019/20 to 2024/25 (5 to 10 years)	Do transport projects have adequate planning support to leverage growth? (Sufficient support, or Further opportunities available from planning review)
M5 Junction 2 Improvement	Further opportunities possible from planning review. This conclusion is advanced tentatively. Within Oldbury-West Brom-Smethwick growth corridor 12, but specific site development opportunities may be available following junction improvements. There may be scope for denser development and higher quality employment land locations, but the area is relative well occupied at present. Planning policy could usefully be reviewed to ensure maximum benefit is extracted.
M5 Junction 1 Improvement	See M5 J 2 text above.
Water Orton Rail Corridor Capacity and Local Enhancements	Further opportunities possible from planning review. See the Camp Hill chords scheme below and in further analysis section. The scheme is needed to as a precursor to Camp Hill chords (with significant local improvements). Direct site development benefits of this scheme may spill out beyond current CA area into Tamworth (Burton) / Nuneaton and may need better review by long term housing growth plans.
Camp Hill Chords	Further opportunities possible from planning review. See detailed analysis below.
Kings Norton - Bromsgrove Corridor Capacity	Sufficient support. Linked to Longbridge AAP. However, intermediate points might benefit from renewed planning focus.
Snow Hill Lines Capacity and Connectivity Enhancements	Further opportunities possible from planning review. Key scheme to provide better accessibility across the CA, especially in Rowley Regis – Jewellery Line (BC corridor 13), Oldbury – West Bromwich – Smethwick (BC corridor 12), and through into Shirley and Solihull. However we are not aware of specific understanding of how the scheme might benefit particular sites. Further work may be valuable in building a planning response.
Walsall to Wolverhampton Rail Connectivity	Sufficient support, given that planning scenario in Wolverhampton and Walsall is broadly understood. Dependent on the Black Country rapid transit review.
Walsall Gateway Project, Walsall rail station improvements	Further opportunities possible from planning review. No detailed supporting plans. This is a long term vision for station and town centre regeneration.
A34 Walsall Rd SPRINT	Sufficient support. Lots of development opportunity in this corridor. Over longer term, this could turn into metro. Campus of Birmingham City University adjacent, and University doing masterplan. A lot of land use work has been done: the A34 regeneration framework is completed, and there scope for further expansion. Also supported by Aston, Newtown and Lozells AAP formally adopted in 2012.
UKC - HS2 Growth Strategy Interchange multi-modal access to key sites and business parks	Sufficient support. Detailed masterplan and DIFS scheme is in existence at UK Central, but this is a complex scheme and will need large amounts of detailed future work.
Metro Brierley Hill to Birmingham via Wednesbury	Further opportunities possible from planning review. The Brierley Hill planning response to investment is well understood, but implications of investment along the corridor on specific sites via Wednesbury and into Birmingham is less well developed. The line runs through Dudley Brierley Hill Stourbridge Corridor 11 and through Tipton Corridor 9, Hilltop Corridor 8 and Oldbury Corridor 12 and into Birmingham City Centre.
UK Central – Warwick University – Coventry Sprint A45	Sufficient support is likely to emerge. Implications of site development are likely to form part of forthcoming Coventry plans.
SPRINT - UKCentral - Solihull via Damson Parkway	Sufficient support is likely to emerge. Implications of site development are likely to form part of forthcoming Solihull plans.
East Birmingham to UK Central Metro Extension	Further opportunities possible from planning review. See detailed analysis below.

2019/20 to 2024/25 (5 to 10 years)	Do transport projects have adequate planning support to leverage growth? (Sufficient support, or Further opportunities available from planning review)
Coventry Ring Road Enhancements	Sufficient support. Improvements are aligned with significant development plans in city centre.
Highgate Rd A4167	Sufficient support. Improves access to Birmingham Enterprise Zone and city centre improvements
UKC - Connecting Solihull Programme Part A Multi-Modal Access to Key Nodes	Sufficient support. Detailed masterplan and DIFS scheme is in existence at UK Central Interchange and in the rest of the hub, but this is a complex scheme and will need large amounts of detailed future work.
West Bromwich South West Bypass	Sufficient support. Major schemes related to growth as outlined in the West Bromwich AAP.
A41 Albion Junction Improvement, Carters Green	Sufficient support. Will unlock adjacent development site. Broad planning picture is understood.
Birmingham Ring Road	Sufficient support. Pinch points identified. This is a series of junction improvements to unlock development in Birmingham city. Broad planning picture is understood.
Wolverhampton City Centre Ring Road breaking the collars on the city Bilston Rd Island (SCHEME A)	Sufficient support. Likely to help unlock development in Wolverhampton city centre. Planning position in the city centre broadly understood.
Wolverhampton City Centre Ring Road breaking the collars on the city Stafford St junction (SCHEME B)	Sufficient support. See above.
St Martins and A45 / Kenilworth Rd junctions Connectivity to UKC	Sufficient support. Detailed masterplan and DIFS scheme is in existence at UK Central Interchange and in the rest of the hub, but this is a complex scheme and will need large amounts of detailed future work.
Warwick Uni/ Westwood Housing Access	Sufficient support. Warwick University masterplan in existence which understand the planning response to investment.
UKC - Connecting Solihull Programme Part B Multi-Modal Access to Development Sites outside the Hub Area	Sufficient support. Detailed masterplan and DIFS scheme is in existence at UK Central Interchange and in the rest of the hub, but this is a complex scheme and will need large amounts of detailed future work.
Black Patch Access Improvements, Smethwick, new highway link from A457	Further opportunities possible from planning review. We advance this conclusion tentatively. Whilst the investment unlocks local development in Black Country Corridor 12, much of the land comprises specific allocations in the Sandwell Site Allocations & Delivery Plan, we suggest that more focused work is carried out to understand the full implications of investment.
SUE Site Access Improvements Eastern Green	Sufficient support. Eastern Green well understood in planning terms.

Table 5.3 Phase 3: do transport projects have adequate planning support to leverage growth?

2025/26 to 2029/30 (10 to 15 years)	Do transport projects have adequate planning support to leverage growth? (Sufficient support, or Further opportunities available from planning review)
Walsall Post-HS2 "Classic Rail " Enhancements , infrastructure programme	Sufficient support. Walsall and Birmingham planning potential is understood by policy.
Extension of Cross City North to Alrewas and Burton	Further opportunities possible from planning review. Planning implications of investment are not well understood.
Bartley Green SPRINT	Further opportunities possible from planning review. Planning implications of investment are not well understood. Harborne is well developed, and viable, but densification may be possible over time.
Longbridge to Birmingham SPRINT	Sufficient support. Longbridge AAP in place.
i54 SPRINT (including extension to Penn and Merry Hill)	Sufficient support, given i54 planning policy is well developed.
Bilston Urban Village Metro Stop	Sufficient support. Bilston Corridor Area Action Plan is well developed. Supports Bilston development.
Sutton Coldfield Public Transport Package (SPRINT element)	Sufficient support. Supports Langley, Peddimore and Sutton Coldfield links. Understood in planning terms.
Ettingshall Rd/Willenhall Rd new highway link	Further opportunities possible from planning review. Planning support seems underdeveloped.
A4182 Junction Improvements, West Bromwich	Sufficient support. Scheme is a specific proposal in West Bromwich AAP. Supports retail and office floorspace. Not included in Black Country SEP, however.
Bilston Centre Oxford St Roundabout junction improvement	Sufficient support. Bilston Corridor Area Action Plan is well developed. Supports Bilston development.
A452 Highway Capacity Connectivity to UKC	Sufficient support. Detailed masterplan and DIFS scheme is in existence at UK Central Interchange and in the rest of the hub, but this is a complex scheme and will need large amounts of detailed future work.
Keresley Link Road (A45 to M6/ A444)	Sufficient support. Helps to unlocks nearby residential scheme which is relatively well understood in policy.

Table 5.4 Longer term schemes: do transport projects have adequate planning support to leverage growth?

2030/31+ (15+ years)	Do transport projects have adequate planning support to leverage growth? (Sufficient support, or Further opportunities available from planning review)
New Local Stations at East and South Coventry	Sufficient support. New stations align with university and Gateway. Relatively well understood, and will be better understood as Coventry plan emerges.
Metro Brierley Hill - Stourbridge	Sufficient support. Brierley Hill planning scenarios are well understood. Stourbridge and intermediate points less well understood.
Dudley Very Light Rail Passenger Network, 3 phases Dudley Port , Dudley, Brierley Hill,	Sufficient support. The project supports aspirations and objectives in the Black Country Joint Core Strategy (BCJCS), the emerging Dudley Development Plan Document (DPD) and Dudley Area Action Plan (DAAP) and the existing local Brierley Hill (BHAAP). The proposed site for Phase 1 is part of the wider Castle Hill regeneration area. Subject to Black Country Rapid Transit Review.
Walsall to Wednesbury Rapid Transit	Sufficient support given long term nature of scheme. Links two regeneration corridors. However, site specific implications are not understood well.

Focusing on potential opportunities: transport projects which could be backed up by further targeted planning support

5.9 According to the analysis set out above, then, there are a series of transport infrastructure schemes which may require additional planning support to unlock maximum benefits. As we have been careful to point out, at times we advance these conclusions tentatively, but we are only able to work from the evidence we have seen.

5.10 We have provided a refined list of those schemes below.

Table 5.5 transport projects which where opportunities exist to leverage further growth from intensified land use plans

	2015/16 to 2019/20 (0 to 5 years)
1.	M54 to M6 toll link road (committed but subject to other contributions)
2.	Better Use of M6 Toll
3.	Gold Hill Access Improvements, Tipton, new highway link from A41
	2019/20 to 2024/25 (5 to 10 years)
4.	M5 Junction 2 Improvement
5.	M5 Junction 1 Improvement
6.	Water Orton Rail Corridor Capacity and Local Enhancements
7.	Camp Hill Chords
8.	Snow Hill Lines Capacity and Connectivity Enhancements
9.	Walsall Gateway Project, Walsall rail station improvements
10.	Metro Brierley Hill to Birmingham via Wednesbury
11.	East Birmingham to UK Central Metro Extension
12.	Black Patch Access Improvements, Smethwick, new highway link from A457
	2025/26 to 2029/30 (10 to 15 years)
13.	Extension of Cross City North to Alrewas and Burton
14.	Bartley Green SPRINT
15.	Ettingshall Rd/Willenhall Rd new highway link

Understanding the potential of the most important transport schemes

5.11 Above, we have suggested a list of 15 schemes where there is a potential opportunities to create more growth from stronger planning support.

5.12 However, some particularly important projects stand out in meriting particularly focused support.

Making the M6 Toll Road free at point of use: the possible wider implications

5.13 The concept of making the M6 toll road free at point of use has potentially far-reaching implications for the economic geography of the West Midlands. This may require detailed thinking in order to extract the maximum possible value from the shift.

5.14 At the moment, the eastern half of Birmingham, the M42 corridor and the motorway-accessible parts of Coventry are favoured by investors. The perception that access to London is easier to the south of this barrier is an important factor in location

decisions. There is a perception that other sites within the conurbation (for example, around the M6 exits in the Black Country) suffer significant delays. In effect, the conurbation represents a barrier to the north and west. This is likely to change if the M6 Toll became free at point of use.

5.15 The ITA calculates that making the M6 Toll free at the point of use would help generate £1bn in economic benefits to transport users and considerable additional benefits to air quality and public health. The ITA believes that the first step is to make the M6 Toll free for HGVs. This could be as early as 2017. If this step was taken, the ITA states that around 10,000 HGVs could use the M6 Toll per day. Reflecting the size and speeds of HGVs, this is the equivalent of removing 30,000 cars from the M6. As a second phase, the ITA then wishes to make the M6 Toll free at the point of use for all vehicles.

5.16 Effects could be as follows.

- Planning policy would come under significant pressure to use the new opportunity to create advanced manufacturing and logistics uses along the now de-tolled M6.
- Associated strategic routes using the M6 Toll could be affected. There could be increasing pressure for the development of sites along the A38 running past Lichfield and up towards Burton on Trent. The A5 into Tamworth is likely to become significantly more attractive to occupiers.
- The move would unlock significant capacity on the 'classic' M6 – and therefore might help release significant capacity within the Black Country conurbation. Key sites along the M6 that are likely to become more attractive are those in the Darlaston part of the Black Country Enterprise Zone at Junction 10 (within BC corridor 6) which are anticipated to generate over 2,000 jobs between 2015/16 and 2019/20 where sites are being promoted for advanced manufacturing and logistics businesses serving the regional economy. However, the shift might be double edged: sites such as Darlaston might find themselves in completion with the new M6 Toll sites. The extent of this would depend on whether development along the M6 Toll and M6 would focus on the same segments and markets. More work would be needed to understand this picture.
- Sites currently in relatively low-value manufacturing use may come under pressure to switch to logistics and higher value manufacturing uses. A study in 2013 shows that there is a limited supply of development ready logistics sites to serve the West Midlands in the short, medium and long term[21]. It is relatively easy to foresee these pressures in places like Brownhills, Norton Canes, Little Norton and south east Cannock.
- Birmingham's new strategic employment allocation at Peddimore requires a series of new junction improvements in order to deal with growth. The de-tolling of the M6 Toll would be likely to accelerate the build-out of these proposals, and

[21] URS (2013) Black Country and southern Staffordshire Regional Logistics Site Study, April 2013, http://www.wolverhampton.gov.uk/CHttpHandler.ashx?id=1638&p=0 [Accessed 2 September 2015]

also see increasing pressure for the development of remaining neighbouring sites towards what will be a defensible boundary at the M6 Toll.

5.17 Manufacturing or logistics would be attracted to these new sites. Planning distinguishes between B1c/B2 (industrial) and B8 (distribution) uses. Our earlier work on industrial and logistics demand in the West Midlands has suggest that it is not always possible to make this distinction in market terms.[22]

5.18 How much of this possible change actually takes place depends on the attitudes of the planning authorities, and the balance struck between the competing demands of economic output and productivity growth, the defence of existing development patterns, and the balance of economic activity around the area.

5.19 Little is currently understood about the sites around the M6 Toll junctions. We recommend that a study is undertaken of the potential growth sites around the M6 Toll, in order that a fuller understanding of the costs and benefits of the M6 de-tolling proposal are better understood.

Camp Hill Chords can maximise impacts through further planning support

5.20 The introduction of the Camp Hill Chords will have considerable impact along the Camp Hill Lines. This scheme releases major capacity on routes into central Birmingham Moor St (avoiding congested Birmingham New Street),

5.21 The scheme reinforces Moor Street station, adjacent to Curzon Street HS2. Camp Hill South Chord will allow new local rail stations serving communities in Kings Heath, Moseley and Hazelwell. Camp Hill North Chord will (in conjunction with capacity improvements at Water Orton Junction) enable new stations could be provided at Fort Parkway, Castle Bromwich, Kingsbury and West Nuneaton (Galley Common).

5.22 Though some outline thinking has been done, the development potential unlocked by this opportunity is likely to need more detailed study. The potential for City Centre site development is relatively well understood, but the development potential around new stations (particularly around the north chord) is considerable, and is likely to need further work in order to fully capture benefits.

Snow Hill lines create significant site growth opportunities

5.23 The existing Snow Hill Lines network provides connectivity between the Black Country, through Birmingham and creates useful opportunities east to Solihull. Proposals include improvements to Birmingham Snow Hill and Rowley Regis station, and these seek to optimise the existing network to improve journey times and service

[22]PBA & JLL (2015) DRAFT West Midlands Strategic Employment Sites Study. Since the abolition of the Regional Spatial Strategies use classes have become more flexible, and many sites that were consented for B1/B2 use have been used for B8 or other uses. Meanwhile, many manufacturers have taken units on developments that were conceived or marketed as distribution parks. Consequently manufacturing and distribution are merging into one market. The two use classes are often operationally linked. Logistics / warehousing units are not just conduits for retail goods. They are also often used for the temporary storage of components or end products for local manufacturers. Furthermore, in many 'logistics' units there may be an element of light assembly or even more technical manufacturing; and many manufacturing complexes have a significant distribution element.

frequencies along this route. The scheme is reliant on the successful delivery of the Birmingham Metro Extension which will open up the use of a Snow Hill platform.

5.24 Within the CA, the growth areas that may benefit from improvements include Black Country corridors 12 and 13, and the Solihull and Shirley growth area. Corridors 12 and are projected to see growth in the region of 7,400 houses and almost 10,000 jobs by 2031. Solihull and Shirley on the other hand are expected to see more modest housing growth (1,400 houses and 5,200 jobs).

5.25 There has been a lot of thinking about the potential options to take forward for this scheme, but more work will need to be undertaken on the best option to maximise site growth opportunities in the CA.

Brierley Hill to Wednesbury links together Black Country corridors 8, 9 and 11 and completes a missing public transport link

5.26 An extension of the Midland Metro line from Line 1 in Wednesbury through to Brierley Hill, via Tipton, Dudley town centre and Merry Hill is a major scheme in the area and will form part of the East West Link across the CA.

5.27 The scheme unlocks the potential to develop along the Dudley – Brierley Hill – Stourbridge Corridor (corridor 11), Hill Top and Tipton – Dudley Port (corridor 8) and Brades Village (corridor 9). There are vacant sites along this corridor, with low land values. The existing public transport connectivity is poor along this corridor, encouraging high car use.

5.28 A step change in transport accessibility could assist in the development potential for 2,700 houses in corridor 11, over 3,000 houses in corridor 9 and approximately 2,700 houses in corridor 9 to be released by the end of Phase 2. It could also support employment in these areas.

There is opportunity to intensify development in along the East Birmingham to UK Central Metro Extension line, and more detailed planning work is needed to maximise this

5.29 The East Birmingham to UK Central Metro Extension line is one of the major schemes proposed in the CA. It routes through a large area of inner city Birmingham and could be used as a catalyst for major regeneration.

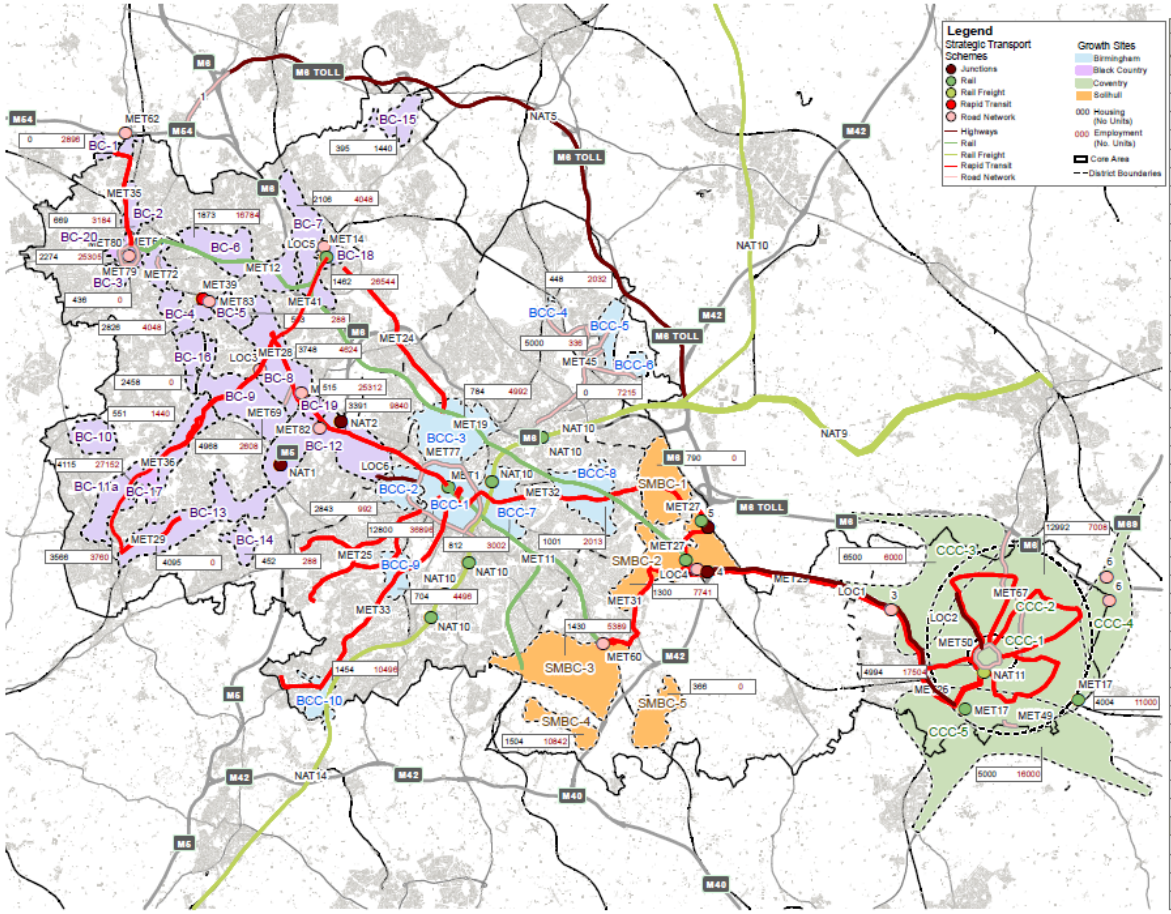
5.30 The line runs from Birmingham, through Bordesley Park AAP to Birmingham Business Park (where there is scope for intensification) then to HS2 triangle. Bordesley Park AAP and UK Central. These growth areas deal with the broad scope of works necessary in regeneration terms. However, given that the route covers such a large area further consideration needs to be given to fully understand how land density and development can be maximised.

Does jobs and housing growth have sufficient infrastructure planning support? Where are the gaps?

5.31 In this section, we seek to understand whether planned jobs and housing growth has sufficient infrastructure planning support.

5.32 We therefore combined a mapped view of the growth zones which also showed uncommitted infrastructure. We have created maps which show the development of growth infrastructure by year, but attach one map only below for sake of brevity.

Figure 5.2 Growth areas and infrastructure provision at 2031



Cumulative Growth from 2015/2016 to 2030/2031			
Area Ref	Area	Housing (no. units)	Employment (no. Jobs)
	Growth Areas		
BC-1	Pendeford/ Fordhouses	0	2896
BC-2	Stafford Road	669	3184
BC-3	South of Wolverhampton Strategic Centre	436	0
BC-4	Wolverhampton - Bilston	2826	4048
BC-5	Loxdale – Moxley	593	288
BC-6	Wednesfield - Willenhall - Darlaston	1873	16784
BC-7	Bloxwich - Birchills - Bescot	2106	4048
BC-8	Hill Top	3748	4624
BC-9	Tipton - Dudley Port - Brades Village	4968	2808
BC-10	Pensnett - Kingswinford	551	1440
BC-11	Dudley - Brierley Hill - Stourbridge	3566	3760
BC-12	Oldbury - West Bromwich - Smethwick	3391	9840
BC-13	Rowley Regis - Jewellery Line	4095	0
BC-14	Coombs Wood- Halesowen	452	288
BC-15	Brownhills	395	1440
BC-16	Coseley - Tipton - Princes End	2458	0
BC-17	Brierley Hill	4115	27152
BC-18	Walsall	1462	26544
BC-19	West Bromwich	515	25312
BC-20	Wolverhampton	2274	25305
BCC-1	Birmingham City Centre	12800	36896
BCC-2	Greater Icknield	2843	992
BCC-3	Aston, Newtown & Lozells AAP	784	4992
BCC-4	Sutton Coldfield	448	2032
BCC-5	Langley Sustainable Urban Extension	5000	336
BCC-6	Peddimore	0	7215
BCC-7	Bordesley Park AAP	812	3002
BCC-8	Eastern Triangle	1001	2013
BCC-9	Selly Oak and South Edgbaston	704	4496
BCC-10	Longbridge AAP	1454	10496
SMBC-1	Chelmsley Wood	790	0
SMBC-2	Airport, UK Central and JLR	1300	7741
SMBC-3	Shirley and Solihull	1430	5389
SMBC-4	Dickens Heath and Blythe Valley Park	1504	10842
SMBC-5	Knowle and Dorridge	366	0
CCC-1	Coventry City Centre	4994	17504
CCC-2	Coventry Urban Growth	12992	7008
CCC-3	Coventry North Western Periphery	6500	6000
CCC-4	Coventry North Eastern Periphery	4004	11000
CCC-5	Coventry Southern Periphery	5000	16000
	Inside LPA Boundary but Outside Growth Area		
	Black Country	40493	159561
	Birmingham	25846	67468
	Solihull	5870	23435
	Coventry	33490	58908

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2032/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Phasing																

Date 17/08/2015 Checked By SS
Drawn By HF Revision Number 01
Scale 1:300,000 @ A3
0 5 km
N

5.33 A review of the year-on-year mapping produced suggests that, generally speaking, land use plans support to uncommitted planned transport interventions.

- There are some points at which planned growth and planned transport interventions do not coincide perfectly in time. We are not particularly concerned about these apparent mismatches, because the infrastructure phasing we have is very high level and may alter. However, examples are as follows.
  - Coventry's transport infrastructure delivery is preceding development growth in the south and south east of the city. Development to the south of Coventry is not anticipated to come forwards within this first phase and is expected to follow from Phase 2 onwards. In order to facilitate Coventry Gateway Development, a new access is required from the A45. This is currently identified to be delivered during Phase 1, however, this could be delayed until just before development is due to commence on-site in Phase 2.
  - New public transport interventions to link Peddimore and Langley could benefit from being brought forward prior to Phase 3, because Langley Sustainable Urban Extension and Peddimore employment area are projected to be phased from 2016/17 onwards.
- There are some schemes which appear not to be well supported with transport infrastructure interventions. It may be, of course, that there is already sufficient local infrastructure capacity in pace to release these sites: it is notable that, with the exception of Tipton BC-9 and Bloxwich BC-7, most of the schemes listed below are relatively small. More detailed site specific work outside this brief would be needed to determine local infrastructure adequacy. These are as follows.
  - BC-7 Bloxwich, Birchills and Bescot (2100 homes, 4000 jobs) – a number of infrastructure schemes will cross the south of the area, but given the size of growth, further interventions may be needed to support growth in the rest of the area.
  - BC-9 Tipton Dudley Port (5000 homes, 600 jobs) – the Dudley Very Light Rail Passenger Network scheme will run through this area. However, given the size of the growth area and the scale of growth, further infrastructure support may be needed to support growth in the rest of this area[23].
  - BC-15 Brownhills (400 homes and 1440 jobs) – there are no transport schemes that directly relate to this area. Given the proximity to the M6 Toll, there is the potential for this growth area to be supported by any change in the operation of the Toll road, but further infrastructure support may be required.
  - BC-10 Pensnett-Kings Winford (550 homes, 1440 jobs) – located to the west of Dudley MBC, there are no schemes directly related to this area. This may

[23] We understand that a phased approach to implementing a VLR network was considered earlier in the year as an alternative to Metro which at that time was stalled due to issues of affordability. However, we understand the situation has now changed with the new Metro proposals, which (although yet to be informed by the Black Country Rapid Transit Review regarding mode), are now the preferred option for this alignment. Depending on forthcoming work, this project may need to be removed

be because the existing transport network is sufficient, and further infrastructure support is not required.

- BC-14 Coombs Wood – Halesowen (452 homes, 250 jobs) – this small growth area to the south of the Rowley Regis - Jewellery Line, does not have any schemes directly related to it, or any nearby schemes that may affect it. The growth in jobs and homes within this area is modest and may be able to be accommodated on the existing network. Further work outside this study would be needed to confirm this.
- SNBC5 Knowle and Dorridge (366 homes, 0 jobs) – there is projected to be modest housing growth in the villages of Knowle and Dorridge, but this growth is not supported by any of the identified infrastructure schemes. The existing network may able to accommodate the increase in growth. Further work outside this study would be needed to confirm this

5.34 Note that there are no schemes for Blythe Valley Park shown in our mapping, but this is because improvements are already committed.

The implications of analysis

5.35 These conclusions reached in this chapter are in many respects positive.

- Infrastructure plans have broadly supportive land use plans; and, vice versa,
- Land use plans have broadly supportive infrastructure plans.
- Some gaps do exist, but these can be plugged.

5.36 What is also clear, though, is that we have reached the limits of what a 'top-down' strategic review can achieve.

5.37 We are aware that when looked at from site level 'upwards', we may find a different picture. The devil is in the detail. Hidden within the circumstances of individual sites may be a series of problems that are not apparent from this top down view.

5.38 This potential gives rise to the concern that the structure of plans around high level regeneration corridors and zones in the West Midlands' plans may well obscure real difficulties at individual sites. We think that investment prioritisation and site delivery would be helped if individual key sites had more visibility, rather than being potentially obscured by area-wide Regeneration Corridors and zones.

5.39 We have suggested how the CA might find a potential solution to this problem in Chapter 8.

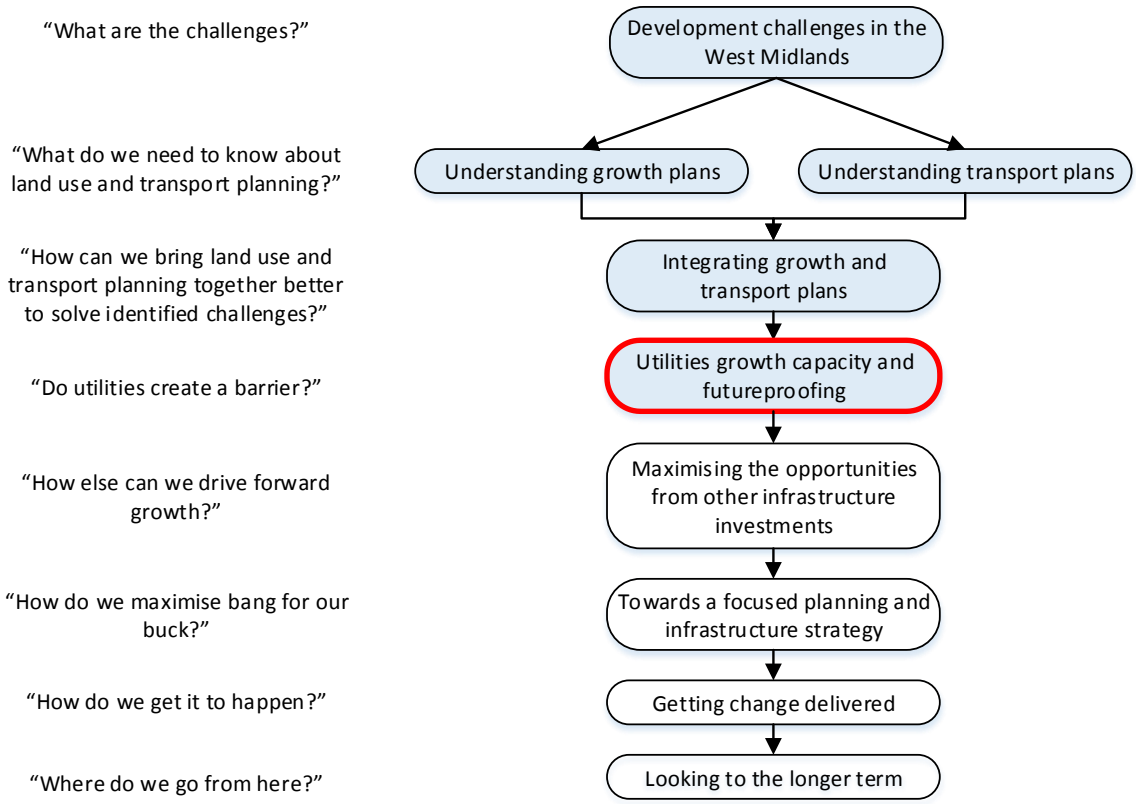
6 UTILITIES GROWTH CAPACITY AND FUTUREPROOFING: OPPORTUNITIES AND GAPS

Introduction

6.1 Our objective is to understand whether sufficient utilities investment is in place to allow capacity for growth in the West Midlands CA area.

6.2 We also wish to broadly understand who is likely to be responsible for paying for upgrades in capacity. This is in order to understand the likely impacts on the development viability of growth zones.

Figure 6.1 Report stages and objectives



Electricity

6.3 Western Power Distribution (WPD) were interviewed regarding capacity in the area.

Will network upgrades be necessary to accommodate proposed growth? What are they?

6.1 WPD have provided a response showing if there is the requirement for reinforcement in the form of a traffic light system. Green denotes no major reinforcement, amber

denotes possible reinforcement needed i.e. new cable from primary, and red denotes major reinforcement i.e. Primary upgrade required.

Solihull & Birmingham

6.2 WPD have advised that the zones provided would range from Green to Red, with specific major reinforcement required in the centre of Solihull, in the location of Birmingham Airport and NEC, and central Birmingham.

6.3 WPD have provided further details on each Zone and area, which is included as Appendix G**.**

Coventry

6.4 WPD have advised that all the zones provided would fall within Red and would require major works to facilitate the growth areas, and have provided the following information for each:

- Zone 1: There is no capacity within the middle of Coventry for Friargate, and a primary substation is required. The University can expand depending on timing.
- Zone 2: The University Hospital can expand their job growth, but if they require additional load there is no spare capacity.
- Zone 3: There is some capacity in this area. However, much depends on where the load is connected. A large amount of HV infrastructure will be required.
- Zone 4: There is no new capacity available in this area. However there is some spare capacity for Ansty Park. The site has an agreed Authorised Capacity which has a little spare. Once this capacity is reached then the Primary Substation will need upgrading.
- Zone 5: The University of Warwick has requested a Primary Substation replacement so there will be spare capacity. For JLR, there is some Spare Capacity available at Whitley Primary Substation, however if more load is required, then additional circuit and Plant will be required. Please note this available capacity is going very quickly.

6.5 WPD have provided further details on each Zone and area, which is included as Appendix G.

Black Country

6.6 The response from WPD with regards to the Black Country area remains outstanding at the time of this report.

Who will be responsible for paying for the necessary upgrades?

6.7 Where there is the requirement for new cable infrastructure / substations to facilitate the growth requirements, the responsibility for the payment of this infrastructure would usually be with the developer.

6.8 An economic test will be carried out to calculate the level of developer contribution of any network reinforcement required. WPD may offset a percentage of the overall

cost. The extent of any offset would be confirmed when detailed quotations are available.

Are there network resilience issues that will need addressing over time? What can the CA do to assist?

6.9 Under the terms of their licence code of practice energy transporters / water companies are duty bound to ensure their supply networks are resilient and fit for purpose. They are also responsible for developing their network to meet forward demands.

Telecommunications

Will network upgrades will be necessary to accommodate proposed growth? What are they?

6.10 Telecommunications infrastructure has not been assessed as part of this investigation, the reason being, that new telecommunication infrastructure will be provided from the nearest suitable supply, with a number of providers likely to have assets in area, including BT Openreach, Virgin Media and Vodafone (Including Cable & Wireless).

Who will be responsible for paying for the necessary upgrades?

6.11 Where there is the requirement for new cable infrastructure to facilitate the growth requirements, the responsibility for the payment of this infrastructure would usually be with the developer.

6.12 BT will normally require developers to excavate and lay the necessary ducts and joint boxes, which BT Openreach provide free of charge, and construct the necessary chambers as part of the general highway construction works. All other works are typically undertaken by BT Openreach at their expense, provided each individual connection does not exceed £3,400.

6.13 Any upgrades to existing exchanges required will be determined when further detailed information is available, and the cost for these upgrades will usually be covered by BT Openreach.

6.14 In a dense urban environment such as the West Midlands, it is unlikely that this cost will be exceeded and we can therefore broadly assume that there will be no cost to developers, and thus no viability impact.

How can the Combined Authority help to create a more innovative and futureproofed network?

Smart city work would require very high quality telecoms networks. Planning could start now under the sponsorship of the CA

6.15 BT runs a number of exemplar projects across the UK, and could be encouraged to see the CA area (or major strategic sites within it) as a testbed for new G-Fast technology, which offers 80-500mbps speeds. These speeds are far beyond those available even to Ethernet users.

6.16 If G-Fast is not available, developers could be encouraged to install Ethernet connections to individual blocks of developments. This would provide very high speed access both on upload and download.

6.17 BT have stated elsewhere that they would like to see telecommunications provision planned in early, to reduce complexities around permission for streetworks. Vacant ducting/reserve channels could be provided for future rental/one off charges to reduce the need to dig up roads later.

Site-by-site work can be left to developers and local authorities. The CA is unlikely to have a role

6.18 As with the other utilities, the key factor will be the timely dialogue with BT Openreach and other telecommunication providers so that works can be planned and implemented well in advance. Clearly, the provision of thousands of new lines will require planning and implementation that will span years rather than months.

6.19 As plans mature, there will need to be discussions with BT and other operators regarding build over agreements, diversions, capacity upgrades and inset agreements.

Gas

6.20 National Grid Gas (NGG) is responsible for Gas supplies in the area.

Will network upgrades will be necessary to accommodate proposed growth? What are they?

6.21 NGG have advised that due to the long term nature of the study, available capacity cannot be guaranteed, as requests are assessed on a first come first served basis. This means that capacity available today is potentially not there tomorrow, and the information that NGG would be able to provide regarding current available capacity would be out of date by the time any development details were finalised.

6.22 Over the long term plan of proposed developments, there should be no show stoppers, as anything can be managed and completed with the right timing. However he accumulative effect of a large number of loads may well overload the upstream systems and these reinforcements can cause delays in "gas on dates".

6.23 It is envisaged any reinforcement projects identified will be delivered in a timely manner, subject to specific engineering difficulties.

6.24 Regarding funding sources, if a new connection to their system triggers a requirement for reinforcement of the network, an economic test is carried out to calculate the level of developer contribution.

6.25 NGG advised that all potential sites fall within areas which currently have existing gas infrastructure, therefore it is expected that the developments would be dealt with through the usual connections process, at which stage the available capacity will be assessed.

6.26 NGG have further confirmed that due to the way the network is managed, a more robust response would be subject to details around the phasing of the developments, firm load requirements, and more importantly any other developments built during the build programme which may have an effect of the existing network.

Who will be responsible for paying for the necessary upgrades?

6.27 Where there is the requirement for new infrastructure to facilitate the growth requirements, the responsibility for the payment of this infrastructure would usually be with the developer.

6.28 An economic test will be carried out to calculate the level of customer contribution of any network reinforcement required. NGG may offset a percentage of the overall cost, the extent of any offset would be confirmed when detailed quotations are available.

Are there network resilience issues that will need addressing over time? What can the CA do to assist?

6.29 Under the terms of their licence code of practice energy transporters / water companies are duty bound to ensure their supply networks are resilient and fit for purpose. They are also responsible for developing their network to meet forward demands.

Potable water

6.30 Seven Trent Water (Severn Trent Water) & South Staffordshire Water (SSW) run the potable water networks in the West Midlands.

Will network upgrades will be necessary to accommodate proposed growth? What are they?

Severn Trent Water

6.31 Severn Trent Water 2014 Water Resource Management Plan identified forecast supply shortfalls in the long term, as a result of the need to reduce abstraction from unsustainable sources and the potential impacts of climate change.

6.32 The future deployable output losses Severn Trent Water face are largely the result of changes to the operation of the River Wye and Elan Valley reservoirs, as required to meet the objectives of the Habitats Directive. Severn Trent Water's strategy for the Strategic Grid is to increase their focus on reducing leakage and demand for water, while providing an increase in sustainable deployable output and a more flexible supply system. Investment to deliver this strategy has been included in Severn Trent Water 2015-20 PR14 Business Plan with subsequent investment planned for subsequent planning period over the next 25 years.

6.33 In summary water resource is not expected to be a constraint to development across the West Midlands.

6.34 Distribution: Whilst it is envisaged that localised reinforcement work may be required to the water distribution network to accommodate planned development, further hydraulic modelling will be required once specific development proposals are known. However, overall it is not expected that water distribution would be a major constraint to planned development within the Severn Trent supply area.

SSW

6.35 The response from SSW with remains outstanding at the time of this report. We will forward findings if and when we receive them.

Who will be responsible for paying for the necessary upgrades?

6.36 Where there is the requirement for new infrastructure to facilitate the growth requirements, the responsibility for the payment of this infrastructure would usually be with the developer.

6.37 An economic test will be carried out to calculate the level of customer contribution of any network reinforcement required. water provider may offset a percentage of the overall cost, the extent of any offset would be confirmed when detailed quotations are available.

Are there network resilience issues that will need addressing over time? What can the CA do to assist?

6.38 Under the terms of their licence code of practice energy transporters / water companies are duty bound to ensure their supply networks are resilient and fit for purpose. They are also responsible for developing their network to meet forward demands.

Sewerage

6.39 Severn Trent Water (Severn Trent Water) run sewerage networks in the West Midlands.

Will network upgrades will be necessary to accommodate proposed growth? What are they?

6.40 Seven Trent water have advised that most of the locations identified are redeveloped areas and as with all development proposals the key issue with regard to sewer capacity in the management of surface water. In general accommodation of foul flows from the growth areas does not represent a big problem and whilst capacity issues need to be overcome through localised capacity upgrades, the additional flows are not usually an issue.

6.41 Severn Trent Water have advised that under Section 94 of the Water Industry Act 1991 sewerage undertakers have an obligation to provide treatment capacity for future domestic development. In addition there is also a requirement to ensure that their assets have no adverse effect on the environment and Severn Trent Water need to liaise closely with the Environment Agency to ensure they provide appropriate levels of treatment at each of our sewage treatment works.

6.42 Alongside the requirement to provide additional capacity for domestic growth there is also a requirement for Severn Trent Water to manage their assets efficiently to minimise customers' bills. Consequently there often will not be significant amounts of spare headroom at sewage treatment works but their investment programme will provide additional capacity to meet planned development needs as and when required.

6.43 Severn Trent Water do not foresee any constraints that will prevent accommodation proposed development up to 2031. It is expected that additional sewage treatment capacity will need to be provided at some time in the future but their investment will be phased to align with development plans as appropriate.

6.44 Severn Trent Water have provided further details on each Zone and area, which is included as Appendix F.

Generally, the sewerage catchment have reasonable capacity

6.45 Provided that surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as with all development, further detailed capacity assessments will be required once specific development proposals are available.

The only area with potential problems is the Coventry Zone 3 North Western Periphery

6.46 In this area the existing sewerage network in this area is usually small diameter with limited capacity. More detailed assessments will required once specific development locations are identified.

Who will be responsible for paying for the necessary upgrades?

6.47 Where there is the requirement for new infrastructure to facilitate the growth requirements, the responsibility for the payment of this infrastructure would usually be with the developer.

6.48 An economic test will be carried out to calculate the level of customer contribution of any network reinforcement required. Severn Trent Water may offset a percentage of the overall cost, the extent of any offset would be confirmed when detailed quotations are available.

Are there network resilience issues that will need addressing over time? What can the CA do to assist?

6.49 Under the terms of their licence code of practice energy transporters / water companies are duty bound to ensure their supply networks are resilient and fit for purpose. They are also responsible for developing their network to meet forward demands.

How can the Combined Authority help to create a more innovative and futureproofed network?

6.50 For the most part, providers found it hard to answer questions on how the CA might work with them to futureproof the network.

The CA should be aware of utility asset management cycles

6.51 Every 5 to 9 years, utility providers prepare an asset management plan (or equivalent). This is their opportunity to review the existing network, any projected growth, and put forward an investment plan for the next 5 to 9 year period.

6.52 These plans are submitted to the relevant regulator for review and approval. The regulator will agree what schemes the utility companies are able to pass onto the consumers.

6.53 As local authorities know, approximately two years prior to the submission of these plans, the utility providers enter into a period of consultation in order to produce the best estimate of growth for the next plan period. This is then transformed into a list of costed infrastructure schemes.

6.54 The local authorities have an opportunity to help guide what is included in the plans (and therefore what will be picked up by consumers) and what will be left to developers. A combined authority may be able to better communicate the growth challenges and what may be required to meet this growth.

6.55 The CA should be aware of the asset management plan periods and plan in advance for these to ensure that a sound estimate of growth it fed into the studies.

The CA could set up a smart networks strategy

6.56 New technologies are being developed which, over time, are likely to have a disruptive effect on current policies and infrastructure design. There are likely to be advantages in having the CA area at the forefront of these emerging technologies.

6.57 Much has been written on smart city systems. However, there is frequently relatively little definition of exactly what creating a smart city might involve, since they are more about the sum of the parts than any specific individual measure.

6.58 The original purpose of 'smart' is to better use system capacity by shifting demand peaks and therefore avoid or mitigate system investment costs. Consumers shifting their usage pattern may financially benefit as well. A consequence may be to reduce energy consumption and therefore CO2 reductions.

6.59 Smart city approaches could be adopted early at major CA development sites. Key 'smart' sectors might include utilities such as energy, water and waste. Transport and health care could also be affected. Our approach is to try to think in output terms about how adopting a smart city approach might actually alter the built environment – and therefore what we need to be planning for now. To give concrete examples, our findings suggest that smart systems could:

- reduce energy demand by influencing use and better matching energy demand with supply, thereby reducing both end user costs carbon emissions;
- potentially remove the need for the gas utilities grid to be put in place, so reducing build costs and therefore creating more headroom for affordable housing and infrastructure contributions. (An intelligently managed electricity grid using the low carbon nuclear base load could mean that gas provision could be redundant);
- manage sewerage and drainage demand and storage systems, again reducing the need for infrastructure spending;
- integrating sensors (such as traffic flow and air quality sensors) and information output systems into furniture such as street lighting; and
- manage transport demand by influencing behaviour and smoothing peak demand flows at interchanges and across network hot-spots.

6.60 EU funding is available for some proof of concept work, and could be separately investigated.

The CA could encourage open data for innovation

6.61 Open data standards and protocols will be pursued to allow software developers to create city data apps and plug-ins to assist movement and provide real time journey planning. Other innovative applications can be expected. The CA may wish to sponsor change across the West Midlands region in this area.

The CA could encourage the use of BIM techniques to improve the efficiency of the infrastructure delivery process

6.62 Building Information Modelling (BIM) techniques could be used to ensure a highly efficient approach to utilities delivery within the CA area overall, and specific strategic sites within it. The full application of BIM techniques can need finalised building designs, but the approach we are describing here seeks to apply BIM concepts to the planning and delivery of infrastructure. A BIM approach to infrastructure planning could be run through a GIS based model then later transferred to a full 3D modelling package once a masterplan 'fix' is reached (at least for the primary infrastructure). This would highlight major delivery, cost and cashflow issues over time, and by place.

6.63 The benefits of this approach could be as follows.

- Cost control: integrated building and infrastructure design in a BIM format can drive cost modelling, allowing better cost control.
- Cashflowing investment: the output allows total cost and cost phasing to be understood more accurately, allowing better control of cashflow.
- Site sequencing: together, the costing and phasing information may influence phasing of infrastructure delivery decisions around how, which and when particular land parcels are delivered.
- Intelligent co-ordination of delivery: BIM techniques mean that it is possible to spatially plan infrastructure more effectively. This will stop the often uncoordinated approach to laying utilities which results in roads being dug up and re-laid multiple times.

7 MAXIMISING THE OPPORTUNITIES OF OTHER INFRASTRUCTURE INVESTMENTS

Introduction

7.1 The UK Government plan to invest over £100 billion of public money on infrastructure over the course of the Parliament.[24] It would seem sensible to maximise the positive impact of that expenditure in the West Midlands.

7.2 There are a range of opportunities. In some instances, the themes set out below might not have a direct influence on the development of housing and jobs sites. However, these areas remain important, because they have an indirect bearing on the future economic success of the West Midlands. In particular, they can have the following effects.

- Help to attract and retain skilled workers. A good quality of life is a good thing in itself. However, regions with a good quality of life confer upon themselves important economic advantages. A good quality of life is critical for the attraction and retention of skilled workers who are able to participate in the knowledge based industries which are fundamental to future prosperity. Infrastructure has a significant role in creating a good quality of life. There is also a role for using infrastructure provision to bring new opportunities to deprived areas, so spreading economic activity equitably across different areas and groups and further growing the pool of skilled job-ready workers. This will itself release more productive capacity into the economy, and land and labour which is currently under-employed is brought into employment.
- Help to create an innovative and resilient economy. The West Midlands wishes to use new technologies to position the area in some of the technological innovations of the future. We also wish to improve the resilience of the infrastructure in the WM area, and help to rebrand the area.

[24] http://www.parliament.uk/business/publications/research/key-issues-parliament-2015/industry-infrastructure/infrastructure/

Figure 7.1 Report stages and objectives

Reinforcing growth with public realm improvements

7.3 The social and economic benefits of a high quality public realm and the productivity gains arising from well-designed urban spaces and workplaces occur in the form of externalities. These positive externalities are not generally rewarded by the market, yet their true value can be much greater than the cost incurred in making them available. The Egan Review argues that "over many years and in many places there has been a failure of the planning system and the way it has been operated to deliver desired outcomes. It has too often resulted in poor quality places."[25]

7.4 There is good evidence that these points are well understood across the West Midlands. Masterplans for UK Central and Curzon Street show a serious attempt to create a strong public realm. Public realm works at key sites and town centres are being integrated into transport budgets in encouraging signs that a holistic approach to dealing with public realm are in place. For example, the ITA's plan long-list includes public realm projects at Snow Hill, Wolverhampton and Coventry that will accompany public transport investment. Coventry's work in Friargate, Cathedral Lanes and university expansion is delivering inward investment as a direct result. Finally, public realm investments in West Bromwich have fulfilled a number of objectives – notably a strong improvement in the UK's retail rankings - although the

[25] The Egan Review (2004) *Skills for Sustainable Communities* p.38

evaluation points out that findings cannot be solely attributed to the public realm interventions, as the public realm interventions were part of a wider regeneration programme.[26]

7.5 There is a strong rationale for continuing focus on public realm quality across both new and existing places in the West Midlands. This work is likely to need to be accompanied by a significant change to better fit some town centre uses to changed economic circumstances.

7.6 Town centres will be critically important in future. Their importance goes beyond their retail function, because they are the 'public face' and skilled workers of a locality, and create the environment that will either embed economic processes locally, or encourage them to leave.

7.7 Future work may also be focused around key opportunity sites in order to reinforce delivery at important points around the West Midlands.

Reinforcing growth with walking and cycling provision

7.8 Given the large number of people moving in the area, it is vital to relieve pressure on transport capacity and connect key origins and destinations to sustainable modes, by encouraging high levels of walking and cycling.

7.9 Increased levels of walking and cycling create health benefits, directly to the user through aerobic benefits. There is also a wider network effect for other city centre users, with increased levels of walking and cycling creating social and environmental benefits for wider society. This will be assisted by building high quality public spaces, complimenting development and providing an external environment people want to be in. This would include wide pavements, dedicated cycle ways, safe crossing points, high quality lighting, good signage and design approaches which consider safety and security. Policy objectives could include

- Better places for everyone. New bike and pedestrian routes could create green corridors, with more tree-plantings, more space for pedestrians and less traffic.
- A network of direct, high capacity, joined-up cycle tracks.
- Safer streets for the bike and pedestrians
- More people travelling by bike and on foot

7.10 Emerging work on towpath networks could provide a strong start. Centro is working in partnership the Canal & River Trust charity, Dudley, Sandwell, Walsall and Wolverhampton councils to deliver the Managing Short Trips project, which aims to make it easier for walkers and cyclists to travel in the area.[27] This is a £4.2 million package of schemes to boost cycling and walking. The project has been funded by

[26] WYG for Sandwell MBC (2015) *West Bromwich Town Centre Health Check 2015*

[27] Black Country to get £4.2 million cycling and walking boost Monday, June 08, 2015 http://www.wmita.org.uk/news/2015/black-country-to-get-%C2%A342-million-cycling-and-walking-boost.aspx

the Black Country Local Enterprise Partnership Growth Deal. More than 26 kilometres (16 miles) of canal towpaths will be improved. The project will support the aims of the landmark West Midlands Cycle Charter which was formally launched in 2014 by the West Midlands Integrated Transport Authority.

7.11 Whilst cycling is unlikely to shift very large volumes of people, broader work on cycling might effect a broader cultural shift that itself could become self-reinforcing.

Other infrastructure initiatives in the West Midlands

7.12 These other infrastructure initiatives lack a likely direct impact on site values. However, the CA is likely to have a useful role in sponsoring change across the West Midlands, and spreading best practice.

Green power generation

7.13 There are significant emerging opportunities around the possibility of green power generation. These technologies might have a number of benefits. Firstly, they would create lower carbon dioxide emissions; secondly, they might create revenue generation opportunities for local authorities; thirdly, they might allow the West Midlands to further move away from its old 'smokestack' image, with consequent investment and quality of life benefits; and fourthly, there may be fuel poverty benefits.

- Opportunities for large scale wind power generation at industrial sites could be further explored. Examples include the Ecotricity turbines at the Ford Dagenham plant.
- Biogas power generation opportunities are being explored by Birmingham.
- Coventry already burns waste, feeding significant power into the grid. Other parts of the West Midlands might be able to use some of this learning. Through the universities and Catapult funds there is the possibility for BCC to tie in over £300m in funding to look at producing energy from waste.

Air quality

7.14 In 2011, the metropolitan area economy lost nearly 300,000 work days from sick and hospital admissions linked to poor air quality. Frequently, the problem is one of strategic national infrastructure (such as the M5 and M6) creating very significant costs for the area. These issues particularly afflict more deprived areas.

7.15 Various solutions are being investigated, and work is ongoing. The CA and its constituent authorities will build on current work in rolling out low emissions vehicles and associated infrastructure and the work of the WM Low Emissions Town and Cities Programme (LETCP). The CA and its constituent authorities plan to explore low carbon refuelling infrastructure linked with local energy production and infrastructure.

Using infrastructure technologies to build innovation and product markets in emerging technologies

Using telecoms networks to pilot a new generation of driverless cars

7.16 There are a series of applications of these technologies to the automotive R&D and the emergence of driverless vehicles and logistics technologies. Two factors combine to make Coventry a particularly attractive location for the development of these technologies.

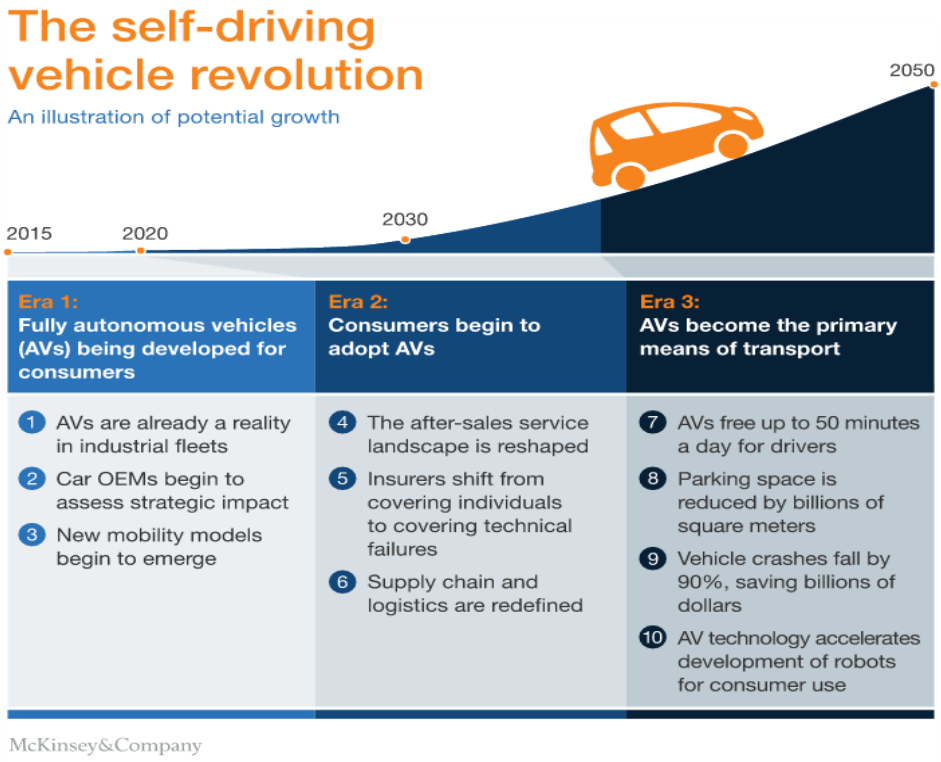
- Coventry has an established leadership in advanced manufacturing technologies.
- Coventry's lead has its own fibre optic and wireless network. Coventry is now one of the UK's first 'one gigabit cities' and has European City Lab status. Municipal services such as cameras and traffic management technologies take advantage of the wireless nodes around city, and run on dedicated highly secure bandwidth.

7.17 Self-driving cars are expected to emerge from around the mid-2020s (see Figure 7.2), with possible significant benefits for congestion[28] and emissions.[29] Clearly, given the challenges facing the West Midlands, there will be significant advantages in being towards the front of this adoption process, quite apart from the industrial benefits of being a test-bed for the technology.

[28] Research by McKinsey states that "Fewer roads would need to be built, because cars would travel more closely together. Today, optimal capacity on a freeway is about forty to fifty cars per mile. Once you get to around 200 cars per mile, we call it a severe traffic jam; speeds drop to below 15 mph. If Google cars coordinated, we could fit 320 cars per lane per mile at highway speed. That's the equivalent of making a four-lane highway into a thirty-two-lane super freeway. We can stop building new roads. We will also be able to reclaim most parking lots; they could be used for building or turned into green space. Many self-driving cars would just head off to pick up another passenger." McKinsey *Resource Revolution: How to capture the biggest business opportunity in a century* 'The Recipe For Tenfold Resource Productivity Improvement'

[29] Computer optimized driving has been shown to cut emissions by as much as 60 percent.

Figure 7.2 Self-driving vehicle adoption rates



Source: McKinsey[30]

7.18 Coventry's expertise could be rolled out across the CA area, so improving Coventry's competitive advantage, and allowing the rest of the CA area to benefit from this learning process.

Providing a test bed for new infrastructure engineering

7.19 The next generation of 'very light' rail vehicles is to be built in the Black Country with the intention to pilot a system between Dudley and Dudley Port in Sandwell (although as noted previously, this is subject to decisions made about metro route extension alignments). There are associated opportunities for UK manufacturers, universities, and local authorities to create a world class research, development and educational centre focussed on the creation of innovative very light rail vehicles, infrastructure and skilled personnel for the next generation of public transport solutions.

Using infrastructure to promote a more equal distribution of wealth

7.20 The 'right social environment' is important to growth. Higher social capital and trust is correlated with a more prosperous society.[31] [32] Equity considerations are a wider

[30] McKinsey & Co (2015) *Ten ways autonomous driving could redefine the automotive world* http://www.mckinsey.com/insights/automotive_and_assembly/ten_ways_autonomous_driving_could_redefine_the_automotive_world

[31] Fukuyama (1999) *Social Capital and Civil Society* The Institute of Public Policy http://www.imf.org/external/pubs/ft/seminar/1999/reforms/fukuyama.htm

impact in the Government's transport appraisal methodology[33] and the Treasury Green Book.[34]

Public transport route alignments have been designed to reach deprived areas

7.21 A number of planned PT improvements run through deprived areas.

- Metro extensions through North Solihull increase access to jobs at the airport, NEC and UK Central;
- Planned SPRINT lines run through the more deprived parts of the Black Country and east Birmingham, and connect residents to job opportunities in both central Birmingham and the Black Country centres.

Job opportunities at the airport and links to local labour markets

7.22 Birmingham airport is a very significant local employer. 6,500 workers are currently employed at the airport, with plans to expand as passenger numbers rise. An additional 4000 onsite are estimated to arise from recent runway expansion plans.

7.23 However, local transport linkages to the airport are poor. This means that accessing employment opportunities from the local (frequently relatively deprived) areas of North Solihull is more difficult than it should be. Local transport infrastructure will be put in place to improve this labour market relationship. This will create advantages both for the airport, and for the local area.

[32] Coyle (2007) *The Soulful Science* 219 quotes Knack and Keefer 1997 Does social capital have an economic payoff? A cross-country investigation *Quarterly Journal of Economics* 112: 1251-88

[33] Distribution and Equity Analysis (WebTAG Unit 3.8.3)

[34] HM Treasury (2003) *The Green Book: Appraisal and Evaluation in Central Government*

8 A FOCUSED PLANNING AND INFRASTRUCTURE STRATEGY

Introduction

8.1 This chapter looks at how that CA might work to create a focused, de-risked and developer-friendly strategy for the West Midlands which integrates land use planning with infrastructure investment.

Figure 8.1 Report stages and objectives

Towards a focused and punchy strategy

A fractured strategic picture creates investment risk and reduces growth

8.2 The process of undertaking this study – which has required that we obtain a consistent picture of planned growth, and the infrastructure plans that relate to this growth – has demonstrated to us just how complex the strategic planning picture in the West Midlands is. We believe that this complexity is likely to cause genuine negative effects.

- Any strategic public or private investor is faced with the same level of complexity, confusing the market, and increasing levels of perceived development risk.

- Viability of sites remains an issue, with no clear strategy or support to remediate sites.
- Key sites fail to gain momentum, with no clear focus of responsibility for pro-active planning or delivery of enabling infrastructure.
- Management effort from planning and regeneration teams is fractured and duplicated.

8.3 A clear strategic Local Plan picture has yet to emerge in Solihull and Coventry, although work is moving on. Birmingham and the Black Country have a clear view of strategic growth, although the Black Country will need to review and roll forward their plans from 2026 to 2031. Birmingham have not articulated any priorities between the growth zones specified.

The approach taken could be sharpened

8.4 In our view, the approach taken by existing plans is intellectually respectable. The plans in the West Midlands tell a coherent story. But, in our view – which is necessarily partial, and takes no account of local political realities – a sharper focus might help.

8.5 Across the West Midlands,

- The Regeneration Corridors and zones are geographically too large to highlight individual site level opportunities.
- Hard decisions are needed about which strategic centres have a genuine, market-viable prospect of attracting certain types of employment floorspace (such as office space), meaning that good quality decisions on the right level of infrastructure cannot be taken.
- In our view, there has historically been too little focus on the importance of linking the areas into central Birmingham to create the agglomeration economies needed for knowledge-based industries.
- Finally, current land use strategies are frequently attempting to bend investment into old employment sites within the urban areas. Experience is suggesting that this is frequently unsuccessful. Our work on employment land in the West Midlands shows that investors want sites on motorway junctions.

8.6 The institution of the CA, and the state of flux of planning strategy across the West Midlands, provides a major opportunity to make improvements and integrate the strategic planning and infrastructure investment picture. These changes present a chance to clarify infrastructure and land use plans, with the objective of better driving strategic delivery and investment.

8.7 The West Midlands needs a way of pulling this picture together into a focussed planning and infrastructure strategy. Below, we make some suggestions, based on best practice elsewhere.

Creating Opportunity Areas

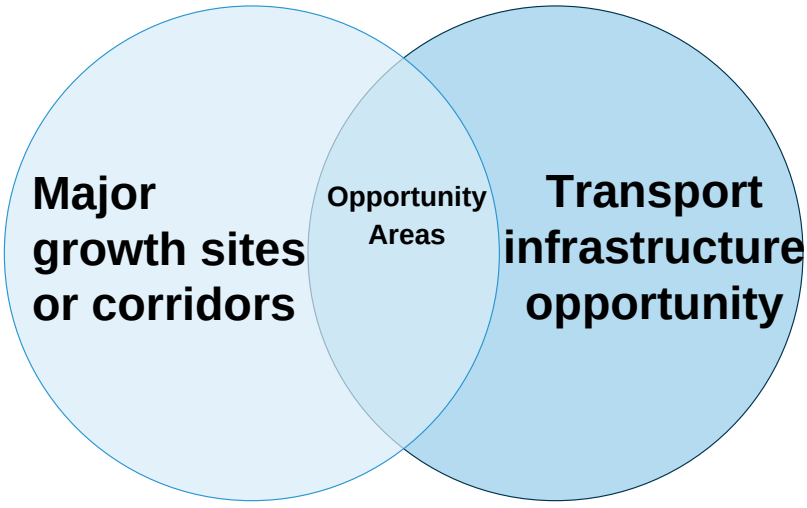
An Opportunity Area approach could focus investment

8.8 The London Plan covers an area of similar complexity to the West Midlands. In London, the strategic planning picture is made more tractable through the successful use of two main designations to accelerate growth and regeneration. These are Opportunity Areas and Areas of Intensification.

8.9 The Opportunity Areas are valuable in bringing focus to what would be otherwise a very complex London Plan. This type of approach could be usefully adopted in the West Midlands. Given the institutional bias of the investment community towards London and the south east, it may even be advantageous to the West Midlands to use the same nomenclature as London.[35]

8.10 Opportunity Areas are the focus of attempts to raise the ability of London to house a rapidly growing population and create commercial space for jobs. The London Plan has 38 Opportunity Areas. 23% of new housing capacity identified by the boroughs being in the Areas. The Areas vary in physical size and growth potential, but typically each can accommodate at least 5,000 jobs, 2,500 new homes, or some combination of the two.[36] These are not just large sites: they are large sites that are also linked to existing or potential improvements to transport accessibility (see Figure 8.2).[37] Crossrail has been a particular driver of the creation of Opportunity Areas, with many of the sites being located near to new Crossrail stations.

Figure 8.2 The characteristics of Opportunity Areas in the London Plan



8.11 Alongside Opportunity Areas, the Plan also contains Intensification Areas. These are built up areas with good existing or potential public transport links and can support

[35] Henneberry (2000) found that bias towards the South East 'has resulted in a very uneven regional distribution of development and investment'. Simon Guy and John Henneberry (2000) *Cultures of development: property and urban regeneration*

[36] London First (2015) *Opportunity Knocks*

[37] Typically they can accommodate at least 5,000 jobs or 2,500 new homes or a combination of the two, along with other supporting facilities and infrastructure.

redevelopment at higher densities. They have significant capacity for new jobs and homes but at a level below that which can be achieved in the Opportunity Areas. These are generally of less interest to developers and planners in comparison to Opportunity Areas.

8.12 Opportunity Areas have seen the introduction of Opportunity Area planning frameworks, which are adopted as Strategic Planning Guidance to the London Plan.

Towards a list of West Midlands Opportunity Areas

8.13 Our work provides a start towards a list of West Midlands Opportunity Areas. We have identified a list of sites which have both significant development potential strategic importance, plus a good relationship to public transport plans. More work will certainly be required on this list. We do not offer it as a finished product, but as the start for further discussion.

8.14 The Opportunity Areas that we have suggested below are not simply the biggest sites in jobs and housing growth terms. We have taken account of strategic importance and longer-term growth potential – meaning, for example, that we have included UK Central interchange on the list, even though it is still relatively modest site by 2031 when set against others in the West Midlands. (Growth at the interchange will be much stronger after 2031). We have also not included Longbridge or Blythe Valley on the list, believing that these show every signs of future success, and so are unlikely to derive particular added value from becoming Opportunity Areas.

8.15 A major objective of future work should be it take these broad areas and identify the key Opportunity sites which sit within them. These sites should then become the focus of concerted efforts to get the sites moving.

8.16 In order for growth to ripple out from the OAs, each authority will need to understand what complementary planning and connectivity is required to link these to the wider areas. The CA will need to take responsibility for driving value and connectivity to surrounding areas. This can run along with their CA Local Plan timescales.

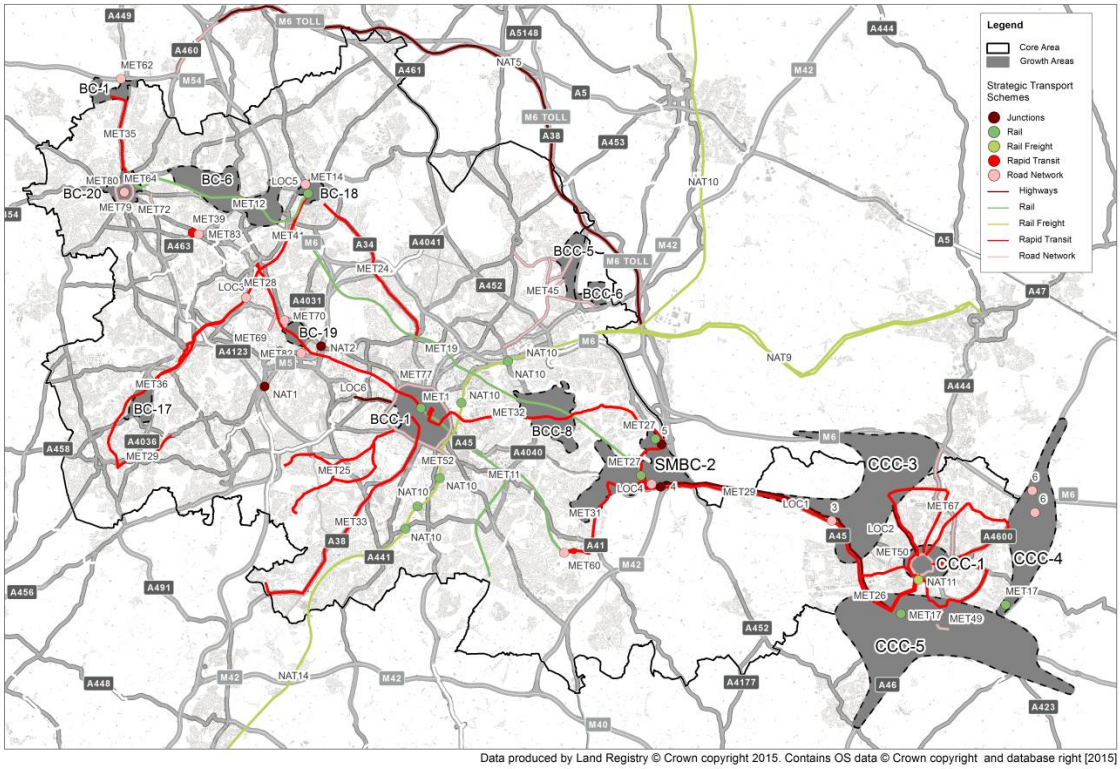
Table 8.1 Possible West Midlands Opportunity Areas with supporting infrastructure schemes

	Opportunity Area	Infrastructure scheme	Planning area	Housing by 2031 (units)	Jobs by 2031
1.	Birmingham city centre	Range of PT infrastructure interventions including Snow Hill, Metro extensions, Sprint, Camp Hill Chords	Birmingham	12,800	36,893
2.	Peddimore	Sutton Coldfield PT package (Sprint element)	Birmingham	-	7,214
3.	Langley	Sutton Coldfield PT package (Sprint element)	Birmingham	5,000	
4.	Selly Oak	Longbridge to Birmingham Sprint	Birmingham	700	4,500
5.	Eastern Triangle	Metro extension east	Birmingham	1,000	2,016
6.	Brierley Hill	Metro extension west (Brierley Hill to Birmingham via Wednesbury)	Black Country	4,105	27,152
7.	Walsall	Range of PT interventions.	Black Country	1,457	26,539

	Opportunity Area	Infrastructure scheme	Planning area	Housing by 2031 (units)	Jobs by 2031
		Metro extension, A34 Sprint. Walsall Gateway.			
8.	West Bromwich	Metro extension west (Brierley Hill to Birmingham via Wednesbury)	Black Country	511	25,314
9.	Wolverhampton	Walsall to Wolverhampton rail; city centre ringroad; i54 Sprint	Black Country	2,271	26,988
10	Pendeford/ Fordhouses including Black Country Enterprise Zone - I54	i54 Sprint	Black Country	-	2,893
11	Wednesfield - Willenhall – Darlaston including Black Country Enterprise Zone - Darlaston	M6 Toll alterations; J10 upgrade (already committed)	Black Country	-	16,780
12	Coventry north east periphery	SPRINT Cloverleaf.	Coventry	4,000	11,000
13	Coventry north west periphery	SPRINT Cloverleaf. Warwick University UK Central Sprint A45	Coventry	6,500	6,000
14	Coventry south periphery	SPRINT Cloverleaf	Coventry	5,000	16,000
15	Coventry centre	SPRINT Cloverleaf; station track remodelling; ringroad	Coventry	5,000	17,500
16	Solihull UK Central Interchange[38]	Metro extension and other supporting infrastructure developments (plus HS2 not dealt with here)	Solihull	1,300	7,461

[38] The growth at Solihull UK Central Interchange is projected to run from 2017/18 to 2045/46. The growth shown in this report is based on projected growth to 2031 (which equates to 38% of the total housing for the area and 45% of the total jobs for the area).

Figure 8.3 Possible Opportunity Areas ('growth areas' on key) showing strategic infrastructure



Data produced by Land Registry © Crown copyright 2015. Contains OS data © Crown copyright and database right [2015]

The key infrastructure projects which bring forward Opportunity Areas

8.17 This analysis suggests that there are a number of key infrastructure packages which bring forward development sites. These are as follows:

The Metro package

- This is the East West Link – with development at HS2 UK Central Growth Pole, Brierley Hill, intermediate sites along route, hooking into central Birmingham. Located in Black Country, Birmingham, Solihull, and creating benefits across the West Midlands.

The Sprint package

This includes A34 Sprint, I54 Sprint, Longbridge to Birmingham Sprint, Warwick University UK Central Sprint A45, Sutton Coldfield PT package (Sprint element) and Sprint Coventry Cloverleaf

The road package

- The M6 Toll free at point of use scheme reinforces sites up the classic M6 corridor, and potentially releases new capacity at junctions around the M6 Toll, and along the A38 and A5, with effects in the Black Country, Lichfield and North Warwickshire. The Wolverhampton city centre ringroad, Coventry city centre ring

road, Keresley A45-A444 link, and other infrastructure developments in UKC to support developments.

The rail package

- Snow Hill and the Camp Hill Chords – especially north chord - new stations, Walsall Gateway, Walsall to Wolverhampton rail, Coventry track remodelling and reinforcement of the central Birmingham office core.

Reinforcing the Opportunity Areas

8.18 Having arrived at a list of Opportunity Areas, we believe that all policies should be aligned around them to maximise their chance of success.

8.19 We talk about how this can be achieved in the next section.

The need to prioritise

Prioritising the Opportunity Areas

8.20 The list of Opportunity Areas is itself quite extensive. Prioritisation within this list will need to be undertaken.

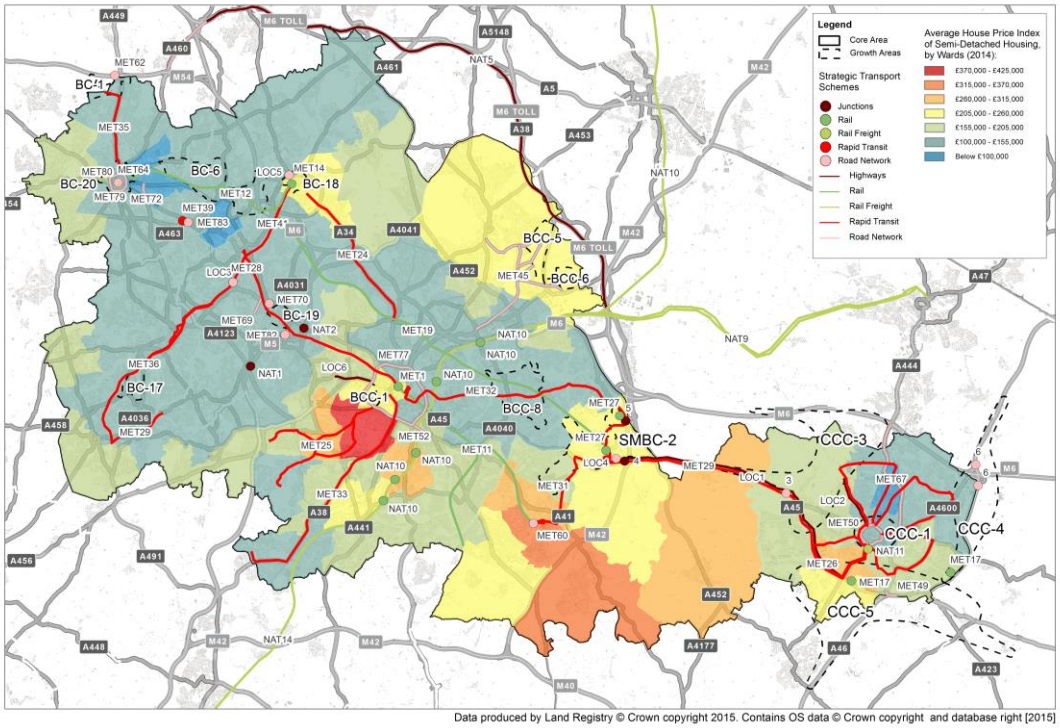
8.21 Our suggestion would be to concentrate at least some effort initially on areas which are relatively close to being market viable. This does not mean that those disadvantaged areas should be ignored. There are equity reasons why the most disadvantaged areas are likely to need a particular policy focus. But given the scarcity of funding, and the pressure to get housing numbers up, it is likely to be the case that at least part of the available resources will need to be focused on sites which are near to being viable, and need relatively small amounts of assistance to get them delivering. This will provide a sense of momentum.

8.22 It may also be possible to see value spreading out of an adjacent higher-value area onto a site or funds from the developments being used for infrastructure improvements in less viable areas.

8.23 Figure 8.4 maps residential values against transport schemes and our suggested Opportunity Areas. Residential values give a very broad proxy for viability, and provide a starting point for future analysis. We explain more in Appendix B.

8.24 We do not intend to set priorities in this report. If the CA wishes to adopt this approach, priorities will need to be set by elected members and their officers.

Figure 8.4 Possible Opportunity Areas with house price zones and key infrastructure provision (a proxy for development viability)



Prioritising infrastructure schemes

8.25 Costs are high, and careful prioritisation work will be needed. It is clear from this study that, of the £1.6b-worth of transport projects on the unprioritised ITA longlist, around half of the cost is on metro extensions. These costs are likely to need close attention, and it may be necessary to explore whether there are other, more cost effective alternatives available.

8.26 A review of what tram, light rail or other rapid transit options are available and which routes should be taken, is being undertaken through the Black Country rapid transit strategy review. This is being carried out by Centro in partnership with the four councils.

8.27 The Black Country rapid transit strategy review is likely to determine which routes and types of vehicle can offer the best options in terms of connectivity, economic benefit and value for money. It will determine what options could be built within the next five to ten years and confirm the preferred lines of route so local councils had clarity about what land would be needed. The review will feed into and shape a wider West Midlands Strategic Transport Plan.[39]

[39] http://www.wmita.org.uk/news/2015/proposed-review-of-black-country-rapid-transit-strategy.aspx

Other strategic work needed

Reviewing demand management strategies

8.28 Managing demand for roads and utilities infrastructure is likely to be significant part of longer term planning for the West Midlands. This approach is frequently cheaper than predicting demand, and then attempting to provide for all of it.

8.29 Smarter transport networks are important here. They can help manage the relationship between demand and supply of infrastructure, allowing the more productive use of infrastructure.

8.30 Congestion charging in the West Midlands was previously looked at in 2007. Proposals looked at a cordon charging scheme which extended to the West Midlands metropolitan area. Proposals were not taken forward due to political sensitivities at the time. However, if congestion increases, it may be necessary to revisit these proposals. Congestion charging may be able to create a valuable funding stream for public transport, improve air quality and improve journey times along with potential savings for businesses.

8.31 Proposals would need careful political preparation, but are likely to become more politically palatable if congestion in the metropolitan area rises in line with projections.

Freight consolidation strategies could help

8.32 The concept of freight consolidation in urban areas is a means of reducing the number of delivery vehicles visiting an area of operation such as a city centre. As a consequence it also supports:

- reductions in the number of vehicle kilometres
- better vehicle and driver utilisation for suppliers as a result of quicker turnarounds (and a potential reduction in the number of drop locations) and for deliveries through easier access to loading and unloading facilities at drop locations
- improvements in volume/weight utilisation rates for vehicles on deliveries from the centre (and potentially for inward flows from suppliers too), thereby reducing the unit costs of transportation for the final delivery stage
- fewer vehicles required within the area served by the consolidation centre
- the ability to separate trunk movements from local deliveries, making the use of alternative modes and vehicle types more feasible (e.g. environmentally friendly vehicles such as bikes or electric vans within the urban area, and rail for trunk movements into the consolidation centre)
- ease of access for suppliers to drop-off goods, reducing the time spent driving to the delivery address and accessing the point of delivery by the driver, who may only have a small quantity or a single item to deliver in any case
- opportunities for revenue earning return loads.

8.33 The physical size of the consolidation facility does not have to be especially large, since the aim is to cross-dock consignments in a short timeframe (e.g. a day or two).

Some FCCs are set up utilising spare capacity in a larger warehouse which is a shared user approach. Larger facilities can offer value added services such as providing secure stockholding areas for retail users, or removing packaging and packaging waste.

8.34 The cost associated with an FCC is very dependent on the rental cost of light industrial or warehouse units. An FCC can operate successfully with one warehouse operative, two drivers and an administrator. A greater number of users could significantly reduce the operations cost.

HS2 construction logistics strategies could help

8.35 The impact of HS2 construction represents a major transport impact in itself. Impacts on construction in both Solihull and Birmingham city centre may be cross-border, so there may be value in CA involvement.

Integrating with Highways England economics work

8.36 HE is currently working to understand the main economic opportunities resulting from future investment on highways network through unlocking sites by junction improvements or continuing to support growth in an area where there are capacity constraints.

8.37 HE are at an early stage in their thinking, but the thematic focus of the work makes it highly relevant to this study. Geographically, too, the work is relevant, because the HE's pilot stage mapping covers the West Midlands. HE are (at the time of writing) assimilating data on congestion, planning applications, and growth capacity in published land use plans and constraints, and understanding local development markets.

8.38 We recommend working with the HE on the way that this work develops in the CA area. It would be useful to influence HE's thinking, particularly around the possibilities for supporting the agreed list of Opportunity Areas. In turn, the HE work might allow CA thinking to develop further and also influence local plan allocations.

Resilience

8.39 In the course of this study, the point has been made to us that there are serious potential problems with the resilience of infrastructure in the West Midlands. One example is around road infrastructure: the cumulative effect of a number of significant road construction or maintenance works could have major effects across the network, particularly if combined with HS2 construction work and housing development activity.

8.40 The CA may be able to combine thinking on how to improve resilience, both in single areas (such as, say, water infrastructure) and cumulatively.

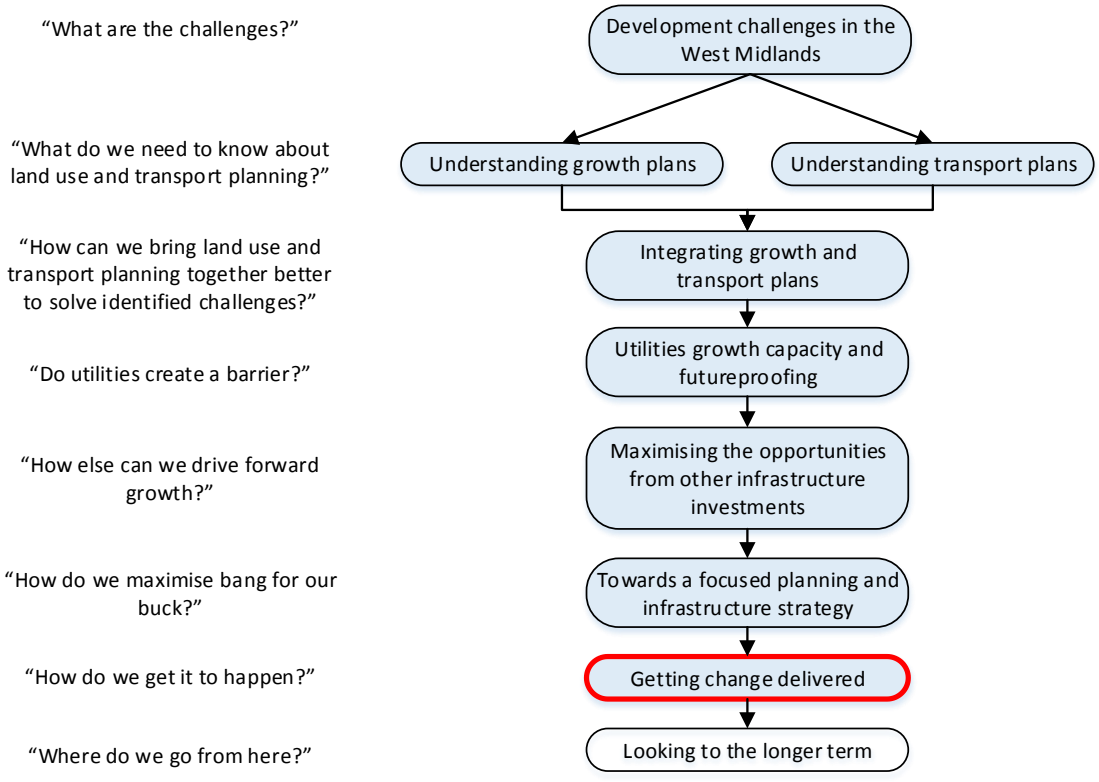
9 GETTING CHANGE DELIVERED

Introduction

9.1 We believe that the CA is likely to have an important role in getting change delivered on the ground. As we have shown, infrastructure provision will be one of the key ways in which jobs and housing sites will be released. The scale of the growth involved, and the cross-border nature of the issue, firmly suggests that cross area strategic governance is required. The CA will be able to

- Create a valuable strategic lead by building a coalition for change in the West Midlands across a wide range of stakeholders, and a shared view of what that change might consist of;
- Knit together a complementary package of supporting strategies across LA boundaries;
- Work collaboratively with Centro to work collaboratively on shaping planning and delivery; and
- Provide added value in delivering local objectives, for example by providing support for implementing cross borough strategies and initiatives.
- Help to create a level of political consensus between the constituent parts of the CA, and between the CA and central Government.

Figure 9.1 Report stages and objectives

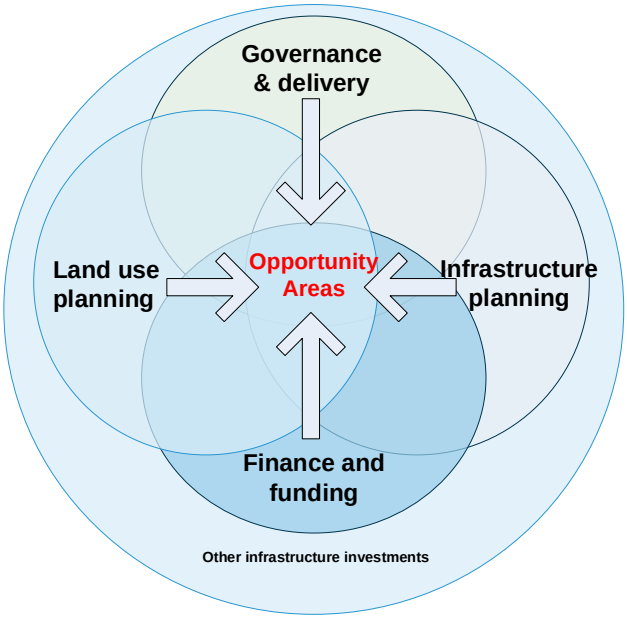


Getting the Opportunity Areas delivered

9.2 Having arrived at an agreed list of OAs, the CA will need to build up a package of governance, land use and infrastructure planning, and funding and financing support at each Opportunity Area. The objective must be to create development momentum at the sites.

9.3 This may require land assembly, land remediation, and/or assistance with the relocation of some of the existing uses, particularly industrial activities. Each London Opportunity Area is supported with a rolling programme of further support which intends to de-risk investment driving out information and building a shared understanding of delivery between public and private sectors.

Figure 9.2 Focusing effort around the Opportunity Areas



Focusing land use and infrastructure planning at the Opportunity Areas

A planning framework will be needed at each Opportunity Area

9.4 Opportunity Areas should be supported by a planning framework. In the West Midlands, Area Action Plans are frequently used. In London, the Opportunity Area Planning Frameworks take a similar role. These documents should set out a market-viable vision for the future of a site (viability is an element which is crucial but frequently overlooked). It should explain the type and form of development sought, a development trajectory, a high level outline of supporting infrastructure, and land assembly and remediation necessary to deliver the site.

9.5 The work carried out in the Birmingham plan on particular growth zones represents a very good start for this work.

Planning frameworks will need to be supported by Development Infrastructure Funding Study (DIFS) or similar

9.6 A DIFS (Development Infrastructure Funding Study) will be prepared for each Opportunity Area in London. Closely tailored to each Opportunity Area, the central essence of the work is to get to the bottom of

- The commercial viability of planned growth
- What infrastructure is required to support the growth planned in an area;
- When that infrastructure is required;
- How much infrastructure costs; and
- How infrastructure can be funded.

9.7 The DIFS encourages better co-ordination of the complex processes behind strategic site regeneration. The DIFS study encourages and enables co-operation between public and private sector actors, and within a wide range of public agencies. The market cannot provide this itself. Instead, the DIFS provides this co-ordination, which increases confidence and investment.

9.8 The process of preparing the DIFS study is itself valuable, because it spreads information between commercial actors and the public sector. The DIFS process creates a better understanding of the different investment intentions of different parties, resulting in de-risked investment decisions, and innovative solutions that no one party could have arrived at alone.

9.9 This framework has, in effect, already been used in the West Midlands. The UK Central Hub has been effectively treated in precisely this way, with significant progress being made. We also understand that the recently agreed LGF Due Diligence Fund will provide authorities with a means to undertake more feasibility work on specific sites in the pipeline, many in private ownership so will involve partnership working.

Creating the right project governance and delivery structures at the Opportunity Areas

Writing a delivery ‘Roadmap’ for each Opportunity Area

9.10 The Roadmap would need to be a very practically orientated project plan that would help to get infrastructure actually in place. It would take a very direct, task-oriented approach to delivery. It would undertake the following tasks.

- Understand how to solve real-life issues on the critical path. The project management concept of the “critical path” is used to understand which issues form a barrier to progress on an individual project. The issues on the critical path are those which directly impact the planned project completion date. Management intervention and funding could be focused on these issues.
- Identify and help manage delivery risks. These are substantial and include . cost escalation, the provision of land and powers for proposed infrastructure projects,

the assessment of the financial and business cases, and the identification and co-ordination of utility provision.

- Focus on how any problems will be resolved – in a very head-on way;
- Define issues in time sequence. This would allow the focusing of resources on short term issues and a process of active planning for medium term issues. Longer-term problems (where it is clear that fundamental changes in funding regimes or market conditions are required) could be left for future work;
- Help the political process by clarifying decisions that need to be taken, when they need to be taken, and what the ramifications of choices might be.

9.11 This could have a very important role in getting projects delivered on the ground.

9.12 Should an active project management approach be adopted, this could include each "project" comprising the following.

- A project sponsor. This needs to be a senior officer who has the experience and line management authority to break through internal organisational silos.
- A clearly defined project manager. This individual would be held responsible for project progress and delivery.
- A clearly defined project team and project management structures.
- Excellent links between the project team and developers/investors. We are not saying that any development should be waved through. But the public interest is not necessarily inimical to the private interests of the developers. The CA needs to operate as a joint delivery partner alongside the developer in assisting delivery.

Delivering new utilities supplies

9.13 Delivering utilities infrastructure can generate some formidable costs, particularly in areas of greenfield development at sites such as UK Central Interchange. These costs are difficult for development to absorb because a) in many cases they will be incurred in advance of sales, and will therefore needed financing upfront, and b) they are of a sufficient scope to affect a number of different landowners, and will therefore require careful co-ordination between actors.

9.14 Experience from elsewhere suggests that waiting for signals through the planning process before undertaking the necessary strategic utilities work can cause substantial difficulties. There are risks that a site-by-site response can mask the risks that cumulative loads will overwhelm the available infrastructure supply; and there is a greater risk that plans will not be able to get built into the asset management and improvement proposals for their networks. The length of coverage of the plans varies according to the utility but they are generally of between five and seven years duration. It will be highly beneficial to all stakeholders (the Local Planning Authority, the utility network providers and developers) if strategic developments are brought to the fore at the earliest opportunity.

A Strategic Energy & Utilities Delivery Group could be created

9.15 The West Midlands might usefully look at London's approach to utilities delivery. London has created a Strategic Utilities Board which is chaired by the Mayor of London and is comprised of the Chief Executives from each of the utility companies active in the area. The steering group could manage information flows about ongoing strategic developments to provider companies.

9.16 We recommend that a similar initiative be created in the CA area. This could look at a number of issues. The board would assist utilities companies in the following processes.

- Properly identify and plan reinforcement and upgrading works for the strategic development of the Combined Authority area, rather than doing ad-hoc works to cater for particular elements within it.
- Better understanding of the spend profile against time and understand potential benefits to be gained from an integrated approach.
- Better understand the issue of who finances the various requirements, given the individual circumstances, and in particular allow utility providers to build better asset management programmes for their respective regulators (Ofwat, Ofgem, Ofcom etc).

9.17 On particular projects, the board could be used to identify and consider key issues around deliverability, to include:

- Understanding barriers to delivery;
- Understanding opportunities for integration across programmes, projects and sectors;
- Understanding opportunities for innovation
- Understanding skills required and options for training and employing
- Advising on policy and approaches to achieve best value for money
- To promote the benefits of best practice integrated delivery.

The Energy and Utilities Steering Group could manage information flows to provider companies

9.18 Utility Providers are generally required by their respective Regulators (Ofwat, Ofgem, Ofcom etc) to produce a range of periodic plans detailing their asset management and improvement proposals for their networks. The length of coverage of the plans varies according to the utility but they are generally of between five and seven years duration.

9.19 It will be highly beneficial to all stakeholders (the Local Planning Authority, the utility network providers and developers) if development is brought to the fore at the earliest opportunity.

9.20 This will allow development to be integrated into Asset Management Programmes wherever possible, improving the viability of development at the site and thus reducing development risk.

The steering group could co-ordinate upstream reinforcements

9.21 Without a firm commitment (demonstrated through the planning process) the utility providers are reluctant to commit to any resource to a comprehensive network review to understand whether networks upstream of a major development will need reinforcement. They will however undertake such analysis if their costs are met.

9.22 This analysis would be sensible, because it means that utility companies can

- Properly identify and plan reinforcement and upgrading works for the entire development, rather than doing ad-hoc works to cater for particular elements within it.
- Better understand the spend profile against time and understand potential benefits to be gained from an integrated approach.
- The issue of who finances such works can also be dealt with. (Broadly, we assume that upstream reinforcement is the responsibility of utility companies).

9.23 The steering group could be used to co-ordinate this additional work. We would venture to suggest that the costs of doing this work in a timely way would be exceeded by the benefits of co-ordination and inclusion of future utility requirements in Asset Management Plans.

The steering group could help to organise finance for up-front infrastructure costs

9.24 The main issue is common to many of the utilities matters - this is the need for an equitable spreading of costs across site developers that are not capable of being borne by the utility providers. In providing supply reinforcements to a strategic site, there is a risk that all the costs will fall either 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.

9.25 There are a number of examples of dealing with this problem.

- A forward funding arrangement can see the cost recovered through a charge per dwelling.
- Some infrastructure contractors with stronger balance sheets have been willing to fund infrastructure up front in this way (ie with return on investment through a charge per dwelling) or similar.
- We are also aware of emerging agreements around the country which see a consortium of developers forming to requisition network improvements from a water supplier. This reduces the risk of major network improvement costs falling on an individual developer.
- This group may wish to investigate how the utilities delivery in the area may obtain loan finance from public sector ‘revolving’ or ‘evergreen’ funds.

Focusing funding and financing support at the Opportunity Areas

9.26 In this section, we take a high level view on how funding and financing need to be brigaded to deliver change at the West Midlands Opportunity Areas. We take the view that the Opportunity Area sites should be the focus of efforts around funding and financing, but clearly non-designated sites could also be chosen for treatment, depending on how the CA wishes to proceed.

Packaging funding and financing to reinforce delivery at Opportunity Areas

9.27 The CA Finance Directors have been asked to look at the potential methods of funding and financing infrastructure growth in the West Midlands area. Project outputs will be

- A review of international precedents for funding and financing urban transport infrastructure;
- A high-level overview of the proposed infrastructure investments and funding requirements;
- A review of the funding and financing mechanisms that are used for transport-related infrastructure across the UK and their applicability in the West Midlands context;
- Identifying the range of funding/financing tools that could form part of a funding framework; and
- An analysis of the funding and financing mechanisms that could become available through the creation of the Combined Authority and through any further devolution of financial powers from the centre;
- Development of first stage funding plan.

9.28 The finance directors' work will provide more detail than we are able to provide here, land should be seen as directly integrated into the Opportunity Areas work. It will need bringing together with a more developed, targeted infrastructure and land use strategy in order to provide a mutually reinforcing policy package for growth.

Enterprise Zone status and a TIF at Opportunity Areas

9.29 We expect that Enterprise Zone status and TIF (Tax Increment Finance) schemes will form part of future work. There is currently a DCLG invitation for new Enterprise Zones being worked on by the LEPs.

9.30 Enterprise Zones are in place in the West Midlands, with two locations in the Black Country (Darlaston and i54-Wolverhampton North) and the Birmingham City Centre EZ across 26 sites across the city centre. It may be that this programme could be expanded. One potential area could be in Solihull's UK Central area (or parts of it, such as the UK Central Interchange site), or Peddimore.

9.31 Enterprise Zone status allows the potential for local retention of 100% of business rates. When fully built out, business rate revenue will be substantial. This income stream can be securitized with a Tax Increment Finance (TIF) scheme which will help to pay for infrastructure. At Vauxhall Nine Elms Battersea, for example, such a scheme allowed the up-front financing of infrastructure requirements including the Northern Line Extension. A Treasury debt guarantee has proved to be a critical part of the scheme, allowing credit risk to be reduced and thus the cost of borrowing to fall. The TIF finance has been complemented with funding from S106 and CIL. We understand that innovative funding methods were also used for the new M54 junction serving the i54 site.

Integrating Opportunity Area delivery with Land Commission and Investment Strategy work

9.32 The CA is planning to set up a Land Commission to enhance the supply of suitable development sites and make recommendations to remove impediments to that supply. This will lead to significant improvement in the supply of brownfield sites within the West Midlands through providing a greater understanding of:

- available land and premises across the public sector;
- available land in the private sector;
- spatial distribution in relation to key growth nodes and transport corridors;
- the impediments to bringing brownfield sites forward for development; and
- wholly understand fiscal and non-fiscal mechanisms to overcome those impediments.

9.33 Work for the Land Commission, and the accompanying emerging CIV, has created a list of development sites which are relatively close to being market viable, but which need a small amount of additional help before they will come to market. Issues tend to be around site remediation or infrastructure shortages.

Using Starter Home Funding at Opportunity Areas

9.34 The Government has launched a £26 million fund for housebuilders to demonstrate a range of high quality homes that will be available for first-time buyers.[40]

9.35 The fund will support architects, developers, councils, housing associations and small builders to build properties that will increase the quality of design. It will be used to acquire brownfield sites to provide land for starter homes. Money from the sales of these sites will go back to the government.

9.36 The government has also made available up to £10 million for local authorities to prepare more brownfield land for development of starter homes.[41]

[40] https://www.gov.uk/government/news/greg-clark-gives-starter-home-boost-to-first-time-buyers
[41] https://www.gov.uk/government/news/greg-clark-gives-starter-home-boost-to-first-time-buyers

Using Housing Zone Funding at Opportunity Areas

9.37 Housing zones are designated sites in specified local authority areas where ways of testing the large-scale construction of new homes are being piloted. There are 20 designated housing zones outside London. Housing zones can include several different sites, and the DCLG originally expected LDOs to be created for those housing zone sites not already covered by a planning permission for housing.

9.38 Two housing zones were shortlisted as Housing Zones in early 2015; Coseley Housing Zone in Dudley and Bescot Friar Park[42]. These did not form part of the 20 approved pilot Housing Zones confirmed in March 2015 by the Chancellor.

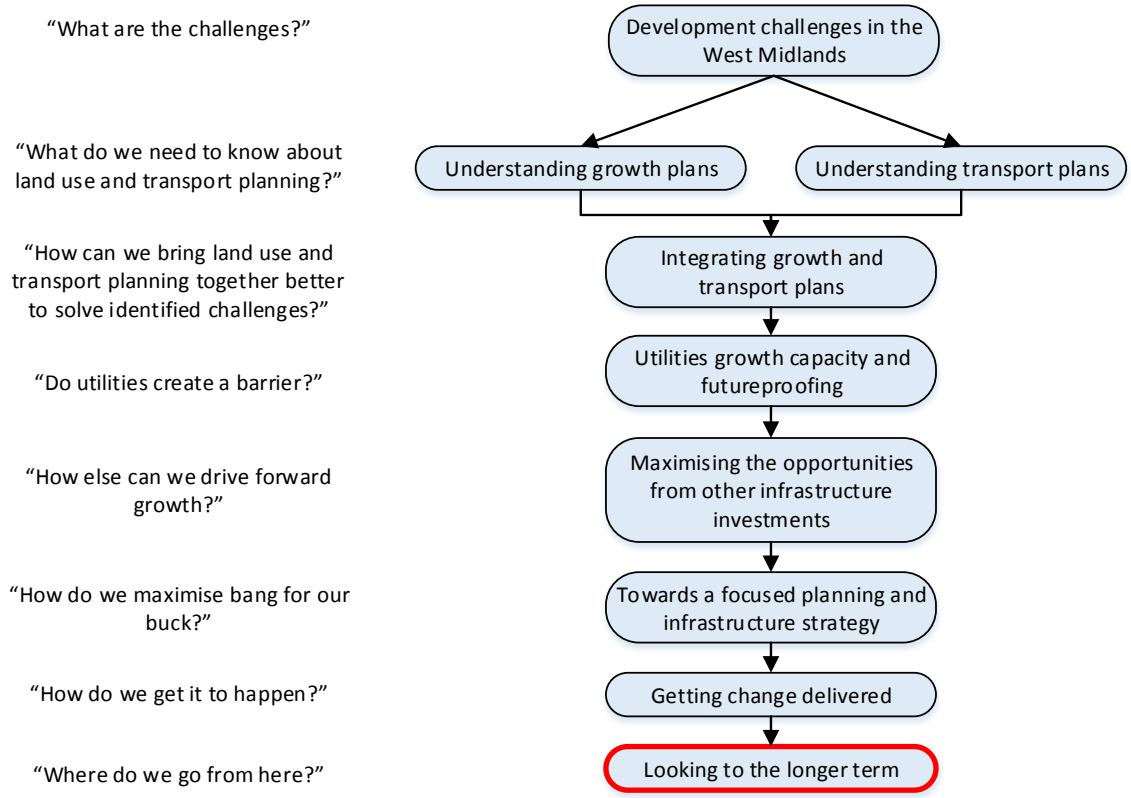
[42] https://www.gov.uk/government/news/areas-shortlisted-to-become-englands-first-housing-zones, [Accessed 1st September 2015]

10 LOOKING TO THE LONGER TERM

Introduction

10.1 In addition to work on developing Opportunity Areas, our work suggests that there is a wider strategy to be developed in the West Midlands. This would have the objective of helping to orientate public and private investment over the next 20-30 years.

Figure 10.1 Report stages and objectives



Creating policy innovation

Creating a policy network in the West Midlands

10.2 We believe that delivering growth at the pace of change forecast in the West Midlands requires a more innovative and joined-up approach to policy development and implementation which involves the public and private sector working in partnership.

10.3 Planning is experiencing a series of headwinds which stem from the fact that there is doubt about the ability of planning to arrive at accurate predictions, and thus a doubt about how successfully long term plans can be created.[43] These doubts may be

[43] For example there are a huge number of scenarios of the future are available, from the pessimistic "great stagnation" view, to the 'second economy' view that sees us on the brink of an epochal change created by ICT

reasonable. The question, then, is how to get flexibility and innovation into the planning process that allows it to keep up with a constantly changing social, economic and environment context, but retains the ability of planning to de-risk investment by creating a stable and predictable investment environment.

10.4 The CA may add value by getting the required innovation and new thinking into policy by creating a very open policy network which allows different ideas to be combined in ways that work for the West Midlands. Innovation depends on the cross-fertilisation of ideas. New ideas most frequently arrive following communicating with others with different experiences and professional qualifications. [44] [45]

10.5 A number of partners and stakeholders are likely to be very interested in becoming involved in the policy development process, including LEPs, university administrators and academics, developers, infrastructure providers, newspapers, smart city software engineers, utilities industries, local authority planners and economic development officers. The network could be used to collaborate in policy design which builds in the ideas of a broad base of users *from the very beginning* of the planning process, and then involved in the evolving thinking as the plan is shaped. This should be distinguished from the usual plan design process where a draft (but relatively finalised) plan is presented for public consultation. [46]

10.6 Various models could be used.[47]

Clarifying the strategic direction for the West Midlands

10.7 Work on governance in the West Midlands has been delivered at pace through the devolution deal and Combined Authority work. The picture has changed quite radically. Although the LEPs have strategic economic plans, there is currently no document which sets out the overarching strategy for the West Midlands.

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deployment across the economy. National Endowment for Science and Technology and the Arts (2012) *Plan I* (14) has a good short summary.

[44] Charles Leadbeater: *The Era of Open Innovation*

[45] National Endowment for Science and Technology and the Arts (2012) *Plan I* (73)

[46] National Endowment for Science and Technology and the Arts (2012) *Plan I.* 'In an age of "combinatorial" innovation – where major breakthroughs are likely to involve knowledge from different fields, and joint working between thinkers, doers and communicators - being good at collective intelligence will be a crucial determinant of success for businesses, for governments, and for countries. Understanding more about how collective intelligence happens, and devising and implementing effective tools for fostering it should be a major project for the UK in the next decade'. "Co-production means delivering public services in an equal and reciprocal relationship between professionals, people using services, their families and their neighbours. Where activities are co-produced in this way, both services and neighbourhoods become far more effective agents of change." NESTA, NEF, The Lab (2009) The Challenge of Co-Production How equal partnerships between professionals and the public are crucial to improving public services

[47] Various models could be used, including a) Face-to-face contact: 'Hackdays' are a software development idea where computer programmers and others involved in software development, including graphic designers, interface designers and project managers collaborate intensively for a period. We could imagine a similar process being a success in strategic planning for the West Midlands. B) Online contact: participation though a 'wiki' may be helpful. Wikis allow content to be generated from multiple users, rather than a central editor. The National Planning Policy Guidance (recently released in 'beta') is a tentative move in this direction. Milton Keynes has also been recently using this approach. C) Stakeholder days and public consultation. There remains a significant role for these types of events.

10.8 Such a document would be helpful. This should not be seen as statutory document (LPAs are at different stages of their statutory plans, and this document should most certainly be outside that cycle). Instead, it is a thinkpiece – perhaps even containing different, competing perspectives. Centrally, the document would orientate investment and set out the shape of development across the CA area over the next 20-30 years, with the objective of allowing public and private sector investors to understand the scale and shape of future development, and how their investments might benefit from future developments. A long term vision for the area would assist the development of a rolling programme of investment in the transport network. In Bergen, for example, there is a commitment to extend light rail network by 2km each year. This would make the commissioning and delivery of transport investment more cost efficient by allowing the maintenance of infrastructure delivery skills within the West Midlands over time. A similar approach is being pursued by Transport for London.

10.9 We suggest that the CA should avoid a glossy 'investment prospectus' type approach in favour of a robust, grounded futures document.

New infrastructure could provide an overall strategic theme for development

10.10 Above, we suggest that the CA area look at using 'smart' infrastructure as a springboard into other advanced manufacturing technologies, making infrastructure provision lean and efficient, using BIM methods and G-Fast telecommunications provision.

10.11 Rather than seeing these elements separately, CA could bring these together as an integrated strategy. This would pull together these technologies and approaches and also integrate these methods into an overall economic strategy for the area. For example, Christchurch in New Zealand is integrating smart city provision into its £40b 'sensing city' rebuilding programme, and using this to create a new digital economy for the city's future.

10.12 We see opportunities for the West Midlands to go further. There may be considerable value in pulling together work on SMART cities together with work to show a concerted push to reduce the West Midlands' reliance on fossil fuels, and move towards a cleaner future.

Developing alternative longer-term scenarios

Developing future scenarios

10.13 Various scenarios could be developed to address problems and capture opportunities in the West Midlands. Below, we advance one only. Our objective is not to endorse a particular approach here, but to demonstrate the scale and ambition of thinking that the CA may wish to pursue in future. We start with a problem, and then (very briefly) look at how that problem might be addressed.

Driving productivity growth, and balancing east-west growth

10.14 This scenario sets out possible approaches to deal with two problems experienced by the West Midlands.

- Above (paragraph 2.15) we suggested that current patterns of growth see particularly strong development in the centre and east, and that the western areas of the West Midlands may see gradual relative erosion in their growth potential if action is not taken.
- It is also the case – although not directly dealt with above – that West Midlands labour productivity is under the English average.[48]

10.15 Alternative scenarios could be developed to adjust these patterns.

The concept of the Western Orbital

10.16 One alternative scenario might see the CA revisiting the concept of the Western Orbital. The objective of the scheme would be to relieve the urban parts of the M5 and M6 through the Black Country, opening up development opportunities along those routes. (Clearly, future work would need to decide whether the scheme would actually deliver these objectives). The current unreliability of the M5 and M6 create significant risks for investors, with the result that the Black Country's development is held back.

10.17 There is a long history associated with plans for the road, a 42-mile proposed route between the M5 J4a north of Bromsgrove (at the terminus of the M42), and the M54 north of Wolverhampton (west of J2). A preferred route was announced in 1989. The route would have skirted several areas including Kidderminster, Stourbridge, Codsall, Codsall Wood, Perton, Pattingham and Wombourne.

10.18 There were (and are) serious environmental objections to the route. The route ran through green belt land, and would have needed a viaduct across the Stour Valley. Two scheduled ancient monuments were to be affected by the route and spur, Baches Forge and Wychbury hillfort[49], with a tunnel proposed under the hillfort. Plans were cancelled in 1996 following significant objections.

10.19 A downgraded alternative was put forward as part of the West Midlands Multi-Modal Study (MMS) in which put forward the construction of D2 bypasses around Wolverhampton and Stourbridge. However, the M54 to M6 / M6 (Toll) Link Road appears in the current roads programme and implements a section of the cancelled Western Orbital. It is intended to relieve the overloaded sections of A460 and A449.

10.20 Clearly, there important environmental objections. DfT traffic demand forecasts project an increase of 27 to 57 per cent in driving on the SRN by 2040[50], exacerbating existing problems. However, the Government's model is not without its critics and

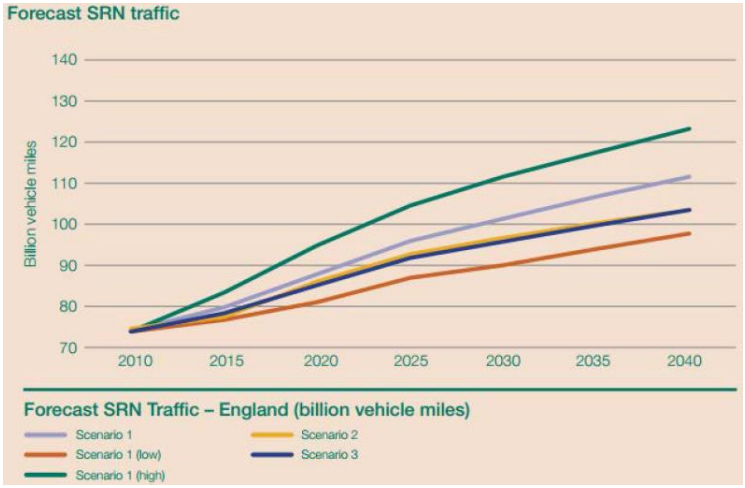
[48] ONS Labour Productivity, Q1 2015 http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-393176

[49] http://www.biab.ac.uk/issues/58642

[50] DfT (2015), Road Investment Strategy: for the 2015/16 – 2019/20 Road Period, March 2015.

some argue that we have reached 'peak car', making the Government's forecasts optimistic at best. 'Peak car' is a term generally used when referring to the idea that car miles per person per year has reached a historic peak and that in the future, it will remain static or decline.[51]

Figure 10.2 Forecast Strategic Road Network Traffic projections



Source: House of Commons Library Briefing Paper

The CA could consider further opportunities around the M42 and M54

10.21 Many of the economic opportunities for the West Midlands are located on the periphery of the region, around the strategic transport network. Major investors - JLR at i54 being one example – wish to be located on this network. We suggest that there should be a pro-active programme of work to select and bring these sites forward. The CA might play a role here, possibly alongside Highways England (see paragraph 8.36) filling the gap left by AWM, which did valuable work on sites such as i54.

10.22 The M42 is a major economic asset for the West Midlands. The same goes for the M54. Work for the M42 Growth Corridor study defined the potential growth area as being from Junction 3A in the south, to J9 in the north.[52] However, in economic terms they are under-used. A starting point for thinking about site development opportunities could be around M42 Junctions 7-9 and on the M54 towards Telford. Major opportunities may also arise from suspending charging on the M6 Toll could open up major site development opportunities adjacent to the toll, and up the A38 and A5 corridor. We say more in paragraph 8.17.

10.23 This programme would be politically difficult, because many sites will be greenfield. This development is made more complex by the fact that CA authorities (as designated at the time of writing) have no planning control over these areas. Over the longer term, the West Midlands is likely to need an approach to governance that reflects how the region works, lives, travels, and invests. The final CA boundaries may develop over time, or boundary reform may play a part in the solution.

[51] House of Commons Library Briefing Paper Number SN01448, 10 August 2015 *Strategic Road Network* (SRN)
[52] Ecotec *M42 Growth Corridor*

10.24 The programme would be assisted if sites were picked that would maintain strategic roads as a defendable boundary to the conurbation. The CA would be likely to need legally binding ways of reassuring the inhabitants of neighbouring towns outside the conurbation that development would not affect them in future; we believe that there are ways in which planning control could be managed analogous to the position of the National Parks, but these fall outside the terms of our commission.

10.25 This is not about 'inward investment' or 'foreign investment'. We would expect a productivity rise at the new site, otherwise the investor would be unlikely to be making the investment. Concerns about simply displacing activity from one location to another would not be of particular weight, given that no subsidy would be required for these sites, and, given housing pressures, old sites could possibly be recycled for housing.

Upgrading public transport frequencies and capacity

10.26 As we show elsewhere in this document, additional rail capacity is a key priority to meeting growing demand and support further economic growth. Capacity improvements can be delivered in the relatively short term through enhancements to the Snow Hill Lines and through train and (where required) platform lengthening across the network. However, more significant rail infrastructure interventions will also be required in the medium term at both national and regional level, notably the completion of HS2 Phase 1 and Camp Hill Chords, Birmingham - Water Orton enhancements with extension of HS2 Phase 2 to the North East and North West and further investment in the existing network in the long term.

10.27 The metro extension and SPRINT network schemes proposed in the Strategic Transport Plan will also help plug the missing links, supporting the rail network providing a better integrated public transport system.

10.28 These improvements will need to be extended. There are further opportunities for the CA to

- Work with the other partners who deliver Network West Midlands – to support and enhance the capabilities of integrated ticketing, especially roll-out of Swiftcard and other Smart ticketing initiatives.
- Work with operators, infrastructure owners and other partners to improve routes and service frequency.

10.29 However, there are significant complexities regarding the system's ability to improve rail service frequencies. This is because the West Midlands local rail network extends significantly beyond the CA area into wider travel to work area, meaning that these local services have to interact with freight services and other longer distance operators who also provide a key transport function on certain corridors. This limits the flexibility to change service frequencies and times, and distinguishes the West Midlands system from some other areas (eg the relatively self-contained Merseyrail network).

10.30 Organisational change may form part of the solution. The majority of local rail services are currently provided by London Midland (e.g. 63% of all services into

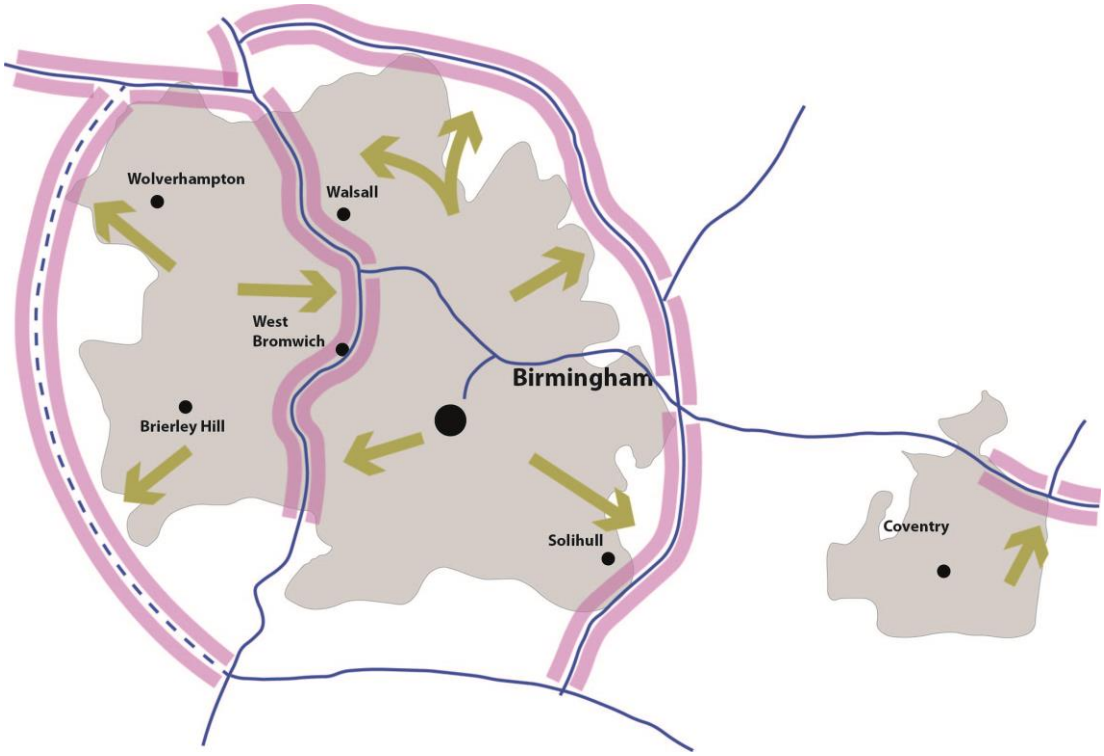
Birmingham) and significant proportion are provided by other Train Operating Companies. However, there are indications that the current proposition by the West Midlands Rail (WMR) partner authorities (with includes the seven CA authorities and surrounding unitaries and shires) for a West Midlands Rail franchise which is jointly specified and managed with the Department for Transport should help the delivery of a local rail network which is more closely aligned to passenger and stakeholder requirements from the start of the new franchise which is due to replace London Midland in 2017.

10.31 The WMR proposition could also ultimately lead in future to a new fully-devolved local rail franchise serving the CA and wider travel to work area. There may also be further options for the CA and WMR partners to have some greater influence over the operations of the wider rail network. Further work is needed to understand the exact mechanisms by which this might be achieved.

Pulling land use and new infrastructure opportunities together

10.32 Together, these scenarios might amount to an 'inside out' and 'outside in' approach with the objective of raising productivity and rebalancing growth within the West Midlands. This scenario might see the provision of a ring of advanced industrial sites on the peripheral transport networks (potentially on junctions on the M6T, M42, M54 or even a possible Western Orbital). These would provide investors with the transport connections that they seek, and represents the 'inside out' element of the strategy.

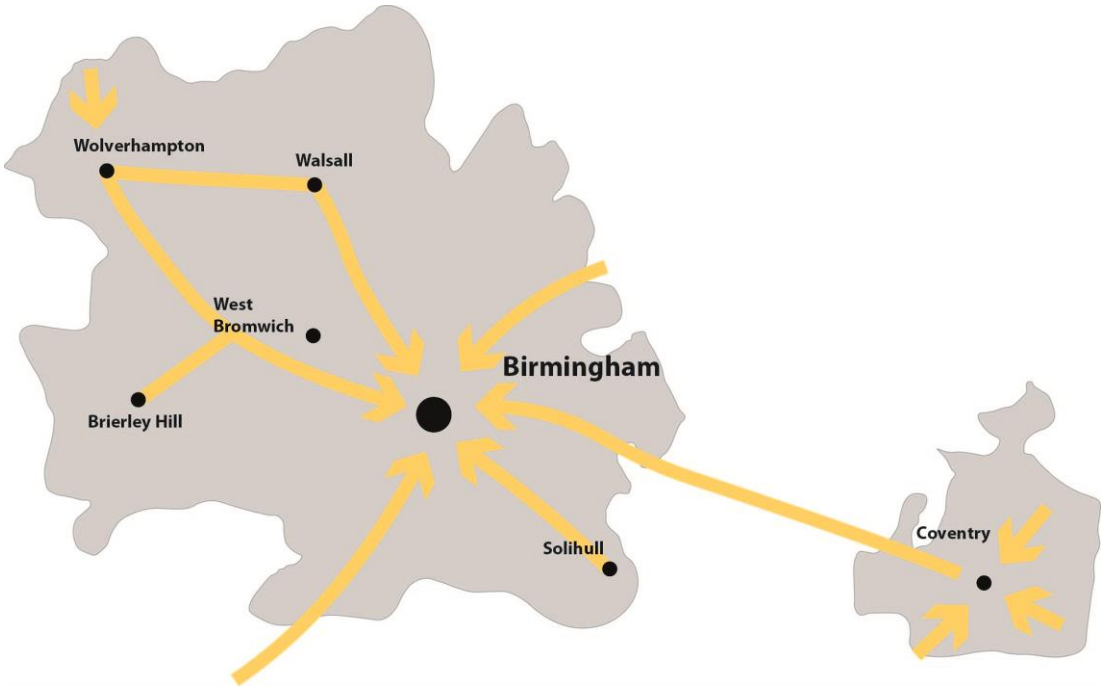
Figure 10.3 The 'inside out' scenario



10.33 Critically, this strategy would need to be balanced by an 'outside in' element to ensure that residential demand picked up any surplus employment sites, potentially

using site remediation and infrastructure investment as a tool. An important element here would be the planned upgrade in public transport service frequencies and route capacities. This would need heavy investment, and (as discussed above) might best delivered by a new fully-devolved rail franchise.

Figure 10.4 The 'outside in' scenario



10.34 Some of these schemes would undoubtedly be politically very contentious, and we accept that these would need careful consideration. Some effects – such as possibly increased commuting distances – would be undesirable. We accept that some of these elements will be politically difficult to deliver, and may fall away. Clearly, a great deal of further work would need to be undertaken before these packages could be wholeheartedly recommended, but we offer them to simulate a discussion on how to deliver a better future for the West Midlands.

APPENDIX A UNDERSTANDING THE IMPACT OF TRANSPORT PROJECTS ON SITE VALUES AND LOCAL ECONOMIES

As Rosewell has pointed out, identifying the payback to any kind of infrastructure is surprisingly difficult.[53] The returns are diffuse and dispersed. Infrastructure projects are general purpose technologies - and separating their impact out from everything else is analytically very awkward.

For positive impacts to result from transport infrastructure investment, local economies should be growing and sites must be available

Economic growth is only generated by transport investment if the other ingredients for growth are in place. [54] One of these ingredients includes the availability of suitable site locations.[55]

If economic forces are present, and if suitable reinforcing policies are designed and implemented, a transport project can potentially promote local and regional economic development (Berechman, 2001).

Spending on transport in local economies that are shrinking has little or no positive effect. Work by the Treasury (2001) finds that large scale investments in transport infrastructure (e.g. in Sicily) have failed to stimulate economic growth in the long run and have resulted in underutilisation of resources. [56]

Treasury work found that, when infrastructure is used to support existing growth, it can be a catalyst for development.[57]

Positive impacts from transport policies have been lost the past because of poor integration with land use and regeneration policies

Poor integration with land use and regeneration policies has meant that the regeneration effects of the Sheffield Supertram have been minimal (Lawless 2001).[58]

The quality of studies of the impact of transport on land and property is variable

In all cases there is great variability in the models employed; the data used; the variables measured and hence there are difficulties comparing results.

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[53] Rosewell (2013) (52)

[54] Table 3.1 Llewellyn Davies, Bannister, Hall for DfT& ODPM: *Transport and City Competitiveness: A Literature Review*

[55] Llewellyn Davies, Bannister, Hall for DfT& ODPM: *Transport and City Competitiveness: A Literature Review* (13)

[56] p100 DfT (2004) The Importance of Transport in Business' Location Decisions

[57] DfT (2004) The Importance of Transport in Business' Location Decisions (100)

[58] DfT (2004) The Importance of Transport in Business' Location Decisions (52)

- A 1% increase in accessibility as expressed in the travel time discounted access to employment opportunities (and correlated effects) induces a roughly 0.25%-0.3% increase in residential property prices (Ahlfeldt 2011)[59].
- Mikelbank (2001) suggested that home prices rise in response to transportation improvements that occur along shortest-path routes connecting individual homes to the region's CBD or to the local shopping centre;[60]
- Many studies have found a positive relationship between transport infrastructure investment and the prices of land or housing (e.g. McDonald and Osuji, 1995; Haughwout, 1997; Boarnet and Chalermpong, 2001)[61].
- A study of US towns over two decades showed house value premiums for homes within a quarter to half mile from train stations ranging between 6.4% to 45%.
- A study of residential property values in Buffalo NY found that average property values increased by $2.31 for every foot closer the home was to a light rail station.

It is fair to say, though, that scepticism remains in some quarters[62].

The LSE found no high quality evaluations provide evidence on the impacts of trams, buses, cycling and walking schemes

The LSE have studied over 1000 published evaluation projects and set up stringent quality criteria for evaluation. They found no high quality evaluations that provide evidence on the impacts of trams, buses, cycling and walking schemes on any economic outcomes[63].

Rail projects tend to have a positive effect on residential property prices, although the size of the effect varies considerably depending on the type of residential unit and its proximity to provision

The LSE's work found that for evaluations showing positive effects, the degree of price appreciation ranged from extremely small to quite substantial. For example, a study which looked at the impact of light rail in Charlotte, North Carolina found effects that ranged from near zero up to around 13%, depending on:

- the type of property (for example, condominiums see a greater increase than single-family properties); and
- proximity from the station (for example, single-family homes within half a mile of the station see no impact, whilst condominiums within half a mile are subject to a greater increase than those further away).

[59] http://www.spatialeconomics.ac.uk/textonly/SERC/publications/download/sercdp0075.pdf

[60] Op cit

[61] P Jiwattanakulpaisarn, 2008, The Impact of Transport Infrastructure Investment on Regional Employment: An empirical investigation

[62] Gibbons and Machin (2007) *Valuing School Quality, Better Transport and Lower Crime: Evidence from House Prices*
http://personal.lse.ac.uk/gibbons/Papers/Valuing%20schools%20transport%20and%20crime%20December%202007.pdf

[63] LSE What Works Centre for Local Economic Growth (2015) *Evidence Review 7 – Transport* (29)

No rail effect on commercial property prices has been found

The LSE found one good quality study on rail effects on commercial prices – but it found no effect.[64]

Road projects tend to have a positive effect on property prices, although the effect in prices may depend on distance to the project (and the effects can vary over time)

The LSE found that four evaluations consider property prices. Three find positive impacts with one showing mixed results.

House prices immediately adjacent to roads may fall. Prices nearby new roads, but not immediately adjacent, tend to rise

The LSE found that two studies suggest that "price effects depend on distance to the road project (consistent with the hedonic pricing literature that looks at the link from property characteristics to prices). The size of the 'buffer' zone in which these non-positive effects occur varies: in one study negative effects are present up to 0.2 miles, but positive from 0.25 miles away; while a second study shows overall positive effects on property prices in all treatment areas albeit with slightly smaller increases up to 0.4 miles from the intervention."[65]

There are no findings on the effects of roads on commercial values, but productivity rises in industries which use roads intensively

The LSE found that there is some evidence that road projects have a positive effect on productivity. One study finds that, in general, the construction of or improvement to major roads leads to a 0.4% uplift in GVA per worker. The second study also finds positive effects on provincial productivity with stronger effects for areas intensive in sectors that are more dependent on roads (e.g. manufacturing and logistics).[66]

[64] LSE What Works Centre for Local Economic Growth (2015) *Evidence Review 7 – Transport* (29)
[65] LSE What Works Centre for Local Economic Growth (2015) *Evidence Review 7 – Transport* (24)
[66] LSE What Works Centre for Local Economic Growth (2015) *Evidence Review 7 – Transport* (26)

APPENDIX B SITE VIABILITY ISSUES

Site viability depends on the balance between development costs and sales values. The key cost problems in the West Midlands centre on land remediation costs.

We need to get a broad understanding of whereabouts in the CA area these different problems are likely to be experienced, because this information will help us decide where to concentrate intervention.

- On sites where sales values are high, and remediation and other development costs are low, then development can be assumed to be viable. We need not worry too much about these sites. The market will take care of them on its own.
- The opposite is true: sites with high remediation costs and low sales values are likely to be unviable. These sites would need heavy subsidy if they were to be delivered.
- There is a band in the middle, where viability is marginal. Some of these sites might work on their own, but the weaker ones might need an additional 'push' to tip them into viability.

There are equity reasons why the most disadvantaged areas are likely to need a particular policy focus. But given the scarcity of funding, and the pressure to get housing numbers up, it is likely to be the case that at least part of the available resources will need to be focused on sites which are near to being viable, and need relatively small amounts of assistance to get them delivering.

We do not have consistent area-wide data on remediation costs

Ideally, we would have the data to understand both likely sales values in an area, and likely remediation costs.

However, contamination issues are highly granular, and affect different sites very differently. In a strategic study such as this, it is not possible to draw area-wide conclusions. (Whilst land contamination maps do exist, it is not possible to translate these into an accurate remediation *cost).*

Previous work done in the Black Country strategy on land contamination shows that the bulk of regeneration corridors are on contaminated land, and we know that very significant parts of Birmingham suffers from similar problems. A brief review suggests that nothing significant is likely to have changed since this work was undertaken.

However, we do have good data on housing sales values that we can use as a proxy indicator for viability

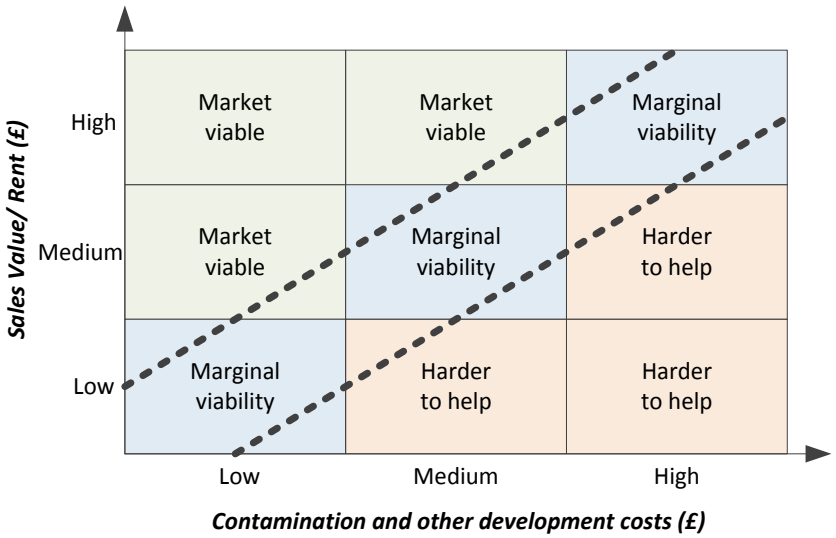
High quality data on housing sales prices does exist from the Land Registry. This can be used as a rough proxy for development viability. We have mapped this data, to see where lower values are likely to mean that viability issues are likely to be particularly pressing.

Conceptually, the West Midlands markets break into three broad categories.

- Market viable areas. These areas will be deemed to be sufficiently viable without further help, and therefore there is likely to be little rationale for any targeted assistance with either land remediation or infrastructure supported aimed at getting development values up. Transport infrastructure may pass through these areas, and provide valuable additional connectivity, but there is less likely to be a systemic land development effect that moves sites from being unviable into viability.
- "Marginal viability". These sites may be either viable or relatively close to viability. If growth numbers are to be achieved, the CA may choose to start with these sites, and understand how either land remediation or an infrastructure / planning focus might help to trigger the market development process.
- "Harder to help" areas. These areas are likely to be furthest from being developed by the market. There are likely to be good equity reasons for intervening in these areas, but they are also likely to absorb the greatest amounts of subsidy before development becomes viable without state intervention in the marketplace.

Figure 10.5 sets these concepts out diagrammatically.

Figure 10.5 Market viable areas



It is important to note that this is a high level review only. Also,this report does not work to a sufficient detail to allow any conclusions to be drawn about the existence of a five year land supply.

APPENDIX C TESTING THE DRAFT WEST MIDLANDS STP TRANSPORT SCHEME LONG-LIST

Compiled Highways England Road Investment Strategy list plus scheme long-list submission to West Midlands STP: uncommitted major transport interventions additional to 2031 Do Minimum Schemes

Ref.			Test 1: growing economy?	Test 2: is the general scheme type likely benefit site development, given local context?	Test 2: rationale	Test 3: sufficient scale to affect site development?	Test 3: rationale	Test 4: surrounding economy able to absorb positive impacts as economic gain? (site availability and viability near projects)	Test 4: rationale	Best estimate: on realistic delivery period		High level cost estimates		Notes
	1	**NATIONAL/REGIONAL**												
	2	**From Highways England RIS**												
Nat1	3	M54 to M6 toll link road (committed but subject to other contributions)	yes	likely higher	Likely impacts on i54 and Wolverhampton Enterprise Zone	yes	substantial scheme	Likely yes	Proximity to nearby i54 and Wolverhampton Enterprise Zone	0 to 5	1.00	£250-£500m		
	4	M5 to M42 Birmingham box phase 4	yes	Likely lower	Likely VoT improvement rather than site development initiative. HE national trunk road scheme.	n/a	n/a	n/a	n/a	5 to 10		£250-£500m		
	5	**Motorway Junctions**												
Nat1	6	M5 Junction 2 Improvement	yes	likely higher	Literature review indicates potential impacts	yes	substantial scheme	Likely yes	Around 25 ha of employment land allocation lie within 1km of junction	5 to 10	3.00	30		
Nat2	7	M5 Junction 1 Improvement	yes	likely higher	Literature review indicates potential impacts	yes	substantial scheme	Likely yes	Around West Brom. Target is 110,000 sqm of office floorspace adjacent to junction	5 to 10	3.00	30		
Nat3	8	Birchley Island/M5 Junction 2 Improvement, Oldbury	DU	yes						5 to 10				
	9	**Motorway/Trunk Road Schemes**												
Nat4	10	A46 Expressway	yes	Likely lower	Likely VoT improvement rather than site development initiative. HE national trunk road scheme.					0 to 5		75		
Nat5	11	Better Use of M6 Toll	yes	likely higher	The scheme itself will create Value of Time savings, which will benefit the economic efficiency. However, the effect of the scheme we are seeking is on site development opportunities up the classic M6 route. The capacity released will assist in creating growth capacity in the Black Country, so this scheme is classed as having likely higher site development impacts on the classic M6 route.	yes		yes	Important release of capacity on classic M6, with likely result in opening up additional sites, plus some possible site development opportunities adjacent to M6 Toll if planning policy allowed it.	0 to 5	1.00	0	Super	Releases significant capacity on M6 in Black Country.
	12	**Passenger/Freight Rail**												
Nat6	13	Bescot Multi-Modal Rail Freight Interchange	yes	likely lower	Scheme profile suggests more likely VoT / network improvement alone rather than site development impacts.					10 to 15		50		
Nat7	14	Completion of Electric Spine	yes	likely lower	Unlikely to create site development opportunities. This scheme predominantly creates efficiency savings.	n/a	n/a	n/a	n/a	10 to 15		0		
Nat8	15	Further line electrification - national schemes	yes	likely lower	General network improvement likely, rather than specific site development impacts	N/a		n/a		15+		0		
Nat9	16	Water Orton Rail Corridor Capacity and Local Enhancements	yes	likely higher	Main bottleneck for rail freight in West Midlands. Will release capacity for local stations on the Castle Bromwich route	Yes		Yes	Releases other capacity on Castle Bromwich route	5 to 10	3.00	103	Linked	
Nat10	17	Camp Hill Chords	yes	likely higher	Releases major capacity on routes into central Birmingham, allowing Central Birmingham passenger growth and site development.	Yes		Yes		5 to 10	3.00	240	Super	
Nat11	18	Coventry Station Track Remodelling	yes	likely higher	will release development around Coventry City Centre	yes		Yes		0 to 5	1.00	50		
Nat12	19	Shrewsbury to Wolverhampton Rail Electrification	yes	likely lower	Unlikely to create site development opportunities. This scheme predominantly creates efficiency savings.	n/a	n/a	n/a	n/a	10 to 15		60		
Nat13	20	Lichfield - Walsall - Stourbridge rail freight line	yes	likely lower	NR study indicates that no need for this before 2043 so not pursued further at this stage.	n/a	n/a	n/a	n/a	15+		200		
Nat14	21	Kings Norton - Bromsgrove Corridor Capacity	yes	likely higher	Some capacity constraints	Yes		Yes	Housing growth committed in Bromsgrove district. This likely will support that development.	5 to 10	3.00	50		
	22	**METROPOLITAN**												
	23	**Rail and Rapid Transit Network**												
	24	***Rail***												
Met1	25	Snow Hill Phase 1a and b (Urban Realm)	yes	likely higher	Public realm scheme, but will assist with values and therefore development viability.	Yes	n/a	Yes	n/a	0 to 5	1.00	13		
Met2	26	Rail Devolution Station Improvement Strategy	yes	likely lower	Smaller scale projects, unlikley to have major impacts	n/a	n/a	n/a	n/a	0 to 5		2		rolling ten year programme
Met3	27	Rail Devolution Rolling Stock Improvements	yes	likely lower	Train stock expansion. Important but unlikely to have direct site impacts.	n/a	n/a	n/a	n/a	0 to 5		42		rolling ten year programme
Met4	28	Rail Devolution Service Quality and Network Capability Improvements	yes	likely lower	Important but unlikely to have direct site impacts.	n/a	n/a	n/a	n/a	0 to 5		12		rolling ten year programme
Met5	29	Rail Park and Ride expansion with pedestrian /cycle access to stations improvements	yes	likely lower	LIterature review indicates potential impacts on site development may be less likely. VoT and efficiency improvements.	n/a	n/a	n/a	n/a	0 to 5		25		rolling ten year programme
Met6	30	Solihull station and bus interchange improvements	yes	likely lower	LIterature review indicates potential impacts on site development may be less likely. VoT and efficiency improvements.	n/a	n/a	n/a	n/a	0 to 5		5		needs to be compatible with longer term plans for station serving Solihull town centre
Met7	31	Perry Barr Interchange	yes	likely higher	Some local regeneration potential.	No	Scale unlikely to be sufficient to shift values.	n/a	n/a	5 to 10		8		
Met8	32	Stechford Station Masterplan - station improvements	yes	likely lower	limited impact					0 to 5		5		enhancements to the committed NR "Access for All" funded scheme
Met9	33	Accessibility Programme Step Free West Midands	yes	likely lower	n/a	n/a	n/a	n/a	n/a	0 to 5		25		rolling ten year programme
Met10	34	Coventry Rail Station	DUPLICATION		n/a	n/a	n/a	n/a	n/a					
Met11	35	Snow Hill Lines Capacity and Connectivity Enhancements	yes	likely higher	No specific sites, but is a generic scheme which may have area wide regeneration improvements. Supports regeneration along Black Country corridor 12	Yes		Yes		5 to 10	3.00	21	Super	
Met12	36	Walsall to Wolverhampton Rail Connectivity	yes	likely higher	Connects strategic centres from Walsall to Wolverhampton. Will help regen in that corridor. Longer term, a tram-train might provide good connections to development sites off the main route. Dependent on the Black Country rapid transit review.	Yes		yes		5 to 10	3.00	80		
Met13	37	Aldridge new rail station and electrification	yes	likely higher	This type of development would typically assist local regeneration if required and sites available			No	Good local values, so development already viable. Relatively low level of site availability.	10 to 15		23		
Met14	38	Walsall Gateway Project, Walsall rail station improvements	yes	likely higher	Will help regeneration of Walsall town centre	Yes		Yes	To tie into the regeneration of Walsall town centre.	5 to 10	3.00	20		high profile project for Walsall MBC

Met15	39	Aldridge station and possible electrification	DUPLICATION							10		23		REPETITION
Met16	40	New Local Stations at Moseley, Kings Heath and Hazelwell	yes	likely higher	Project derives from Camphill Chords. Increases rail capacity into Birmingham at Moor St next to HS2. Lots of local support because suburbation stations could be reopened (closed in 1950s). Chords are expensive but major agglomeration advantages into Birmingham, alongside freight benefits. Public supportive. Water Orton (high priority for freight) is the first stage, before Camp Hill Chords. It is a lot of expensive infrastructure. Discussed with NR. West Midlands and Chiltern Route study - recognised as a high priority project. Long term project, needs to go through planning process.	Yes		Yes	Established, viable suburban areas. Not a great scope for development additionality. However, Chords going to Castle Bromwich do have more scope for intensification and opening up industrial land around Fort Dunlop. Values are currently quite low in the area so possible to see how residential and industrial land might be brought forward.	10	4.00	60		
Met17	41	New Local Stations at East and South Coventry	yes	likely higher		Yes		Yes		15	6.00	10		Needs HS2 Phase 2 up to the north (Manchester, Leeds) before this can happen 2034. It may be possible to do the Coventry South project sooner.
Met18	42	Sutton Park Line new stations, new rail service	yes	likely higher	In principle, this type of scheme could have an impact.	Yes	Scheme of this scale could have an impact	No	Situated in an affluent area. Not a great deal of capacity opened up.	15 +		58		
Met19	43	Walsall Post-HS2 "Classic Rail " Enhancements , infrastructure programme	yes	likely higher		Yes		Yes		10 to 15	5.00	10		
Met20	44	Extension of Cross City North to Alrewas and Burton	yes	likely higher		Yes		Yes	Lot of potential housing in the A38 corridor up towards Lichfield. This would help support housing development.	10 to 15	5.00	50		
Met 21	45	Nuneaton Grade Separation (Coventry - Leicester)	yes	likely lower	n/a	n/a	n/a	n/a	n/a	10 to 15		50		
	46	***Rapid Transit***												
Met22	47	Bradley Lane Metro Park and Ride	yes	likely lower	n/a	n/a	n/a	n/a	n/a	0 to 5		2		
Met23	48	Halesowen extension SPRINT (Quinton to Halesowen)	yes	likely higher	Possible impact in principle	No	Not a transformational project for its type - £10m on buses and shelters.	No	Halesown fairly mature residential surburb so not great amount of development opportunity. It is there to serve an existing catchment.	5 to 10		10		Very deliverable SPRINT scheme. Project that goes to Quinton is approved and currently being developed for delivery. Mainly about labour market access and improving service quality. Relatively controversial scheme - it is sharing space. Public safety is an issue locally, so on board conductors are helpful.
Met24	49	A34 Walsall Rd SPRINT	yes	likely higher		Yes		Yes	Lots of development opportunity in this corridor. Campus of Birmingham City University adjacent, and University doing masterplan. A lot of land use work has been done: the A34 regeneration framework is completed, and there scope for further expansion. Over longer term, this could turn into metro - but now theory only. Scott Arms junction also needs unlocking, which could result in strategic benefits.	5 to 10	3.00	40	Super	Significant priority. Post HS2, but could be done earlier. Strategically useful to Birmingham because this addresses deprivation in northern wards.
Met25	50	Bartley Green SPRINT	yes	likely higher		Yes		Yes	A number of different areas affected. Affluent residential bit of Birmingham, with already viable development, but in our view still qualifies due to wider strategic benefits which will further increase the absorbative capacity of the economy. The route goes past QE Hospital and emerging Life Sciences campus. Also useful for Bartley Green and Weoley Castle - takes long time to get to city centre so unlocks social housing sites, so helping social exclusion.	10 to 15	5.00	42		As well as having site development advantages, this scheme may created major agglomeration advantages. Strong co-location of emerging science projects. Slightly different route to the existing heavy rail links into central Birmingham, and picks up the people which can't effectively reach rail provision.
Met26	51	Coventry 'Clover-leaf' rapid transit network	yes	likely higher		Yes		Yes	Very much related to serving housing sites.	0 to 5	1.00	150	Super	A major strategic project for the releasing Coventry sites. Rolling ten year programme
Met27	52	UKC - HS2 Growth Strategy Interchange multi-modal access to key sites and business parks	yes	likely higher		Yes		Yes		5 to 10	3.00	50		Sorting out junctions, but more work needed to clarify precise scheme content. At moment, understood to be A45 Damson Parkway junction and associated UK Central links.
Met28	53	Metro Brierley Hill to Birmingham via Wednesbury	yes	likely higher	An extension of the Midland Metro line from Line 1 in Wednesbury through to Brierley Hill, via Tipton, Dudley town centre and Merry Hill. This is a very major scheme. It has got a Transport and Works Act Order. £300m light rail project.	Yes		Yes	Lots scope to develop around Merry Hill, Brierley Hill, Dudley. Provides an alternative to car access to Brierley Hill, and so releases more grovth. There are vacant sites along the corridor, lowland values, current public transport offer is relatively poor. Very congested.	5 to 10	3.00	309	Super	This is the missing link for the 'public transport motorway network'. Potential to serve Dudely town centre on disused line, and on to Merry Hill on old steelworks. Major benefits at CA level, given that it links 4 of the main centres. By adding this branch line, adds Dudley and Brierley Hill to Birmingham and HS2, and West Bromwich town centre and Birmingham.
Met29	54	Metro Brierley Hill - Stourbridge	yes	likely higher		Yes		Yes		15+	6.00	100		Longer term , technically quite difficult.
Met29	55	UKCentral- Warwick University - Coventry SPRINT A45	yes	likely higher	Helps to unlock University of Warwick expansion and major employment sites in the CWLEP area (Friargate, Coventry University in the city centre, and the University of Warwick)	yes		Yes		5 to 10		48	Linked	About integrating Coventry into the wider West Midlands economy, and HS2 in particular. Travel times may be reasonably substantial, given green belt distance involved. Coventry has aspirations for eight trains an hour to Birmingham international, and this project may duplicate these / existing rail links.
Met38	56	SPRINT - Birmingham Connected 8 Corridors	DUPLICATION							5 to 10		400		Sprint network - umbrella term for the other sprint schemes. Ten year rolling programme
Met31	57	SPRINT - UKCentral - Solihull via Damson Parkway	yes	likely higher	10.2 km BRT scheme linking HS2 Interchange via NEC, Airport/ International/ JLR and Solihull town centre. Providing high quality scheme joining what in future will be two town centres in Solihull. May assist development in Solihull and UK C (Interchange and Damson Parkway)	Yes		Yes		5 to 10	3.00	10	Linked	Costs need more work. Mainly concerns vehicle purchase.
Met32	58	East Birmingham to UK Central Metro Extension	yes	likely higher	A major scheme of strategic importance. Connecting Birmingham HS2 Curzon St from Birmingham Eastside Extension to NEC/ Airport/ International / HS2 Interchange at UK Central. Along Bordesley Green and Chelmsley Wood corridor.	Yes		Yes	Goes through a large area of inner city Birmingham. Could be used as a catalyst for major regeneration, given that substantial residential development in that area is planned. The line runs down through Birmingham Business Park (where there is scope for intensification) then to HS2 triangle. Bordesley Park AAP deals with the broad scope of works necessary in regeneration terms.	5 to 10	3.00	470	Super	
Met33	59	Longbridge to Birmingham SPRINT	yes	likely higher	In principle, this type of scheme could have an impact. Whilst there is a major site at the end of the line (Longbridge sites), this is not about replicating rail schemes, but is more about intermediate stops - and thus could have site development impacts in the corridor.	Yes		Yes		10 to 15	5.00	52	Linked	Cross City Line main rail and rapid transit mode for this corridor
Met34	60	Interchange to Coleshill Parkway SPRINT	yes	likely lower	Sprint north to Coleshill parkway. This is a high level concept at the moment, and needs more work. The route appears weak in unlocking development potential.	N/a		N/a		10 to 15		15		
Met35	61	i54 SPRINT (including extension to Penn and Merry Hill)	yes	likely higher	Route to Stafford Road up to i54.	Yes		Yes	Appears strong, given links to i54 , Wolverhampton and University.	10 to 15	5.00	18		
Met36	62	Dudley Very Light Rail Passenger Network, 3 phases Dudley Port , Dudley, Brierley Hill,	yes	likely higher	Dudley Council want to connect Dudley TC to the rail network at Dudley Port.	Yes		Yes		15+	6.00	0		Subject to Black Country Rapid Transit review. VLR innovation centre test track now seperate from metro line. It works on a Dudley level, but not on wider CA level.
	63	Russells Hall Hospital,- Stourbridge	yes	likely lower		N/a		N/a				235		
Met37	64	Wolverhampton - M54 Junction 2 Rapid Transit	DUPLICATE									100		this is the i54 link as above
Met38	65	Rapid transit Wolverhampton to Wednesfield and Walsall	DUPLICATE									0		ignore, covered above
Met39	66	Bilston Urban Village Metro Stop	yes	likely higher		Yes		Yes	Likely to help development in a regeneration area.	5 to 10	5.00	10		Useful from regeneration point of view, but metro operational aspects are problematical, given that this additional stop slows line speeds.

Met40	67	Walsall to Wolverhampton via Willenhall SPRINT	DO NOT PLOT AT REQUEST OF ITA										10			
Met41	68	Walsall to Wednesbury Rapid Transit		yes	likely higher		Yes		Yes	Likely to help development in a regeneration area.	15+	6.00	15			Probably based on tram / train tech so longer term
Met42	69	Walsall - Pelsall - Brownhills - Lichfield Rapid Transit		yes	Likely lower		N/a		N/a		10 to 15		165			Expected less likley to happen during the plan period looked at. More work required. Not taken further at this stage.
Met43	70	Warwick to Interchange SPRINT		yes	Likely lower	Important scheme (particularly for labour market access, given that Warwick labour market skills are a good match to advance manufacturing aspirations at UKC) but unlikely, in itself, to have major impactson site development.	N/a		N/a		15+		44			Market may deal with this without state intervention, possibly through executive coach services.
Met44	71	Hall Green to Solihull SPRINT		yes	Likely lower		No		No		10 to 15		20			Stratford Road in Birmingham is a main strategic highway - but this project may need more development.
Met45	72	Sutton Coldfield Public Transport Package (SPRINT element)		yes	likely higher	Goes into Birmingham. Sutton Coldfield is big, good skillset labour market which will need better PT. Could get the train from Sutton Coldfield itself, but this connects better to local area.	Yes		Yes	Ties in with SUE. Also will reinforce town centre development: Sutton is affluent, but centre will need reinforcement. Project could tie in with new interchange.	10 to 15	5.00	35	Super	Some committeed utning from GBSELP but need to keep pushing on public transport side.
Met46	73	Sutton Coldfield to Interchange SPRINT		yes	likely lower	In principle, this could be included but it is difficult to see this scheme enhancing values and therefore viability	N/a		N/a		15+		28			Goes to UKCentral. Delivery likely to track the UK Central delivery date.
Met47	74	Metro 5 W's Phase 1	DUPLICATE										28			covered by rail connectivity and Wolverhampton to NewCross Hospital rapid transit connection scheme
Met48	75	Metro Brierley Hill - Stourbridge	DUPLICATE										100			already done
	76	**Main Road Network**														
Met49	77	Coventry Gateway Development		yes	likely higher	Coventry Gateway is major development area	yes		yes		0 to 5	1.00	80			
Met50	78	Coventry Ring Road Enhancements		yes	likely higher	likely to help support development in city centre	yes		yes		5 to 10	3.00	50			
Met52	79	Highgate Rd A4167		yes	likely higher	Improve access to Birmingham Enterprise Zone and city centre improvements	yes		yes		5 to 10	3.00	13			
Met53	80	Sutton Coldfield Highway Improvements		yes	likely higher	Helps Sutton Coldfield regeneration opportunities	no	likely of insufficient scale to make signficant improvements	n/a	n/a	5 to 10		7			
Met54	81	Bus lane and signalisation at Gravelly Hill/Kingsbury Rd junction		yes	likely lower	unlikely to unlock specific sites	n/a	n/a	n/a	n/a	5 to 10		30			
Met55	82	A4040/A5127 Six Ways, Erdington		yes	likely lower	General network improvements	n/a	n/a	n/a	n/a	5 to 10		5			
Met56	83	Dudley Borough Highway Network Junction Improvement Programme		yes	likely lower	General network improvements	n/a	n/a	n/a	n/a	0 to 5		10			rolling ten year programme
Met57	84	Dudley Borough Traffic Signal Upgrade Programme (includes local roads)		yes	likely lower	General network improvements	n/a	n/a	n/a	n/a	0 to 5		18			rolling ten year programme
Met58	85	Bus corridor/Citylink pinchpoint measures across main bus corridors in Birmingham		yes	likely lower	General network improvements	n/a	n/a	n/a	n/a	0 to 5		50			rolling ten year programme
Met59	86	Strategic Route Corridor Improvements , improved asset condition, capacity and safety improvements for following corridors : A41, A461, A4034, A4123, A457, A4100		yes	likely lower	General network improvements	n/a	n/a	n/a	n/a	0 to 5		150			rolling ten year programme
Met60	87	UKC - Connecting Solihull Programme Part A Multi-Modal Access to Key Nodes		yes	likely higher		yes		yes		5 to 10	3.00	100			
Met61	88	A461 Walsall Ring Rd to Chester Rd Highway (Junction) Improvements		yes	likely lower	n/a	n/a	n/a	n/a	n/a	5 to 10		15			
Met62	89	Stafford Rd A449 Junction 2 Vine to M54		yes	likely higher	Likely to unlock development in Stafford Road Corridor (154 to M54)	yes	Small scale but of sufficient strategic importance to major site to warrant inclusion	yes		0 to 5	1.00	5			
Met63	90	Birmingham Northfield junction improvements		yes	likely lower	General network improvements					5 to 10		2			
Met64	91	Wolverhampton City Centre Public Realm improvements		yes	likely higher	will increase values and thus viability					0 to 5	1.00	5			
Met65	92	Willenhall Rd Dualling A454 Deans Rd to Ring Road		yes	likely lower	General network improvements					10 to 15		20			
Met66	93	A4114 Hollyhead Rd/ B4106 Allesley Old Rd Corridor enhancements		yes	likely lower	General network improvements					5 to 10		25			
Met67	94	A444 Corridor enhancements		yes	likely higher	will support development adjacent					0 to 5	1.00	25			
Met68	95	A4101/A461 Strategic Highway Corridor Enhancement		yes	likely lower	General network improvements					5 to 10		15			
Met69	96	West Bromwich South West Bypass		yes	likely higher	will unlock adjacent development sites					5 to 10	3.00	40			
Met70	97	A41 Albion Junction Improvement, Carters Green		yes	likely higher	will unlock adjacent development sites					5 to 10	3.00	10			
Met71	98	Walsall Connected pedestrian access improvements and Ring Road junction improvements		yes	likely lower	n/a	No	n/a	n/a	n/a	5 to 10		3			
Met72	99	Ettingshall Rd/Willenhall Rd new highway link		yes	likely higher	likley to unlock development					10 to 15	5.00	6			
Met73	100	Wednesfield Rd/Willenhall Rd Access Route and junction improvement		yes	likely lower	Helps Wolverhampton City Centre but unlikely to be directly helpful to sites					5 to 10		15			
Met74	101	The Rock A41 Tettenhall Rd junction improvement		yes	likely lower	General network improvements					5 to 10		7			
Met75	102	A4123 Thompson Avenue Dualling and Improved Junctions		yes	likely lower	General network improvements					5 to 10		5			
Met76	103	Millfields Rd A4039 east of Bilston highway capacity enhancement		yes	likely lower	General network improvements					5 to 10		5			
Met77	104	Birmingham Ring Road		yes	likely higher	series of junction improvements to unlock development in Birmingham city	yes				5 to 10	3.00	80			
Met78	105	Bromford Gyratory		yes	likely lower	General network improvements					5 to 10		10			
Met79	106	Wolverhampton City Centre Ring Road breaking the collars on the city Bilston Rd Island (SCHEME A)		yes	likely higher	likely to help unlock development in Wolverhampton city centre					5 to 10	3.00	25			
Met80	107	Wolverhampton City Centre Ring Road breaking the collars on the city Stafford St junction (SCHEME B)		yes	likely higher	likely to help unlock development in Wolverhampton city centre					5 to 10	3.00	20			
Met81	108	Wednesfield Rd WCML rail bridge widening		yes	likely lower	General network improvements	n/a	n/a	n/a	n/a	10 to 15		8			
Met82	109	A4182 Junction Improvements, West Bromwich		yes	likely higher	development related	yes	n/a	yes		10 to 15	5.00	10			

Met83	110	Bilston Centre Oxford St Roundabout junction improvement		yes	likely higher	development related	yes	n/a	yes		10 to 15	5.00	20		
Met84	111	Cannock Rd WCML railway bridge highway widening		yes	likely lower	General network improvements	n/a	n/a	n/a	n/a	10 to 15		20		
Met85	112	Penn Road A449 Dualling		yes	likely lower	General network improvements					10 to 15		25		
Met85A	113	Binley Road/Walsgrave Corridor Capacity Enhancement		yes	likely lower	General network improvements					**10 to 15**				
Met85B	114	A452 Highway Capacity Connectivity to UKC		yes	likely higher	important access to HS2, likely consequences for UKC and Coventry	yes	n/a	yes		**10 to 15**	**5.00**			
Met85C	115	St Martins and A45 / Kenilworth Rd junctions Connectivity to UKC		yes	likely higher	important access to HS2, likely consequences for UKC and Coventry	yes	n/a	yes		**5 to 10**	**3.00**			
Met85D	116	Warwick University to A45 Connectivity to UKC	DUPLIC		likely lower	This may be important from agglomeration economies viewpoint, but difficult to see site development advantages at this distance from HS2. Nonetheless possibly a strategically important scheme.	n/a	n/a	n/a	n/a	**5 to 10**				
	117	**Town/City Centre Interchanges**													
Met86	118	Merry Hill bus station and bus access road		yes	likely lower	site development impact unlikely	n/a	n/a	n/a	n/a	5 to 10		10		
Met87	119	Dudley Bus Station		yes	likely lower	site development impact unlikely	n/a	n/a	n/a	n/a	5 to 10		10		
Met88	120	Sutton Coldfield Bus Interchange upgrade		yes	likely lower	site development impact unlikely	n/a	n/a	n/a	n/a	10 to 15		2		
Met89	121	UKC - Solihull Town Centre Accessibility and Movement Programme		yes	likely lower	site development impact unlikely	n/a	n/a	n/a	n/a	5 to 10		50		
Met90	122	Walsall Town Centre New Interchange		yes	likely lower	site development impact unlikely	n/a	n/a	n/a	n/a	5 to 10		10		
Met91	123	Coventry Pool Meadow Bus Station refurb		yes	likely lower	site development impact unlikely	n/a	n/a	n/a	n/a	0 to 5		20		
Met92	124	Blackheath Interchange		yes	likely lower	n/a	n/a	n/a	n/a	n/a	5 to 10		5		
Met93A	125	**Station - Pool Meadow People Mover**		yes	likely lower	no major impacts on sites as mostly addressed by rapid transit proposals	n/a	n/a	n/a	n/a	**10 to 15**		0		
	126	Metropolitan Cycle Network													
Met93	127	Cycle Charter Delivery Package		yes	likely lower	site development impact unlikely	n/a	n/a	n/a	n/a	0 to 5		15		rolling ten year programme
Met94	128	Coventry Local Trips Programme (Walking and Cycling)		yes	likely lower	site development impact unlikely	n/a	n/a	n/a	n/a	0 to 5		30		
Met95	129	Walsall Cycling and Walking "Big Bang" Cycle Network and local walking and cycling improvements		yes	likely lower	site development impact unlikely	n/a	n/a	n/a	n/a	0 to 5		3		
Met96	130	Wolverhampton Strategic Cycle Network		yes	likely lower	site development impact unlikely	n/a	n/a	n/a	n/a	0 to 5		30		
	131	**LOCAL**													
	132	**Local Access Highway Measures**													
Loc1	133	Warwick Uni/Westwood Housing Access		yes	likely higher	unlocks development sites	yes	This is of sufficient scale to impact this specific site developme nt	Yes		5 to 10	3.00	5		
Loc2	134	Keresley Link Road (A45 to M6/ A444)		yes	likely higher	unlocks residential development sites	yes	This is of sufficient scale to impact this specific site developme nt	yes	Unlocks sites for 3500 residential units and nearby employment sites	10 to 15	5.00	15		
Loc3	135	Gold Hill Access Improvements,Tipton, new highway link from A41		yes	likely higher	unlocks development sites	yes	This is of sufficient scale to impact this specific site developme nt	Yes		0 to 5	1.00	6		
Loc4	136	UKC - Connecting Solihull Programme Part B Multi-Modal Access to Development Sites outside the Hub Area		yes	likely higher		Yes		Yes		5 to 10	3.00	64		
Loc5	137	Walsall Accessing Growth Package, opening up key employment development sites		yes	likely higher	Package of infrastructure works to promote several employment development sites: Anson Junction Access; Parallel 9 Access Improvements; Moxley/Darlaston/Longacre; Monmer Lane	Yes		Yes		0 to 5	1.00	3	Super	
Loc6	138	Black Patch Access Improvements, Smethwick, newhighway link from A457		yes	likely higher	Unlocks local development in Black Country Corridor 12	Yes		Yes		5 to 10	3.00	10		
Loc6A	139	SUE Site Access Improvements Eastern Green		yes	likely higher	Helps release development sites in Coventry	Yes		Yes	Unlocks 2,500 house development	**5 to 10**	**3.00**	0		Housing development needs good connection to the A45.
Loc6B	140	SUE Site Access Improvements Walsgrave and Ansty		yes	likely higher	Helps release development sites in Coventry	Yes		Yes	Unlocks major employment site (Coventry Technology Park)	**0 to 5**	**1.00**	0		Walsgrave and Ansty need to connect to the A46. Grade separation of A46 is being investigated with Highways England.
	141	**Bus**													
Loc7	142	QE Hospital Interchange - bus		yes	likely lower	site development impact unlikely	n/a	n/a	n/a	n/a	5 to 10		3		
Loc8	143	Transforming Bus Travel Programme		yes	likely lower	site development impact unlikely	n/a	n/a	n/a	n/a	0 to 5		6		rolling ten year programme
Loc9	144	Accessible Transport Prospectus Delivery Package		yes	likely lower	site development impact unlikely	n/a	n/a	n/a	n/a	0 to 5		6		rolling ten year programme

	145	**Local Centres**													
Loc10	146	Development of Green Travel Districts		yes	likely lower	site development impact unlikely	n/a	n/a	n/a	n/a	0 to 5		100		rolling ten year programme
	147	**SMART MOBILITY**									**0 to 5**				**rolling ten year programme of all measures**
Smart1	**148**	Sustainable Transport Smart Network Smarter Choices Package		yes	likely lower	site development impact unlikely	n/a	n/a	n/a	n/a			24		
Smart2	149	Roll out of network information, wayfinding and totem systems		yes	likely lower	general network improvements	n/a	n/a	n/a	n/a			14		
Smart3	150	Swift enhancements - best fare capping and EMV contactless payments		yes	likely lower	general network improvements	n/a	n/a	n/a	n/a			20		
Smart4	**151**	Swift Mobility - Personal Mobility Account		yes	likely lower	general network improvements	n/a	n/a	n/a	n/a			3		
Smart5	**152**	Smart Mobility - Travel Information Package		yes	likely lower	general network improvements	n/a	n/a	n/a	n/a			5		
Smart6	153	Low Emission Vehicle Programme		yes	likely lower	general network improvements	n/a	n/a	n/a	n/a			100		
Smart7	154	Security Command Centre Technical Upgrades		yes	likely lower	general network improvements	n/a	n/a	n/a	n/a			2		
Smart8	**155**	Electric City		yes	likely lower	general network improvements	n/a	n/a	n/a	n/a			30		
Smart9	**156**	Pilot Neighbourhood Freight Consolidation		yes	likely lower	general network improvements	n/a	n/a	n/a	n/a			20		
Smart10	157	ULEV charging and refuelling network		yes	likely lower	general network improvements	n/a	n/a	n/a	n/a			50		
Smart11	158	Low Carbon Vehicle Technology Fund - Conversion of Taxis to LPG		yes	likely lower	general network improvements	n/a	n/a	n/a	n/a			50		
	159	New station at Bromsgrove (opening 2016)	COMMITTED SO NOT MAPPED				Yes		Yes	Going to open next spring. No real opportunities around the station. But opens up opportunities in the Bromsgrove area. Potential for housing intensification.					
	160	Metro Eastside Extension (committed scheme)	COMMITTED SO NOT MAPPED				Yes		Yes						
	161	Wolverhampton to New Cross Hospital Rapid Transit Connection (Option under review)		yes	likely higher	In principle a potentially important scheme. Need to connect Black Country strategic centres. Critical is connecting Wolverhampton to the regional hospital. Black Country Rapid Transit Review going on at time of writing. ITA consultants working out how best to connect Wolverhampton, Walsall, Dudley. This can either be delivered by a light rail corridor (partially running on disused rail line) or heavy rail on different line. Study will look at best option. Important part is Wolverhampton to New Cross hospital if the rail option is chosen. This would unlock significant development sites.			No	Development sites may be better served by the rail line alignment option.	5 to 10				related to Black Country rapid transit study

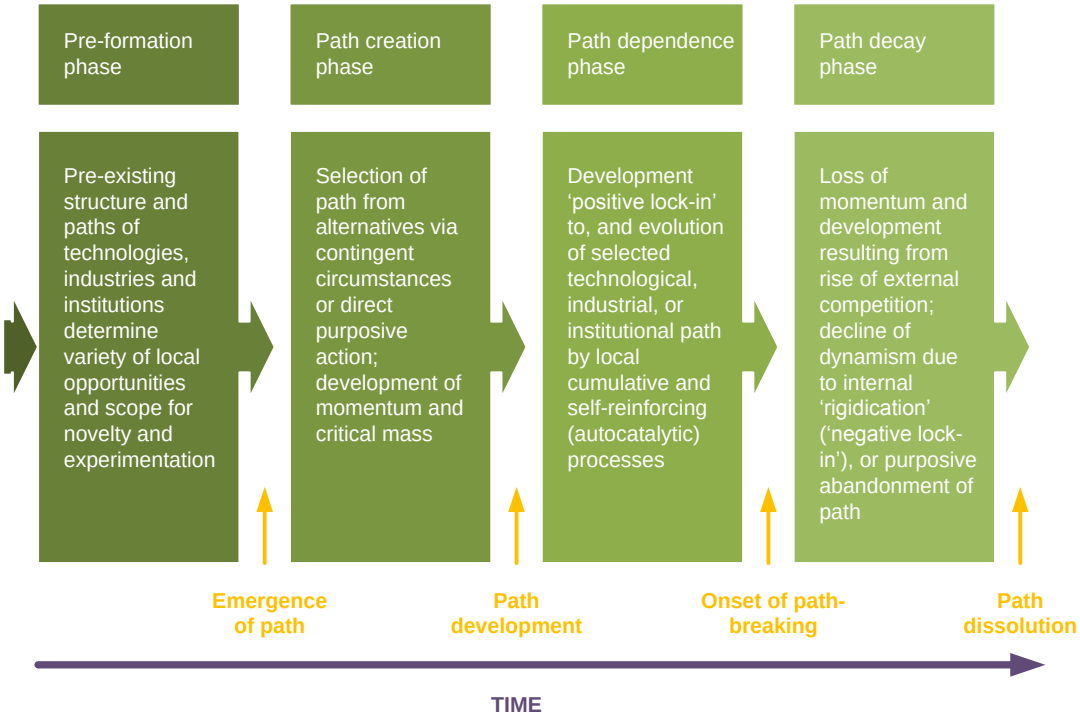
APPENDIX D ECONOMIC PATH DEPENDENCY

Delivering growth objectives requires an understanding of place and history

Prof James Simmie's work on 'path dependency' gives a helpful background perspective to this work. As Simmie has pointed out, it is an area's economic inheritance that determines much of the social and economic conditions of communities today.

Simmie puts the role of innovation and change at the centre of explanations of why areas have performed in the way that they do. He suggests that the economic future of places rests to a certain extent on its historic economic "path". Places are therefore said to be "path dependent".

Figure 10.6 Economic path creation and path dependency



Source: Simmie et al (2008) History matters: Path dependence and innovation in British city-regions

It is certainly not possible to say that the West Midlands is 'locked in' to a particular path – or that it is in a process of path decay. The area and its firms are too multifarious and complex to make such a statement. But one particular difficulty for the West Midlands is that the particular physical effects of industrial uses on sites are slowing down this process of change and modernisation. As we show below, ex-industrial sites are frequently highly contaminated. This renders redevelopment uneconomic, meaning that parts of the West Midlands become 'locked in' to outdated forms of development.

Simmie's work suggests that the challenge facing British city-regions is to create a new growth path. His work makes a range of suggestions about how this process might be effected, and there are encouraging signs that the West Midlands is in precisely this process. This study attempts to use these ideas as a starting point to suggest how infrastructure

provision might help the West Midlands accelerate the process of breaking out of this economic 'lock in', in order to accelerate the process of delivering the CA's objectives.

As Simmie states, areas "must be able to escape their past to create new economic futures. Continual growth is never guaranteed. There is a continual need for constant change and innovation".[67]

[67] Simmie et al (2008) *History matters: Path dependence and innovation in British city-regions.* Simmie: "it is difficult for new ideas to start in old industrial places. Nineteenth century industrial legacies can be difficult to overcome".

APPENDIX E STRATEGIC GROWTH PLANS TO 2031 BY LOCAL PLAN AREA

Birmingham: strategic growth plans by phase

Birmingham has an up-to-date draft Local Plan (Birmingham Development Plan) which sets out a number of Growth Zones. This is accompanied by a Site Delivery Plan and Infrastructure Plan.

Examination hearings for the draft Plan took place in late 2014, and consequently additional technical work has been provided by the local authority. The inspector has now agreed with the local authority a schedule of main modifications necessary to make the plan sound and a further round of public consultation will be carried out before the plan is adopted.

The Birmingham Development Plan seeks to set out the provision for new homes and employment, ensuring that the location of homes matches the provision of opportunities for new employment. The Plan acknowledges that Birmingham will not be able to achieve the levels of housing growth required to meet need within its boundary. We have not included provision for this additional housing within this study, as the location for this growth has not been confirmed.

We have used the Plan to pull out the ten largest growth areas were used as a basis to understand the spatial growth for Birmingham. The focus is on re-using existing urban land. The City Centre will play a large role in this, and includes the largest identified housing growth area. Other areas include two areas covered by Area Action Plans – Aston, Newtown and Lozells, and Longbridge – and two new areas of growth located near to the A38.

The Plan includes some detail on phasing of growth. Where we needed additional detail for this study (on housing numbers, job numbers and employment floorspace) we agreed these with Birmingham City Council officers.

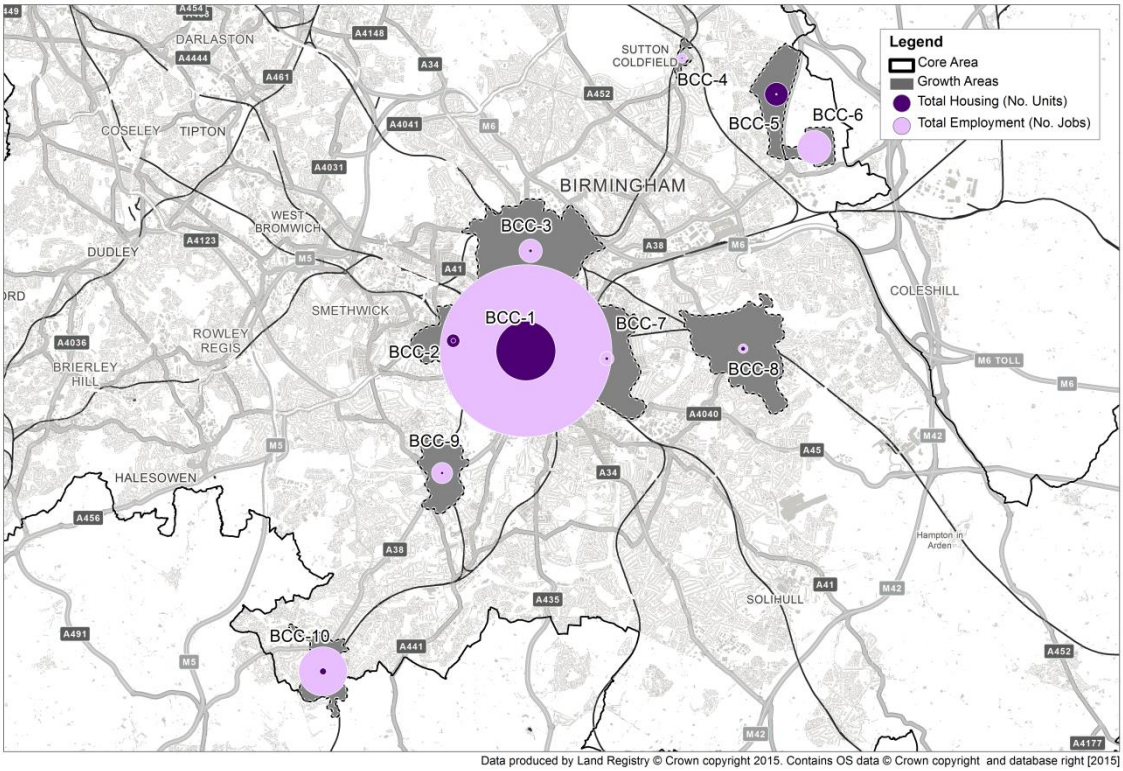
Table 10.1 shows the planned housing and jobs growth for the ten growth areas.

Table 10.1 Total planned growth and strategic growth locations in Birmingham to 2031

Area	Housing	Jobs
City Centre	12,800	36,893
Greater Icknield	2,842	1,000
Aston, Newtown & Lozells AAP	786	5,000
Sutton Coldfield	450	2,030
Langley Sustainable Urban Extension	5,000	336
Peddimore	-	7,214
Bordesley Park AAP	750	3,000
Eastern Triangle	1,000	2,016
Selly Oak and South	700	4,500

Edgbaston		
Longbridge AAP	1,450	10,500
Growth outside growth areas	25,322	37,510

Figure 10.7 Housing and jobs growth to 2031: strategic growth locations



Black Country: strategic growth plans by phase

The Black Country Core Strategy is a joint plan which covers Dudley, Sandwell, Walsall and Wolverhampton. The Core Strategy was adopted in February 2011 and sets out housing and employment growth from 2009 to 2026.

We have used the Core Strategy to pull together the growth areas for the Black Country. These are based on their 16 regeneration corridors and four strategic sites. We made a number of adjustments to the Core Strategy growth numbers for the purposes of this study. These are as follows.

- An estimate was also made to extend the growth from 2026 to 2031 to provide consistency across the other CA authorities. For housing, an estimate was made for total growth across the authorities between 2026 and 2031 and apportioned to each growth area[68]. For employment, it was agreed for the annualised growth within the Core Strategy to be extended to 2031

[68] Sent by Wolverhampton City Council in May 2015 to inform the PBA Strategic Housing Needs Study Stage 3 Report Working Draft June 2015.

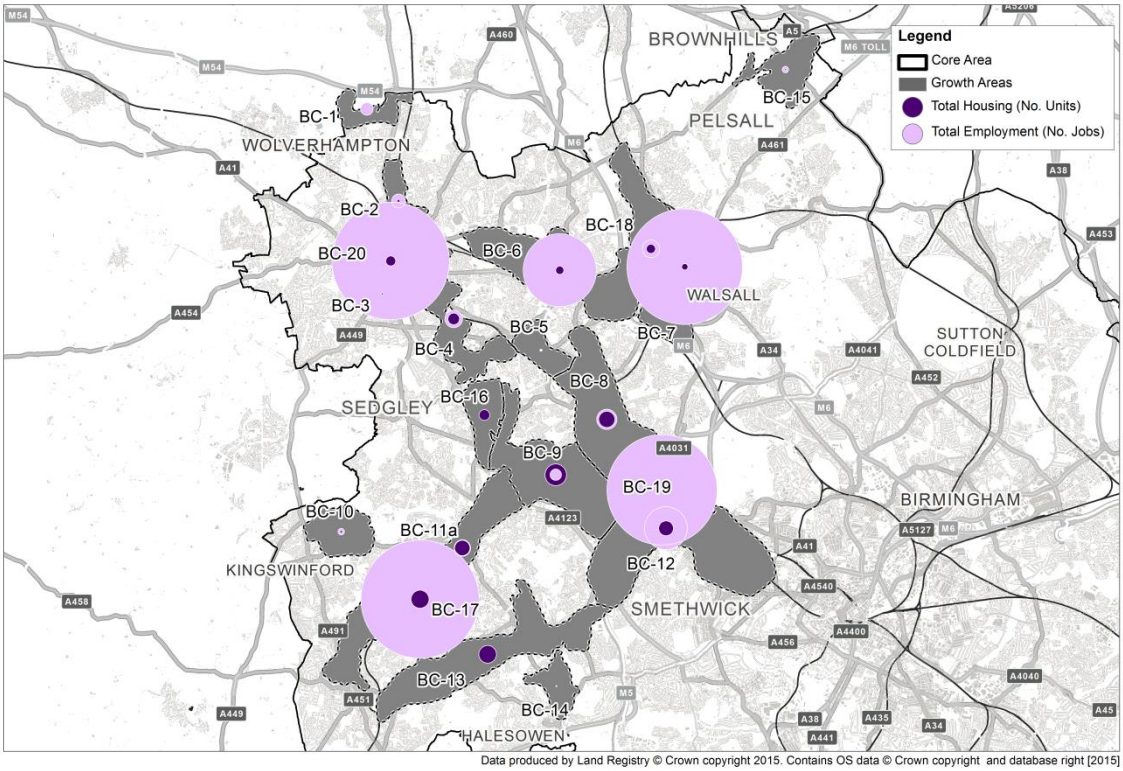
- An allowance would be made for completions since 2009. This is because the Core Strategy has been in place for a number of years. These completions are based on figures collected by the authorities and pulled together by the Black Country Consortium.
- Whilst just outside of the Black Country administrative boundary, I54 and associated growth was included in the figures as this has an effect on required infrastructure in the Black Country.

The growth projections show that the strategic centres will contribute a significant number of jobs across our study period. We are aware that more work is being completed on the projections for the strategic centres, and this may alter the growth in these areas. For this reason, while we will take note of the importance of the strategic centres, we will also consider the other growth areas in the authority.

Table 10.2 Total planned growth and strategic growth locations in the Black Country to 2031

Area	Housing	Jobs
Corridor 1: Pendeford/ Fordhouses	-	2,893
Corridor 2: Stafford Road	662	3,182
Corridor 3: South of Wolverhampton Strategic Centre	431	-
Corridor 4: Wolverhampton - Bilston	2,632	4,050
Corridor 5: Loxdale – Moxley	553	289
Corridor 6: Wednesfield - Willenhall - Darlaston	1,866	16,780
Corridor 7: Bloxwich - Birchills - Bescot	2,105	4,050
Corridor 8: Hill Top	3,727	4,629
Corridor 9: Tipton - Dudley Port - Brades Village	4,950	2,604
Corridor 10: Pensnett - Kingswinford	552	1,447
Corridor 11a: Dudley - Brierley Hill - Stourbridge and Corridor and 11b: Brierley Hill - Stourbridge	3,561	3,761
Corridor 12: Oldbury - West Bromwich - Smethwick	3,381	9,836
Corridor 13: Rowley Regis - Jewellery Line	4,083	-
Corridor 14: Coombs Wood - Halesowen	446	289
Corridor 15: Brownhills	390	1,447
Corridor 16: Coseley - Tipton - Princes End	2,450	-
Brierley Hill	4,105	27,152
Walsall	1,457	26,539
West Bromwich	511	25,314
Wolverhampton	2,271	26,988
Growth outside growth areas	14,965	17,331

Figure 10.8 Housing and jobs growth to 2031: strategic growth locations



Coventry: strategic growth plans by phase

Coventry is in the process of developing a new Local Plan after the previous one was withdrawn. The previous plan aimed to keep all developments on brownfield sites. However, in the emerging plans there is expected to be some (albeit limited) growth on the green belt.

It is too soon in the planning process to be certain about locations for growth. As an interim solution, the authority provided us with broad growth areas across Coventry and beyond. The planned growth used for this study is therefore indicative, and has been provided as a possible range (ie. City Centre housing growth could be from 3,000 houses to 5,000 houses). As this is an infrastructure study, it was agreed with Coventry that the maximum growth would be taken for each growth areas (as shown in Table 10.3). We need to be mindful that this is an overestimation but given the fluidity of the figures it was considered a sensible approach.

The housing numbers have been extracted by Coventry City Council from the Strategic Housing Market Assessment. The growth areas in Coventry for this study show that growth may extend to neighbouring authorities (North Western Periphery, North Eastern Periphery and Southern Periphery). Coventry falls within the Coventry and Warwickshire LEP, and sits within a separate housing market area to Birmingham and the Black Country. We need to be clear about this in the debate for housing supply.

The Strategic Housing Market Assessment suggests that there should be a maximum of 16,000 houses within the city boundary. As we have taken the maximum range for each

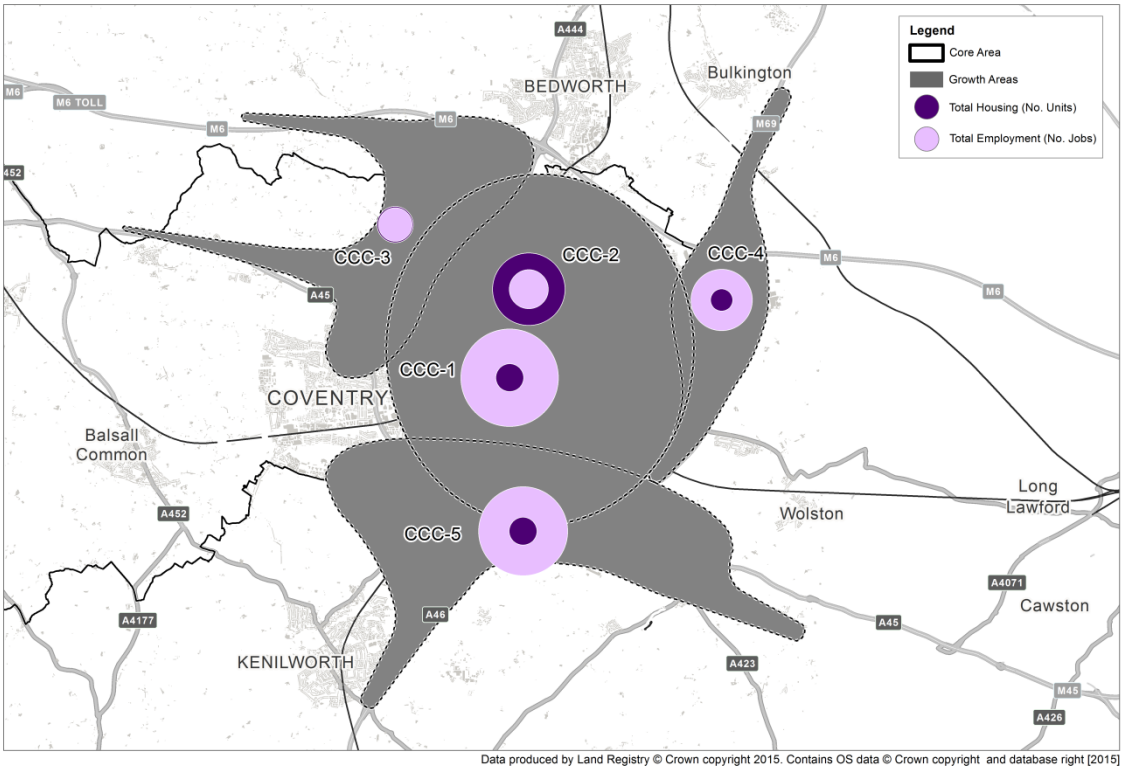
growth area, this is likely to be an overestimate of the housing number. We have used the same approach for jobs growth.

Jobs numbers have been based on key development sites in the Coventry and Warwickshire Strategic Economic Plan. As with the housing growth areas, the employment sites may also extend into neighbouring authority. We have not ignored these sites in this study, as they may have an impact on the infrastructure required for the CA.

Table 10.3 Total planned growth and strategic growth locations in Coventry to 2031

Area	Housing	Jobs
Coventry City Centre	5,000	17,500
Coventry Urban Growth	13,000	7,000
Coventry North Western Periphery	6,500	6,000
Coventry North Eastern Periphery	4,000	11,000
Coventry Southern Periphery	5,000	16,000
Growth outside growth areas	-	-

Figure 10.9 Housing and jobs growth to 2031: strategic growth locations



Solihull: strategic growth plans by phase

The Solihull Local Plan was adopted in December 2013. In May 2014 the Plan was subject to a High Court review challenging the allocation of two sites in the Tidbury Green area to the greenbelt and its objectively assessed need for housing. An appeal by the local authority was dismissed by high court in November 2014.

Despite the uncertainty with the Local Plan housing supply, it was agreed with Solihull that for the Local Plan was a reasonable starting point to identify growth areas for this study.

To develop the Solihull growth areas, smaller site allocations in the Local Plan were grouped into five key areas. Chelmsey Wood, UK Central, Solihull itself and Shirley, Blythe Valley Park and Dickens Heath, and finally Knowle and Dorridge. The boundaries of these growth areas are indicative at this stage. Growth within each smaller site allocation was combined to provide the total growth for each area. We appreciate there may be some unallocated growth within these areas but these have not been taken into account. This is therefore considered an underestimate of the total growth.

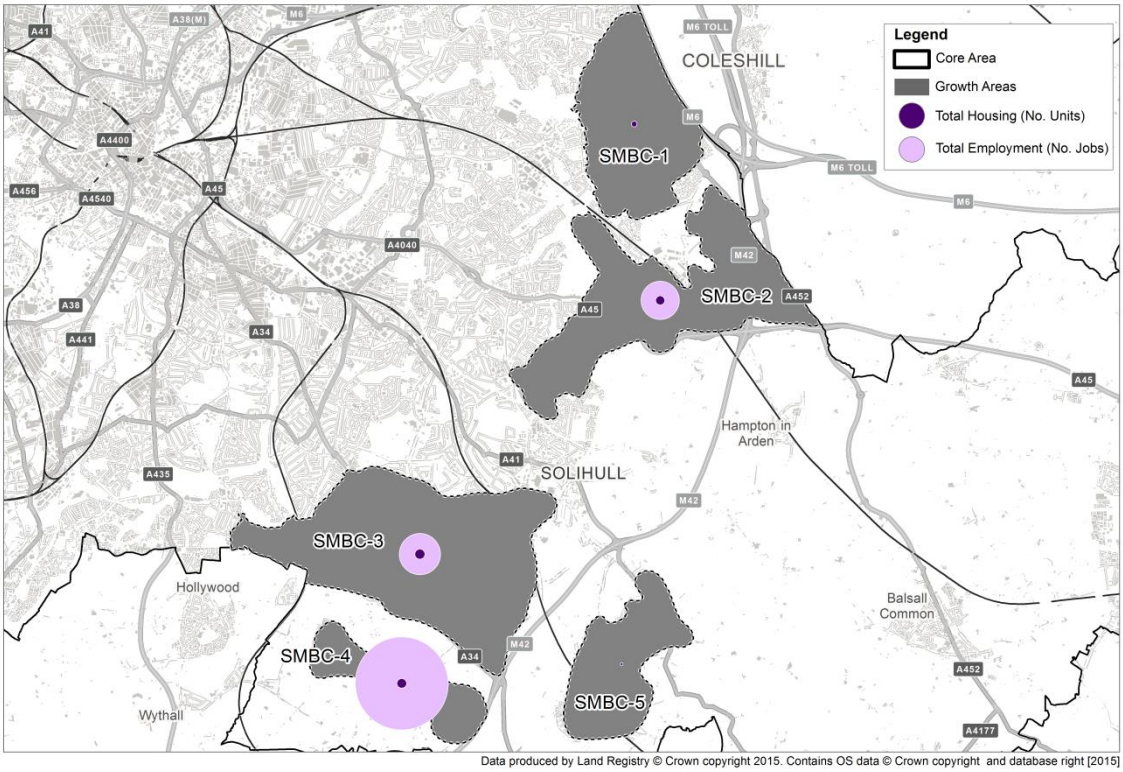
The growth for housing was projected from 2006 to 2028, whereas the projections for jobs are from 2009 to 2028. Phasing broadly matched the Local Plan where possible, where no phasing information was available an even distribution across the time period was adopted. An adjustment was made for completions between 2006 and 2012.

The estimate from 2028 to 2031 to provide a comparison against the other authority areas was by extending annualised growth to 2031.

Table 10.4 Total planned growth and strategic growth locations in Solihull to 2031

Area	Housing	Jobs
Chelmsey Wood	790	-
Airport, UK Central and JLR	1,300	5,474
Shirley and Solihull	1,430	5,888
Dickens Heath and Blythe Valley Park	1,371	13,339
Knowle and Dorridge	365	-
Growth outside growth areas	4,007	0

Figure 10.10 Housing and jobs growth to 2031: strategic growth locations



The Local Plan states that the housing projections are for 11,000 houses across the plan period both inside and outside of growth areas. Taking into account completions, this resulted in a supply from 2012 to 2028 of 8,678 houses. This housing supply has been extended to 2031 using the assumed growth in each growth area, plus an allowance for growth outside of these areas. As stated previously, the relative balance between growth inside and outside the growth locations is important, because it provides us with guidance on the extent to which we can focus on interventions in specific areas, against more general and dispersed infrastructure measures to support growth.

Growth expected outside specified growth areas but with the CA area

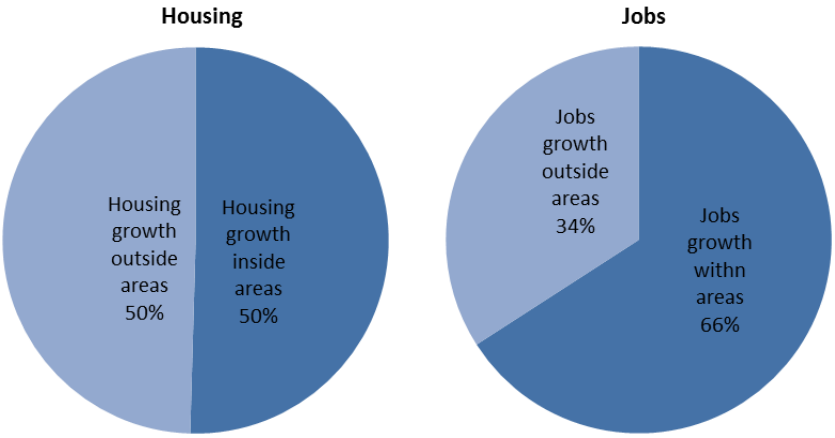
Of course, not all growth in a local plan area takes place within the growth zones we have defined. Much is distributed more widely across a local authority area.

The relative balance between growth inside and outside the growth locations is important, because it provides us with guidance on the extent to which we can focus on interventions in specific areas, against more general and dispersed infrastructure measures to support growth.

Birmingham

In Birmingham, the draft Local Plan includes a target for 51,100 home and 110,000 jobs over the plan period. Figure 10.11 shows that, after taking into consideration completions and any updates to growth numbers by the local authority, the majority of remaining employment growth is within the growth areas (66%), whereas for housing, half of the housing growth falls outside the growth areas.

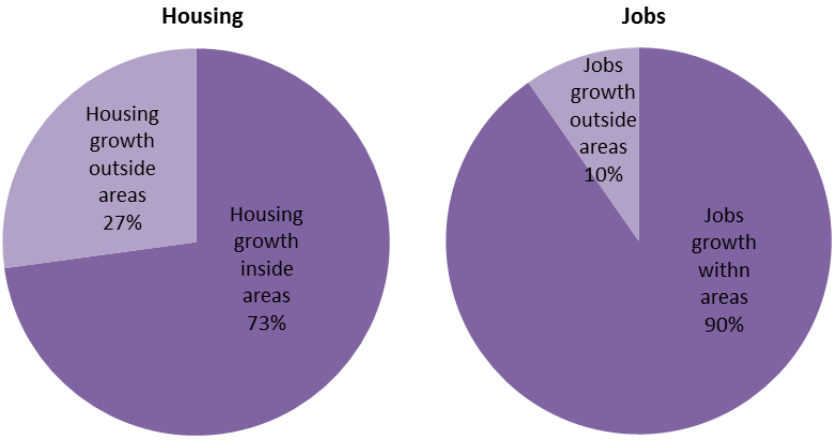
Figure 10.11 Birmingham - jobs and housing growth inside and outside growth locations (2031)



The Black Country

In the Black Country, the Core Strategy notes that some large developments will be brought forward outside of the growth corridors, the land use pattern is not expected to change by 2026. Figure 10.12 shows that in the Black Country the majority of development is anticipated to take place within the growth areas. This pattern could be related to the number and size of the growth areas. The relative balance between growth inside and outside these areas shows that the majority of interventions suggests be focussed either within the growth areas or on major developments outside of the growth areas.

Figure 10.12 Jobs and housing growth inside and outside growth locations (2031)[69]

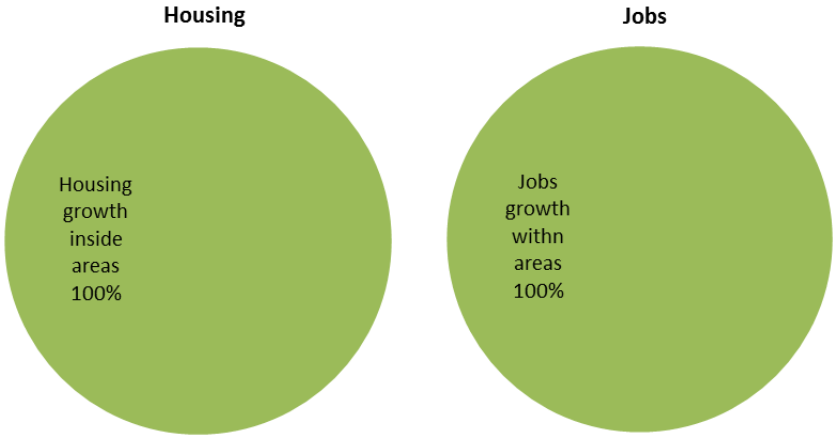


Coventry

It is assumed that there will be no dispersed growth outside of the growth areas. This is not unrealistic, as there is very little land outside of the growth area. Purely for comparison against the other authorities, Figure 10.13 shows this split.

[69] These figures differ from the proportions set out in Table 1 of the Black Country Core Strategy (2011) because the figures used in this study take into consideration completions from 2009 to 2014.

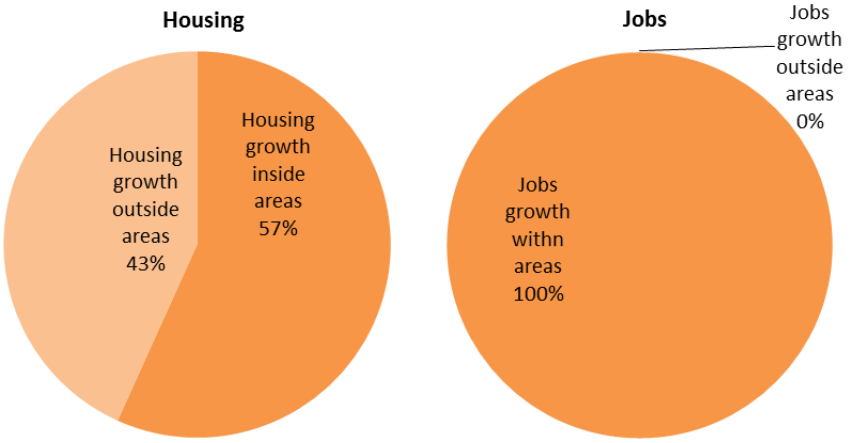
Figure 10.13 Jobs and housing growth inside and outside growth locations (2031)



Solihull

Based on the information available, Figure 10.14 shows the relative proportion of growth inside and outside of the growth areas. As shown in the jobs figure, we have not assumed any additional jobs growth outside of the growth area. This was discussed with Solihull, and whilst there may be additional jobs outside of the growth areas, these are likely to be limited.

Figure 10.14 Jobs and housing growth inside and outside growth locations (2031)



APPENDIX F FOUL AND SURFACE WATER SEWERAGE CAPACITY

West Midlands Infrastructure Capacity Study 2015-2031

Severn Trent High Level Comments

13 August 2015

		2015-2031				
Site Ref	**Location**	**Housing** (units)	**Employment (Jobs)**	**Employment floor area (sqm)**	**Severn Trent comments regarding potential impact of the growth areas.**	**Water Supplier**
Coventry						
Zone 1	City Centre	5,000	17,500	331,700	Provided surface water from existing impermeable areas is managed sustainably and where possible discharges to the foul/combined sewerage system is reduces, it is not envisaged that development across the city centre will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. Development in this area would drain to Finham sewage treatment works.	Severn Trent
Zone 2	Urban Growth	13,000	7,000	100,000	Generally the Coventry sewerage catchment has good performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. Development in this area would drain to Finham sewage treatment works.	Severn Trent
Zone 3	North Western Periphery	6,500	6,000	251,000	Significant development to the west of Coventry are expected to have a significant impact on current sewer performance as the existing sewerage network in this area is usually small diameter with limited capacity. More detailed assessments will required once specific development locations are identified. Development in this area would drain to Finham sewage treatment works.	Severn Trent
Zone 4	North Eastern Periphery	4,000	11,000	620,400	There is reasonable levels of capacity to the east of Coventry, however further detailed capacity assessments will be required once specific development proposals are available. Development in this area would drain to Finham sewage treatment works.	Severn Trent
Zone 5	Southern Periphery	5,000	16,000	574,801	Due to the proximity of Finham sewage treatment work, it is not envisaged that development proposals to the south of Coventry will represent any capacity issues. Development in this area would drain to Finham sewage treatment works.	Severn Trent

Site Ref	Location	2015-2031 Housing (units)	2015-2031 Employment (Jobs)	2015-2031 Employment floor area (sqm)	Severn Trent comments regarding potential impact of the growth areas.	Water Supplier
Solihull MBC						
SMDC1	Chelmsey Wood	790	-	-	The Chelmsey Wood is served by Coleshill sewage treatment works to the east. There is reasonable levels of capacity across the current sewerage catchment but detailed capacity assessments will be required once specific development proposals are available to identify any potential localised capacity constraints which may need to be addressed to accommodate additional development.	Severn Trent
SMDC2	Airport, UK Central and JLR	1,300	5,474	195,312	This area is served by Coleshill sewage treatment works to the north There is reasonable levels of capacity across the current sewerage catchment but detailed capacity assessments will be required once specific development proposals are available to identify any potential localised capacity constraints which may need to be addressed to accommodate additional development.	Severn Trent
SMDC3	Shirley and Solihull	1,430	5,888	102,877	This area is served by Barston sewage treatment works to the north east. There is reasonable levels of capacity across the current sewerage catchment but detailed capacity assessments will be required once specific development proposals are available to identify any potential localised capacity constraints which may need to be addressed to accommodate additional development.	Severn Trent
SMDC4	Dickens Heath and Blythe Valley Park	1,371	13,339	200,092	This area is served by Barston sewage treatment works to the north east. There is reasonable levels of capacity across the current sewerage catchment but detailed capacity assessments will be required once specific development proposals are available to identify any potential localised capacity constraints which may need to be addressed to accommodate additional development.	Severn Trent
SMDC5	Knowle and Dorridge	365	-	-	There is reasonable levels of capacity across the Knowle and Dorridge sewerage catchments, albeit that that as with all catchments there are localised capacity constraints which may need to be addressed to accommodate additional development. Further detailed capacity assessments will be required once specific development proposals are available. The southern part of this catchment is served by Norton Green sewage treatment works, whilst the northern area drains northwards to Barston STW.	Severn Trent

Site Ref	Location	2015-2031 Housing (units)	2015-2031 Employment (Jobs)	2015-2031 Employment floor area (sqm)	Severn Trent comments regarding potential impact of the growth areas.	Water Supplier
Birmingham						
BCC1	City Centre	12,800	36,893	880,365	Provided surface water from existing impermeable areas is managed sustainably and where possible discharges to the foul/combined sewerage system is reduces, it is not envisaged that development across the city centre will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available.	Severn Trent
BCC2	Greater Icknield	2,842	1,000	22,800	Generally the Birmingham sewerage catchment has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available.	Severn Trent
BCC3	Aston, Newtown & Lozells AAP	786	5,000	30,000	Generally the Birmingham sewerage catchment has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available.	Severn Trent
BCC4	Sutton Coldfield	450	2,030	50,687	Subject to detailed capacity assessments will be required once specific development proposals are available, it is not envisaged that these development proposals will have a major impact on existing sewer capacity provided surface water run-off is managed sustainably and off-site connections to the sewerage system are minimised.	South Staffs Water
BCC5	Langley Sustainable Urban Extension	5,000	336	-	These development proposals are situated close to Minworth sewage treatment works. In 2015 the nearby Langley Mill STW, just to the north of this development site, was abandoned with all flows now pumped to Minworth. Subject to detailed capacity assessments will be required once specific development proposals are available, it is not envisaged that this development will have a major impact on existing sewer capacity.	South Staffs Water
BCC6	Peddimore	-	7,214	316,800	This development is situated close to Minworth sewage treatment works. Subject to detailed capacity assessments will be required once specific development proposals are available, it is not envisaged that this development will have a major impact on existing sewer capacity.	South Staffs Water

BCC7	Bordesley Park AAP	750	3,000	266,538	Generally the Birmingham sewerage catchment has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available.	Severn Trent
BCC8	Eastern Triangle	1,000	2,016	38,600	Generally the Birmingham sewerage catchment has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available.	Severn Trent
BCC9	Selly Oak and South Edgbaston	700	4,500	35,000	Generally the Birmingham sewerage catchment has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available.	Severn Trent
BCC10	Longbridge AAP	1,450	10,500	330,000	Generally the Birmingham sewerage catchment has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. Most of this development area drains to Minworth sewage treatment works but part of the southern area may drain to Alvechurch STW.	Severn Trent

Site Ref	Location	2015-2031 Housing (units)	2015-2031 Employment (Jobs)	2015-2031 Employment floor area (sqm)	Severn Trent comments regarding potential impact of the growth areas.	Water Supplier

Black Country

Site Ref	Location	2015-2031 Housing (units)	2015-2031 Employment (Jobs)	2015-2031 Employment floor area (sqm)	Severn Trent comments regarding potential impact of the growth areas.	Water Supplier
BC1	Corridor 1: Pendeford/ Fordhouses	-	2,893	43,396	Generally the sewerage catchment in this area has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that additional employment development in this area will result in sewer capacity issues (subject to not being water intensive usage). However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. This area drains to Coven Heath STW.	Severn Trent
BC2	Corridor 2: Stafford Road	662	3,182	47,735	Provided surface water from existing impermeable areas is managed sustainably and where possible discharges to the foul/combined sewerage system is reduces, it is not envisaged that development across the city centre will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. This area drains to Barnhurst STW.	Severn Trent
BC3	Corridor 3: South of Wolverhampton Strategic Centre	431	-	-	Provided surface water from existing impermeable areas is managed sustainably and where possible discharges to the foul/combined sewerage system is reduces, it is not envisaged that development across the city centre will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. This area drains to Barnhurst STW.	Severn Trent
BC4	Corridor 4: Wolverhampton - Bilston	2,632	4,050	60,754	Generally the sewerage catchment serving the south Wolverhampton/Bilston area has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. This site drains to Minworth STW.	Severn Trent
BC5	Corridor 5: Loxdale – Moxley	553	289	4,340	Generally the sewerage catchment serving the north west Tipton area has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. This area drains to Minworth STW.	Severn Trent

BC6	Corridor 6: Wednesfield - Willenhall - Darlaston	1,866	16,780	251,695	Generally the sewerage catchment serving the Willenhall area has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. This area drains to Willenhall STW.	Severn Trent
BC7	Corridor 7: Bloxwich - Birchills - Bescot	2,105	4,050	117,711	Generally the sewerage catchment serving the Bloxwich area has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. This area drains to Minworth STW.	South Staffs Water
BC8	Corridor 8: Hill Top	3,727	4,629	69,433	Generally the sewerage catchment serving the Tipton area has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. This area drains to Rayhall and Minworth STWs.	South Staffs Water
BC9	Corridor 9: Tipton - Dudley Port - Brades Village	4,950	2,604	39,056	Generally the sewerage catchment serving the Black Country area has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. This site drains to Roundhill STW.	South Staffs Water
BC10	Corridor 10: Pensnett - Kingswinford	552	1,447	21,698	Generally the sewerage catchment serving the Kingswinford area has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. This site drains to Roundhill STW.	South Staffs Water
BC11	Corridor 11a: Dudley - Brierley Hill - Stourbridge and Corridor and 11b: Brierley Hill - Stourbridge	3,561	3,761	56,414	Generally the sewerage catchment serving the Dudley area has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. This area drains to Roundhill Rayhall and Lower Gornall STWs.	South Staffs Water
BC12	Corridor 12: Oldbury - West Bromwich - Smethwick	3,381	9,836	147,546	Generally the sewerage catchment serving the southern West Bromwich area has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. This area drains to Rayhall STW.	South Staffs Water

BC13	Corridor 13: Rowley Regis - Jewellery Line	4,083	-	-	Generally the sewerage catchment serving the Black Country area has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. This site drains to Roundhill STW.	Partly Severn Trent. The eastern section of this area is served by South Staffs Water
BC14	Corridor 14: Coombs Wood - Halesowen	446	289	4,340	Generally the sewerage catchment serving the Black Country area has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. This site drains to Roundhill STW.	South Staffs Water
BC15	Corridor 15: Brownhills	390	1,447	21,698	This area is served by Walsall Wood sewage treatment works to the north east. There is reasonable levels of capacity across the current sewerage catchment but detailed capacity assessments will be required once specific development proposals are available to identify any potential localised capacity constraints which may need to be addressed to accommodate additional development.	South Staffs Water
BC16	Corridor 16: Coseley - Tipton - Princes End	2,450	-	-	Generally the sewerage catchment serving the west of Tipton area has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. This site drains to Rayhall STW.	South Staffs Water
BC17	Brierley Hill	4,105	27,152	458,182	Generally the sewerage catchment serving the Black Country area has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. This site drains to Roundhill STW.	South Staffs Water
BC18	Walsall	1,457	26,539	443,636	Generally the sewerage catchment serving the Walsall area has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. This area drains to Minworth STW.	South Staffs Water

BC19	West Bromwich	511	25,314	414,545	Generally the sewerage catchment serving the West Bromwich area has reasonable performance and so provided surface water from new development is managed sustainably and not discharged to the foul/combined sewerage system, it is not envisaged that development across the wider urban area will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. This area drains to Rayhall STW.	South Staffs Water
BC20	Wolverhampton	2,271	26,988	458,412	Provided surface water from existing impermeable areas is managed sustainably and where possible discharges to the foul/combined sewerage system is reduces, it is not envisaged that development across the city centre will result in sewer capacity issues. However, as will all development, further detailed capacity assessments will be required once specific development proposals are available. This area drains to Barnhurst STW.	Severn Trent

APPENDIX G ELECTRICITY CAPACITY

Coventry

Coventry - Growth

Title of growth area	City Centre
Authority	Coventry
Housing Growth: Estimated Electricity Demand - Peak (kW)	7,500
Jobs Growth: Estimated Electricity Demand - Peak (kW)	28,526
Title of growth area	Urban Growth
Authority	Coventry
Housing Growth: Estimated Electricity Demand - Peak (kW)	19,500
Jobs Growth: Estimated Electricity Demand - Peak (kW)	8,600
Title of growth area	North Western Periphery
Authority	Coventry
Housing Growth: Estimated Electricity Demand - Peak (kW)	9,750
Jobs Growth: Estimated Electricity Demand - Peak (kW)	21,586
Title of growth area	North Eastern Periphery
Authority	Coventry
Housing Growth: Estimated Electricity Demand - Peak (kW)	6,000
Jobs Growth: Estimated Electricity Demand - Peak (kW)	53,354
Title of growth area	Southern Periphery
Authority	Coventry
Housing Growth: Estimated Electricity Demand - Peak (kW)	7,500
Jobs Growth: Estimated Electricity Demand - Peak (kW)	49,433

Solihull - Growth

Title of growth area	Chelmsey Wood
Authority	Solihull
Housing Growth: Estimated Electricity Demand - Peak (kW)	1,185
Jobs Growth: Estimated Electricity Demand - Peak (kW)	
Title of growth area	Airport, UK Central and JLR
Authority	Solihull
Housing Growth: Estimated Electricity Demand - Peak (kW)	1,950
Jobs Growth: Estimated Electricity Demand - Peak (kW)	16,797
Title of growth area	Shirley and Solihull
Authority	Solihull
Housing Growth: Estimated Electricity Demand - Peak (kW)	2,145
Jobs Growth: Estimated Electricity Demand - Peak (kW)	13,316
Title of growth area	Dickens Heath and Blythe Valley Park and Knowle and Dorridge
Authority	Solihull
Housing Growth: Estimated Electricity Demand - Peak (kW)	
Jobs Growth: Estimated Electricity Demand - Peak (kW)	
Title of growth area	Dickens Heath and Blythe Valley Park
Authority	Solihull
Housing Growth: Electricity Demand	Load for housing likely OK
Jobs Growth: Electricity Demand	Network reinforcement
Title of growth area	Knowle and Dorridge
Authority	Solihull
Housing Growth: Electricity Demand	Load likely OK

Birmingham - Growth

Title of growth area	City Centre
Authority	Birmingham
Housing Growth: Estimated Electricity Demand - Peak (kW)	19,200
Jobs Growth: Estimated Electricity Demand - Peak (kW)	89,758
Title of growth area	Greater Icknield
Authority	Birmingham
Housing Growth: Estimated Electricity Demand - Peak (kW)	4,263
Jobs Growth: Estimated Electricity Demand - Peak (kW)	1,961
Title of growth area	Aston, Newtown & Lozells AAP
Authority	Birmingham
Housing Growth: Estimated Electricity Demand - Peak (kW)	1,179
Jobs Growth: Estimated Electricity Demand - Peak (kW)	4,070
Title of growth area	Sutton Coldfield
Authority	Birmingham
Housing Growth: Estimated Electricity Demand - Peak (kW)	675
Jobs Growth: Estimated Electricity Demand - Peak (kW)	6,650
Title of growth area	Langley Sustainable Urban Extension
Authority	Birmingham
Housing Growth: Estimated Electricity Demand - Peak (kW)	7,500
Jobs Growth: Estimated Electricity Demand - Peak (kW)	77
Title of growth area	Peddimore
Authority	Birmingham
Housing Growth: Estimated Electricity Demand - Peak (kW)	
Jobs Growth: Estimated Electricity Demand - Peak (kW)	17,189
Title of growth area	Bordesley Park AAP
Authority	Birmingham
Housing Growth: Estimated Electricity Demand - Peak (kW)	1,125
Jobs Growth: Estimated Electricity Demand - Peak (kW)	11,920
Title of growth area	Eastern Triangle
Authority	Birmingham
Housing Growth: Estimated Electricity Demand - Peak (kW)	1,500
Jobs Growth: Estimated Electricity Demand - Peak (kW)	5,811
Title of growth area	Selly Oak and South Edgbaston
Authority	Birmingham
Housing Growth: Estimated Electricity Demand - Peak (kW)	1,050
Jobs Growth: Estimated Electricity Demand - Peak (kW)	4,870
Title of growth area	Longbridge AAP
Authority	Birmingham
Housing Growth: Estimated Electricity Demand - Peak (kW)	2,175
Jobs Growth: Estimated Electricity Demand - Peak (kW)	19,716

Black Country

The response for the Black Country area remains outstanding at the time of this report.