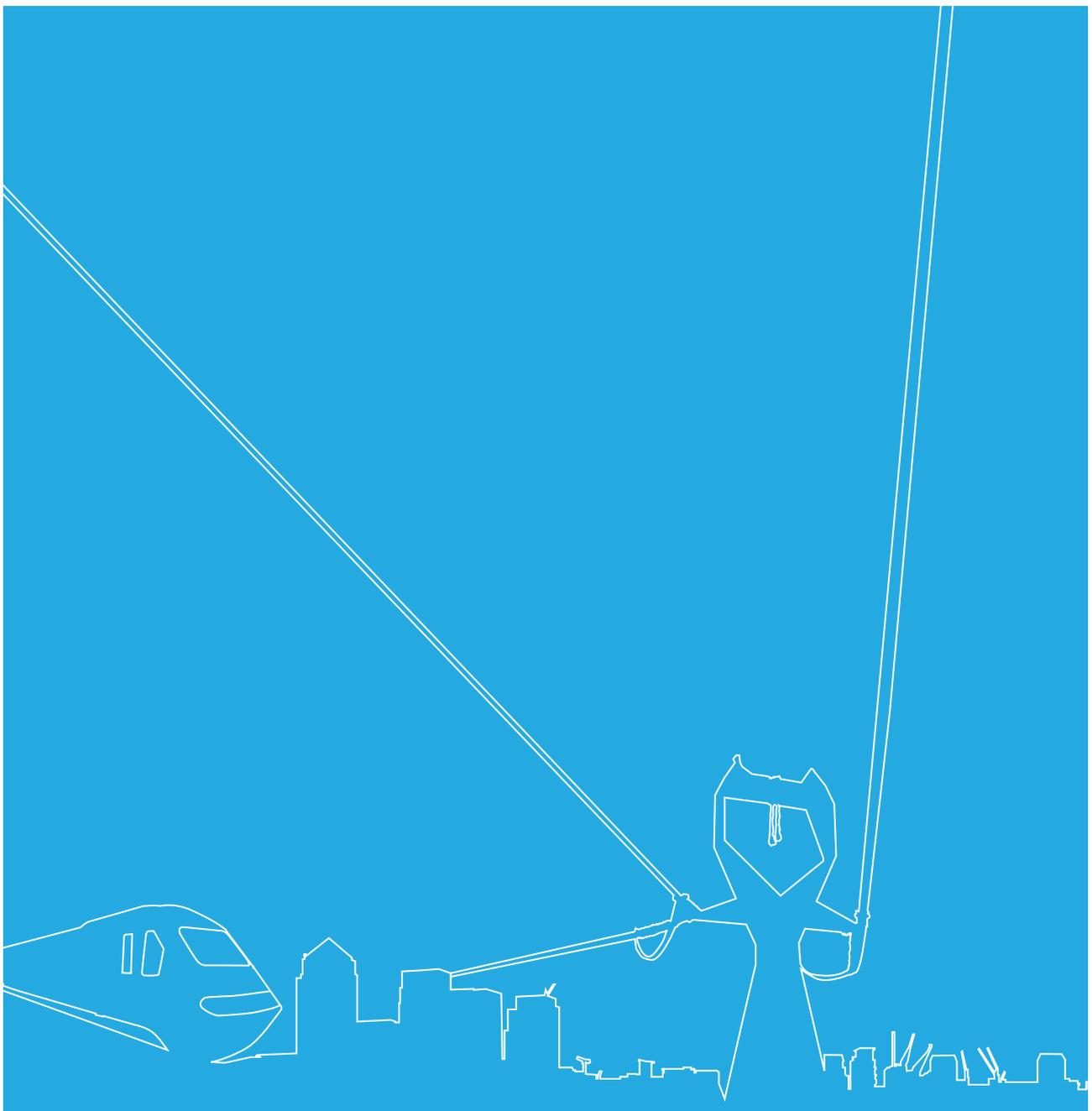


JCS Infrastructure Delivery Plan Executive Summary



Gloucester City Council,
Cheltenham Borough Council &
Tewkesbury Borough Council
Infrastructure Delivery Plan
Executive Summary Report

Issue | 23 June 2014

Contents

	Page
Executive Summary	1
IDP Development Scenarios	2
Report Structure	4
Infrastructure Requirements	4
Cross Boundary Infrastructure	5
Sector Analysis	5
Implementation	14
Categorisation	15
Funding	17
Management & Co-ordination	17
Recommendations & Next Steps	18

Tables

Table 1 IDP Preparation Stages
Table 2 Residential Development Allocation by JCS Sub-Area
Table 3 Employment Allocation by JCS Sub-Area
Table 4 Education Requirements
Table 5 STW Waste Water Comments
Table 6 Cost Summary & Prioritisation

Executive Summary

Ove Arup and Partners was commissioned to produce an Infrastructure Delivery Plan (IDP) for the Joint Core Strategy (JCS) area, consisting of Gloucester City Council, Cheltenham Borough Council and Tewkesbury Borough Council. The purpose of the IDP is to evaluate the transport, utilities, community and green infrastructure and services that will be required to support the levels of housing and employment growth proposed in the Joint Core Strategy.

The IDP has been prepared in part on the basis of the information received from various service providers as part of the consultation process, and on the understanding that the JCS was planning for some 33,200 new homes. This was the position of the draft JCS produced in October 2013.

The report has been prepared with the following caveats:

- The cost and specification information received for individual infrastructure schemes has not been audited or tested for accuracy. It has not always been possible to ascertain whether some of the infrastructure projects identified have confirmed or guaranteed funding to deliver them;
- The IDP is a high level assessment of infrastructure need which is based on the information received and benchmark indices. This provides an assessment which is based partly on theoretical costings and estimates and which should be further defined as information becomes available;
- Where we have not received an accurate or satisfactory level of actual project information from infrastructure providers, costs and project specifications have been benchmarked and estimated using industry standards and comparable project information from other parts of the UK and/or previous infrastructure projects designed and implemented by Arup;
- We accept that there may be cases where the cost of delivering infrastructure items (for example, some social and community infrastructure) could be reduced by collocating different services together. No allowance has been made at this stage of the potential to collocate and therefore reduce the cost of delivering individual services in multifunctional buildings across the JCS area. This would require further discussions with service providers;
- Infrastructure delivery planning is a live process and it is expected that the figures in this report will change over time. Further work, including infrastructure modelling and on-going consultation with service providers and developers, will be required to refine an understanding of infrastructure requirements, funding and delivery mechanisms. A detailed project tracker which accompanies this report will need to be maintained and updated over years to come to provide the most up to date and accurate picture of the overall funding and delivery picture for infrastructure across the JCS as a whole;
- This IDP has been prepared on the basis of 33,200 new homes being built (situation as of October 2013). With a lower OAN of 30,500 homes, it is likely therefore that the total need and costs of infrastructure associated with population growth will be lower than those shown in this report; and

- The project tracker attached to this IDP identifies the projects which have emerged during the preparation of the document. There are likely to be other projects that may come on stream which have not been identified and for this reason, the project tracker forms a live document which will continue to be updated over the plan period up to 2031.

The next stage of infrastructure planning within the JCS area will involve the JCS authorities continuing to work collaboratively with key service providers in order to make decisions around prioritisation of projects. Further work on the Community Infrastructure Levy (CIL) will aid this prioritisation process and the IDP tracker will form an important tool in identifying, developing and prioritising projects across the JCS area.

IDP Development Scenarios

The IDP has been through two revisions with a Stage 1 Interim Version IDP published in October 2013, accompanied by an Overview Paper and a refresh of the document undertaken during February 2014 with a Stage 2 Interim Version IDP published in May 2014. This document provides an Executive Summary in support of this Stage 2 IDP and the process of preparation is summarised in Table 1 below.

Table 1 IDP Preparation Stages

JCS milestones	IDP stage	Date
-	Preparation of Stage 1 Interim Version IDP in consultation with stakeholders	Mar to Sep 2013
Draft JCS	Stage 1 Interim Version IDP published as evidence base	Oct to Nov 2013
-	Refresh of IDP undertaken in consultation with stakeholders	Dec to Mar 2014
Pre-Submission JCS	Stage 2 Interim Version IDP and Final IDP and/or paper setting out final clarifications on infrastructure matters	June 2014

Housing Growth

The JCS covers a period up to 2031. Over this period the draft JCS (October 2013) proposes total housing provision of 33,200 new dwellings, including eight strategic allocations. In relation to employment land, the JCS proposes approximately 84.2 hectares (64.2 hectares net) of allocations in order to accommodate 21,800 net new jobs.

Tables 2 and 3 present the proposed residential and employment allocations based on the October 2013 housing provision by JCS sub-area, as agreed by the JCS authorities for inclusion in the IDP Refresh process.

Table 2 Residential Development Allocation by JCS Sub-Area

JCS Sub-area	New Dwellings
Gloucester North	8,927
Gloucester South	2,250

JCS Sub-area	New Dwellings
Cheltenham South & West	3,131
Cheltenham North	7,166
Tewkesbury & Ashchurch	2,637
Allocations Sub-total	23,193
Committed Development	10,007
Total JCS New Housing	33,200

Table 3 Employment Allocation by JCS Sub-Area

JCS Sub-Area	Retail (sqm)	'B' Use Classes (Ha)
Gloucester North	89,000	26.50
Gloucester South	-	-
Cheltenham South & West	-	-
Cheltenham North	111,000	23.40
Tewkesbury & Ashchurch	10,642	34.30
Total JCS New Employment	210,642	84.20

Population Growth

In considering infrastructure requirements it is necessary to consider the population growth associated with the forecast housing requirements. This demographic information has a further important role to play during the interpretation of infrastructure requirements. For instance, population growth that shows a proportionate increase in the number of elderly would be expected to result in fewer schools admissions, but potentially greater demand for healthcare services.

The IDP utilised two scenarios in terms of population growth including:

- **Scenario 1** – utilised ONS population projections and is considered to provide the basis for a more representative assessment of demand for infrastructure at a district-wide level.
- **Scenario 2** – assumes that the population for each development equates to the number of new dwellings multiplied by the projected household size in 2021 of 2.18. At the district-wide level this method of calculation results in a high total population figure which is considered unrealistic and therefore has been discounted. However, for specific developments Scenario 2 is helpful in establishing a potential increase in demand for local infrastructure within a specific town or village. For instance, a new housing development comprised mainly of family housing would result in a higher demand for certain types of community infrastructure than that reflected by calculations based on Scenario 1.

Benchmark standards have been applied to both scenarios across two phases, the first being 2014-2018 and the second reflecting the whole plan period (2014-2031). This allows for a more immediate infrastructure requirement to be illustrated. These standards are developed in order to forecast demand for various pieces of infrastructure in line with projected housing growth. For example, a

child yield is used in order to estimate the number of primary, secondary and further education places generated by projected growth. These benchmarks therefore enable forecasts to be made for infrastructure planning purposes.

Report Structure

The main element of this report explores the infrastructure requirements for the JCS area under the following sectors:

- Community & Cultural;
- Education;
- Emergency Services;
- Energy;
- Healthcare;
- Flood Water & Waste Water;
- Recreation, Sports & Open Space;
- Information & Communications Technology;
- Transport & Public Realm; and
- Waste.

Following a review of the infrastructure requirements within each of these broad sectors, the report explores existing or confirmed funding sources and provides some broad recommendations on delivery of infrastructure which is critical to growth across the JCS area.

Infrastructure Requirements

Delivering infrastructure of importance to support new development and achieving the Vision for the JCS area will rely upon a wide range of public, private and community sector organisations working together effectively and efficiently. The JCS authorities have an important leadership role to play in this process and as the JCS progresses towards examination and adoption, the IDP will need to be refined to ensure that infrastructure requirements and the current position with project specifications, consents and funding commitment are as up to date as possible.

It is strongly recommended that the JCS authorities commit to infrastructure delivery planning as an iterative process and adequately resource their role as the bodies responsible for delivering some projects and enabling/ encouraging others to deliver other projects as part of the overall process. This IDP is the starting point for an on-going process and regular updates of the project information underlying the IDP will be required. This summary is therefore accompanied by a project tracker which details projects that have emerged through the development of the IDP. This tracker will form an important tool for the JCS authorities as infrastructure is planned and implemented and/or as new projects or requirements emerge.

For a number of sectors reviewed, we have undertaken cost assessment using accepted benchmark standards, providing a high level view of infrastructure requirements based on population forecasts. As JCS specific projects and

proposals develop, further work will be required to fully test options for delivery, refining project details, costs and timescales over time.

In order to assist in the prioritisation of identified infrastructure, projects have been identified and assigned to one of the following four broad categories:

- *Regionally Critical Infrastructure* – Projects that have wider geographic area implications than the JCS which must happen to enable the delivery of growth within the JCS and beyond (i.e. critical to the JCS functioning as a whole with the potential also for the mitigation of cross boundary needs and effects).
- *Critical Infrastructure* – Projects that the study has identified which must happen to enable the delivery of growth within the JCS.
- *Essential Infrastructure* – Projects that are required if growth is to be achieved in a timely and sustainable manner.
- *Desirable Infrastructure* – Projects that are required for sustainable growth but is unlikely to prevent development in the short to medium term.

Section 2.1 therefore presents infrastructure requirements and costs for the broad sectors and considers phasing of infrastructure across the JCS area. This section of the report should be read alongside the associated Project Tracker in order to understand specific infrastructure projects.

Cross Boundary Infrastructure

Through the process of preparing the IDP, a number of projects have been identified that are considered to be critical or essential to an area which is county-wide and beyond. This infrastructure largely relates to projects on infrastructure networks (e.g. transport) and where catchments exist (e.g. schools and secondary healthcare) that extend beyond the JCS boundary. In many cases, transport projects help to strengthen the network as a whole, and it is therefore difficult to determine that such projects serve only a site specific or local purpose.

Some cross boundary projects have therefore been identified below and are highlighted within the accompanying project tracker. In identifying these projects, it does not necessarily imply that funding will be derived from development within Gloucester, Cheltenham or Tewkesbury.

Sector Analysis

Community & Cultural

It is estimated that in total community & cultural facilities could cost in the region of **£26.4 million** over the plan period to 2031.

Libraries

Provision of new libraries within the JCS area is estimated to cost approximately **£6.7 million**. This doesn't account for any co-location of services (e.g. council services and libraries) which may reduce the capital cost.

Taking account of the County Council's Strategy for library services, it is anticipated that the additional demand for services (and related funding) could be

channelled towards maintaining and enhancing the existing library network, including the Virtual Library, and providing services for more vulnerable groups such as the elderly. This approach could lead to a lower capital cost requirement.

Community Centres

The provision of new community centres within the JCS area is estimated to cost in the region of **£14.1 million**.

Taking a pragmatic view, financing the modernisation and maintenance of existing community centres is a challenge for the third sector organisations that manage these facilities in many cases. The JCS authorities seek to provide support, including funding where possible, to these organisations. For this reason, and depending on the scale and location of new development, in some cases finance may be directed towards supporting and enhancing existing facilities through maintenance, refurbishment and revenue payments, rather than provision of new halls. Provision of new halls will more than likely be focussed around strategic developments that include such facilities as part of any overall Masterplan.

It is likely that a number of the strategic allocations will generate demand for community centres and therefore delivery of this infrastructure may be achievable via S106. Indeed, commitments are already in place alongside consent on certain strategic allocations for the provision of community facilities (e.g. Hunt's Grove).

Youth Support Services

Assuming youth support services for an 8 year period (2014-2022), a cost of **£5.6 million** has been estimated. This estimate is based on an expectation that costs relating to new development would apply for an 8 year period with the potential for annual review.

Alongside the cost of providing youth services, new development also offers wider opportunities relating to the provision of training, apprenticeships and employment during the construction of new schemes. This will help address youth unemployment issues and local planning authorities are therefore urged to consider the agreement and implementation of Employment and Skills Charters working with developers, to help facilitate the creation of employment opportunities within the construction sector.

Education

The requirements identified across the JCS area are summarised in below. The theoretical demand identified has been taken from a submission to the JCS IDP engagement process by Gloucestershire County Council during May 2014.

Table 4 Education Requirements

	Theoretical Demand	Cost Provision (£m)
Early Years (2,3 & 4 years)	1039	£12.2
Primary Education	3680	£43
Secondary Education (11-16)	1752	£31.3

	Theoretical Demand	Cost Provision (£m)
Secondary Education (Sixth Form)	256	
Further Education (Post 16)	193	£2.8
		£89.3

These figures represent a **maximum** required provision, using child yield ratios and applying these to the development trajectory. The scenario therefore does not consider opportunities presented through reconfiguration of existing facilities.

In summary, the theoretical demand could lead to the following requirements:

- **Early Years** – up to 10 additional (50-place) Early Years Settings alongside expansion within the existing marketplace;
- **Primary** – 9 (1-form entry) primary schools or 3 (2-form entry) and 3 (1-form entry) primary schools alongside expansion of existing schools; and
- **Secondary** – 1 new secondary school alongside local expansion.

Where possible, consideration should be given to the provision of more comprehensive educational facilities that incorporate an element of all three of the above. This could be particularly relevant where strategic allocations lead to sufficient theoretical demand for such a new facility.

Emergency Services

The IDP estimates that new emergency services provision could cost in the region of **£21.6 million**. This relates entirely to police service infrastructure.

Ambulance

Responses received from South Western Ambulance Service NHS Foundation Trust (SWASFT) suggest that a number of growth areas could be covered by existing resources. The service did identify a need for a new standby point to serve developments at Up Hatherley, North Brockworth and Ashchurch MOD with requirements for public access defibrillators to serve North West Cheltenham and Innsworth and Twigworth.

Where possible SWASFT would like to explore opportunities for co-location of standby points (e.g. at new healthcare facilities) and it has therefore been assumed that such co-location can be arranged, minimising capital costs for this infrastructure.

Fire & Rescue

Gloucestershire Fire and Rescue Service reviewed their services in 2005 and embarked on the creation of four new community fire stations, which were completed in 2012. The location of existing and new fire stations has been carefully considered and together they provide an emergency response to any incident in the County. No further major infrastructure is expected to be required in response to the Joint Core Strategy proposals, although the JCS authorities will seek to confirm this through further consultation with the Fire and Rescue Service.

Police Services

Gloucestershire Constabulary will be seeking developer contributions over the plan period in order to assist funding for the following key projects:

- a new Central Custody Suite at Quedgeley costing around £11.9 million;
- a new police station in Cheltenham costing around £2.7 million;
- a new police station in Gloucester costing around £4 million;
- refurbishment of facilities at Barton Street, Gloucester (Estimate £500,000);
- a potential new station at Highnam costing in the region of £1.4 million; and
- requirement for 50 new police officer posts and 103 staff posts costing in the region of £1.1 million.

It is understood that the police will seek contributions towards these projects. At the time of writing this IDP no commitment had been made by the JCS authorities towards this infrastructure.

Energy (Utilities)

The primary concern of the IDP in relation to energy is to understand whether there are any engineering or other obstacles that would prevent or delay the connection of development sites to the electricity and gas grid/network, resulting in implications for site delivery or phasing.

Electricity

Western Power Distribution (WPD), the local distribution network operator provided a summary of potential requirements at each of the growth areas or strategic allocations. These can be summarised as follows:

- West Cheltenham – Likely to necessitate some 11kV reinforcement works;
- North West Cheltenham - The development will almost certainly necessitate 11kV circuit reinforcement works;
- South West & Central Cheltenham including Leckhampton & Up Hatherly - The proposed developments will probably necessitate some 11kV circuit reinforcement works;
- Gloucester South West - Provision has been made to install an additional primary substation at Hardwicke, but progression of this scheme depends on load growth in the area. The proposed developments will probably necessitate some 11kV circuit reinforcement works;

WPD further commented that on the majority of other sites 11kV circuit studies will be required to identify if reinforcement work is required.

In relation to such works WPD advise that the installation of 11kV circuits from primary substations are not normally significant as the majority of circuits are installed in the public highway. Typically 3km of cable could be installed within 2-3 months, depending on the route and any engineering difficulties.

Arup estimate that the total cost for electricity infrastructure upgrades could be in the region of **£2.7 million**. This figure has been derived by applying a rate of £1

million per 1,000 homes with optimum bias applied. The JCS authorities should confirm this with WPD as plans emerge and 11kV circuit studies are undertaken in order to confirm reinforcement works required.

Gas

Wales and West Utilities (WWU) were unable to provide an estimate of infrastructure cost for gas infrastructure due to insufficient details. WWU require relatively detailed information on development sites before they can provide formal feedback on network capacities and constraints. This should include the size and shape of sites, number of units and indicative layout and phasing.

The JCS authorities should continue to work with WWU and update them as proposals for sites emerge in order that the IDP and associated Tracker can be updated.

Healthcare

The IDP estimates that the total capital cost of providing the necessary healthcare facilities to accommodate growth could be in the region of **£23.8 million**.

Primary healthcare requirements are estimated to be an additional 32 General Practitioners at a cost of approximately **£9.7 million** and 29 dentists at a cost of approximately **£5.3 million**.

On the larger strategic development sites demand could be sufficient to see a new GP surgery and/or dentist to serve the new development. For example North West Cheltenham could lead to a demand for 4-5 GPs and dentists and therefore opportunities exist to co-locate practices, reducing capital costs and providing a primary care hub for the community.

In relation to secondary healthcare, the forecast population growth is estimated to lead to demand for an addition 104 acute care bedspaces with an estimated capital cost of **£8.8 million**. In working with the NHS in developing their strategy further consideration should be given to the fact that not all this demand will necessarily be provided for within the JCS area, along with the fact that some demand will prefer privately funded healthcare.

Flood Management, Water Supply & Waste Water

Flood Management

Proposed strategic allocations within the JCS have been informed by Strategic Flood Risk Assessments (SFRA Levels 1 and 2). Developable areas within the strategic allocations are located in areas at low risk of flooding (e.g. Flood Zone 1). The more constrained strategic locations in terms of flood risk have been identified as:

- Innsworth, to the north of Gloucester; and
- The part of the South Churchdown strategic location located to the north of the A40.

Nevertheless, it is still expected to be possible to achieve significant numbers of dwellings within these large sites, based on more detailed flood risk assessment and design work.

Some existing areas of flood risk within the JCS area are to be targeted through projects identified in the Draft Gloucestershire Flood Risk Management Strategy. Eight flood risk management projects within the JCS area are identified as Initial Priority Locations for investment. In some cases there may be potential for joined-up investment in packages of flood risk management measures that benefit both strategic locations for development and existing properties.

Flood management projects that have emerged from the IDP have an estimated worst case capital cost of in the region **£8.3 million** and include:

- Cheltenham (Sub-Areas C2 & C16) – Mitigation scheme currently being developed with estimated cost of £1 to £2 million;
- Tewkesbury (Sub-Areas C & H) – Surface Water Management Plan (SWMP) has identified a range of measures including diversion, storage and property protection with an estimated cost of £1 to £2 million;
- Gloucester (Sub-Areas GW, GC & GNE) – SWMP on-going. Mitigation measures likely to be in the region or less than £1 million;
- Gloucester (Sub-Areas GWS & GSC) – SWMP identifies mitigation measures with an estimated cost of £1 million;
- Tewkesbury Town & Rural Areas (A & B) – Small scale mitigation measures in Northway CP with an estimated cost of £250,000. Mitigation measures along Ashchurch Road and Coventry Close with an estimated cost of under £2 million.

There are a range of funding routes that could be explored to deliver flood management infrastructure. Limited information has been received to date in relation to secured funding. It is likely that some works will be undertaken by the developer as part of contributions in order to demonstrate flood management on site.

Water Supply

The JCS area is located within Severn Trent Water's (STW) "Strategic Grid" water resource zone. The Draft Water Resource Plan advises that the Strategic Grid Zone is likely to require significant future investment because of the need to reduce environmentally unsustainable abstractions and to meet the longer term challenge of future climate change impacts. STW set out a number of priorities to respond to these challenges, however, these schemes are geographically spread and do not necessarily fall within the JCS area.

Severn Trent Water concludes that the supply and demand investment measures identified gives them high confidence that they can meet demand for water over the next 25 years. The cost of these requirements will be picked up directly through charges to existing and new consumers via their water bills.

Waste Water

STW provided the following comments relative to the main sewerage treatment works (STWs) serving the Sub-Areas.

Table 5 STW Waste Water Comments

Sub-Areas	STW	Comments
CA2 (North), CA4 (South West) North West Cheltenham, South Cheltenham	Hayden STW	Comparisons indicate there is reasonable spare capacity at these treatment works. Should additional treatment capacity be required in order to accommodate future development above the existing capacity then STW do not envisage any issues as there are no land or other physical constraints preventing expansion.
B Ashchurch/MOD	Tewkesbury STW	
E & F North Brockworth North Churchdown South Churchdown	Netheridge STW	
F Innsworth and Twigworth	Innsworth STW	Innsworth STW closed and the environmental permit was surrendered with effect of 30 June 2012. STW have confirmed that flows from Innsworth will be conveyed to Netheridge STW do not anticipate any significant capacity implications.

STW would expect the funding for any site connections and necessary upgrades to the local water supply and wastewater networks for each settlement to come from site developers. On-going maintenance of the water and wastewater networks, including any strategic water resource projects (such as new reservoirs), are funded by ratepayers.

Recreation, Sports & Open Space

Using benchmark standards, the IDP estimates that the total cost of providing the necessary recreation, sports and open space could be in the region of **£130 million**. This capital costs will cover the following facilities:

- Indoor sports facilities (e.g. swimming pools and sports halls);
- Outdoor playing pitches;
- Open space;
- Children’s play space; and
- Accessible natural greenspace.

While the IDP has not undertaken a full audit of existing sports facilities and playing pitches, an overview of current facilities (excluding privately managed facilities) has been provided, along with an assessment of future demand using the Sport England Sports Facility Calculator (SFC).

The IDP estimates demand for an additional 3 swimming pools and 4 sports halls across the plan period, with an estimated capital cost of **£20 million**.

In some cases, an alternative approach to the provision of new facilities would be to facilitate improvements to existing leisure and community centres, and

improving hours of access, across the JCS area. For instance, the Cheltenham Leisure Facilities Strategy advocates further investment in the Central Sports Hub and Tewkesbury Borough Council are in the process of considering options for the replacement of the Cascades Swimming Pool & Health Suite.

In relation to playing pitches and open space, the IDP uses a combination of the Fields in Trust (FIT) Benchmark Standards and Natural England Accessible Natural Greenspace Standards (ANGSt).

The IDP estimates demand for approximately 70ha of playing pitches and 82ha of space for other outdoor sports with a capital cost of approximately **£6.8 million** and **£81.4 million** respectively.

In relation to open space, the IDP estimates a demand for 32ha at a cost of **£546,000** with play space demand estimated at 14.6ha, costing approximately **£7.2 million**. The IDP has assumed that the majority of localised open space requirements and some children's play space will be delivered as part of development proposals and funded directly by developers

Finally, the IDP estimates a demand for 58.4ha of accessible natural greenspace with an estimated capital cost of **£14 million**.

Information & Communications Technology

The provision of ICT infrastructure may not be a key factor in determining the soundness of the Joint Core Strategy, but will have implications for the economic competitiveness of the JCS area and the ability of households to access the online services of other infrastructure and service providers (e.g. library services, healthcare and education).

BT is currently upgrading their broadband infrastructure in Gloucestershire and exchanges within the main urban areas of Cheltenham, Gloucester and Tewkesbury have already been upgraded, along with Barnwood to the East of Gloucester and Quedgeley to the South of Gloucester. The more rural locations are due to be upgraded with a date currently unknown.

Alongside this the Borders Broadband project covering Herefordshire and Gloucestershire is one of four initial pilots that have been set up, which secured £14.4 million from the Government towards rolling out fibre broadband in rural areas. This has been boosted with a further £7.5 million investment by Gloucestershire County Council and £6 million from Herefordshire County Council. The two county councils have now formed a non-profit making collaboration with BT Openreach called 'Fastershire', which has the aim of bringing fibre broadband to around 90% homes by the end of 2016.

Transport & Public Realm

The total estimated cost of transport infrastructure across the JCS could be in the region of **£512 million**. It should be noted however that approximately half of this relates to the A417, the Missing Link, which is outside the JCS area, although its construction would have an impact on the JCS.

In order to explore the effects of growth trajectories on the highway network, this report utilises findings from a transport model produced by Atkins Highways and Transport. The model shows that in the absence of the transport mitigation

schemes the 2031 the transport network in JCS area is very busy and vehicle delay increases significantly at pinch points within the network. Those junctions identified at operating at or near capacity before any mitigation measures were tested include:

- M5 Junction 11
- A38 Southern Ave / Stroud Rd Roundabout (St Barnabas)
- A40 Northern Bypass / A38 Tewkesbury Rd
- A40 Over Roundabout
- A40 Elmbridge Roundabout
- A40 Benhall Roundabout
- A46 widening between Northway Lane and M5 Junction 9
- A417 Air Balloon Roundabout
- A435 Evesham Rd / Hyde Lane – Newlands Cross
- B4063 / B4634 Old Gloucester Rd
- Staverton Crossroads

The transport model presents a number of mitigation schemes in terms of highway improvements as detailed within the associated Project Tracker. Some of these schemes are considered to be regionally critical and therefore extend benefits wider than the JCS area. Other schemes are considered to be critical to a smaller geographic area and in some cases delivery of a site specifically. The projects identified as regionally critical in the Project Tracker should seek funding from development taking place along its route and not just JCS authorities.

Alongside highways related schemes, the IDP also identifies a number of rail, bus, walking and cycling projects which are considered as part of the project tracker.

Strategic public transport projects within the JCS area include:

- *Cheltenham Spa Station Remodelling* – providing additional track and platform capacity and new customer facilities, such as bus interchange, car parking, bicycle storage and station amenities;
- *Elmbridge Transport Scheme* – new Park & Ride facility and associated capacity and safety improvements;
- *A40 Bus Lane, Benhall* – reducing delays and improving bus journey times; and
- *A40 Bus Corridor improvements, Cheltenham* - The scheme is designed to improve journey times and reliability for buses on the A40/B4063 between Gloucester and Cheltenham, particularly between the Arle Court and Benhall Roundabouts.

Alongside these schemes there is a general desire to implement Smart Card Ticketing and Real Time Passenger Information (RTPI) along strategic routes.

Residents in the JCS area could also benefit from improved public transport provision if a new station is built at Hunt's Grove over the Gloucester City Council boundary in Stroud.

Waste

In order to meet the projected demand for waste management, the Waste Core Strategy identifies the following locations with the potential to accommodate re-modelled, alternative and / or new waste management facilities over the timeframe of the plan. Three of these strategic sites, Wingmoor Farm East, The Park and Wingmoor Farm West, are located in the JCS area and specifically, Tewkesbury:

Wingmoor Farm East - This 2.8 hectare site is located to the west of Bishop's Cleeve, five miles north of Cheltenham on the Stoke Road leading from the A435 to Stoke Orchard. It forms part of the Wingmoor Farm (East) landfill, recycling and quarry complex. The site is not currently in active use and its availability for a strategic waste recovery facility has been confirmed by the site operator Grundon Waste Management.

The Park - This 6.8 hectare site, often referred to as 'The Park' is located two miles west of Bishop's Cleeve and five miles north of Cheltenham, off Stoke Road, south of Stoke Orchard. It adjoins Wingmoor Farm West which is also allocated. The site comprises a number of former aeroplane hangars converted to industrial units including waste management processes and other, as yet unimplemented waste management planning permissions. The site is owned by Wellington Park Properties Ltd.

Wingmoor Farm West (Sites A&B) - This 4.0 hectare site is located two miles west of Bishops Cleeve and five miles north of Cheltenham, off Stoke Road, south of Stoke Orchard. It adjoins 'The Park' (see above). The site includes an area of concrete hard-standing currently used as a Household Recycling Centre (HRC) and other land within the curtilage of the landfill planning permission. The site is owned by Cory Environmental Ltd.

With respect to further potential projects within the JCS area, the County Council have advised that Household Recycling Centres (HRCs) are reaching capacity and therefore the need for additional capacity at Hempsted and Wingmoor Farm will need to be kept under review. No cost or funding information on required projects has been provided at this stage by the County.

Implementation

Successful implementation of infrastructure requires a well-managed infrastructure delivery framework which is monitored and managed by the relevant local planning authorities and updated regularly as infrastructure is delivered and new projects and requirements are developed and fully costed. This process should:

- Consider any changes to housing and employment trajectories;
- Record and update critical or priority infrastructure as the plan progresses;
- Regularly update costing information in order to analyse the associated funding gap and update any cost plans;
- Review funding arrangements, both from private and public funding sources;
- Keep a robust and appropriate plan for maximising developer contributions; and

- Be shared with various service providers in order that priorities are known and providers are aware of the most up to date trajectories and development proposals.

Implementation of infrastructure requirements will not be possible without monitoring and review of this delivery framework. This can be completed via the associated cost tracker.

Categorisation

The identified infrastructure projects have been categorised into four categories, reflecting the relative importance of that infrastructure in achieving growth. The categories include:

- *Regionally Critical Infrastructure* – Projects that have wider geographic area implications than the JCS which must happen to enable the delivery of growth within the JCS and beyond (i.e. critical to the JCS functioning as a whole with the potential also for the mitigation of cross boundary needs and effects).
- *Critical Infrastructure* – Projects that the study has identified which must happen to enable the delivery of growth within the JCS.
- *Essential Infrastructure* – Projects that are required if growth is to be achieved in a timely and sustainable manner.
- *Desirable Infrastructure* – Projects that are required for sustainable growth but is unlikely to prevent development in the short to medium term

The table below provides a summary of the total cost and categorisation of the various infrastructure needs identified. In the round, the IDP has taken a worst case scenario in relation to capital cost and therefore the data should be viewed optimistically in terms of potential to reduce capital cost implications.

Table 6 Cost Summary & Prioritisation

	Regionally Critical	Critical	Essential	Desirable	Total Costs	Secured match funding to date	Associated Funding Gap to date
Community & Cultural	£0	£0	£0	£26,400,000	£26,400,000	£657,700	£25,742,300
Education	£0	£0	£89,300,000	£0	£89,300,000	Being investigated	£89,300,000
Emergency Services	£0	£0	£20,000,000	£1,600,000	£21,600,000	Being investigated	£21,600,000
Energy (Utilities)	£0	£2,712,000	£0	£0	£2,712,000	Being investigated	£2,712,000
Flood Water & Waste Water	£0	£8,300,000	£0	£0	£8,300,000	Being investigated	£8,300,000
Healthcare	£0	£0	£23,800,000	£0	£23,800,000	Being investigated	£23,800,000
Recreation, Sports & Open	£0	£0	£14,546,000	£115,400,000	£129,946,000	Being investigated	£129,946,000

	Regionally Critical	Critical	Essential	Desirable	Total Costs	Secured match funding to date	Associated Funding Gap to date
Space							
Transport & Public Realm	£350,160,000	£26,700,000	£108,356,738	£26,350,000	£511,566,738	£71,280,000	£440,286,738
Waste	£0	£0	£0	£0	TBC	TBC	TBC
Total	£350,160,000	£37,712,000	£256,002,738	£169,750,000	£813,624,738	£71,937,700	£741,687,038

Source: Consultation with Infrastructure Providers, Benchmark Standards & Arup Cost Estimates.

This categorisation, with reference to the associated Project Tracker allows the JCS authorities to consider the infrastructure needs across the JCS area and begin a process of prioritisation, working alongside key delivery partners and developers. It is particularly important that the JCS authorities identify any ‘critical’ infrastructure necessary to deliver strategic growth. The project tracker identifies a high level programme for infrastructure projects and this can be contrasted with delivery programmes on key sites in order to prioritise investment.

Of those projects identified as being ‘regionally critical’ or ‘critical’ in the Project Tracker the majority are currently well advanced in design and funding commitment terms and a number will be under construction or constructed in line in the short to medium term.

Further work is necessary from a transport modelling perspective in order to fully analyse ‘critical’ schemes and their alignment in relation to strategic growth.

Prioritisation for Delivery

Infrastructure planning involves prioritisation at all stages and presents difficult choices in terms of which infrastructure is critical and therefore must be delivered in advance of other requirements. In general, prioritisation will reflect development viability, the availability of public sector funding as well as council and community priorities.

Developer Contributions

As part of the strategy for preparing and adopting a JCS CIL charging schedule, the councils will need to identify priorities for spending funds secured through CIL, and the IDP forms the initial basis of this prioritisation. The JCS authorities should develop a prioritisation process for the spending of any CIL and S106 monies, taking account of:

- Spatial growth projections and the anticipated phasing of strategic sites;
- The importance of physical infrastructure for enabling development; and
- Opportunities to deliver specific infrastructure through, for example, new funding opportunities.

Infrastructure categorised as critical, and related to the identified strategic locations should form the initial focus for investment, especially where required to enable (e.g. flood prevention, access road and utilities).

Public Sector Investment

Alongside developer contributions the JCS authorities will need to carefully manage and plan other key infrastructure and associated funding sources, ensuring that all delivery partners work together in order to achieve the vision set within the JCS and enable sustainable and managed growth.

Funding Gap

While the data presents a worst case funding gap within the JCS area of in excess of **£700 million** it must be considered in light of this future prioritisation along with the fact that some of the infrastructure requirements will be delivered at the cost of the developer and/or commercial operator (e.g. utilities infrastructure). There is also some regionally critical infrastructure where the need case goes beyond the JCS area and therefore the case for funding goes beyond development within the JCS to include other adjacent authorities. Other projects could clearly rely on other private and public funds including bids to central government, National Lottery and other sources.

It is also worth noting that limited information has been received to date on associated funding and therefore the JCS authorities should work closely with service providers and colleagues across various departments in order to ensure an up to date funding picture for projects identified in the Project Tracker.

The JCS authorities should therefore work to prioritise infrastructure development in order to focus efforts to reduce the identified funding gap. An important part of this process will be the forthcoming progression of CIL which will begin this prioritisation exercise and make clear the potential for developer contributions to infrastructure funding.

Funding

This report makes a high level assessment of funding that is available for infrastructure projects and assesses this against estimated capital costs. The assumptions in relation to funding have been informed through discussions with service providers and other stakeholders.

On this basis, it should be noted that further investigation of public sector funding sources is required as part of the iterative process required to update the IDP. The IDP Tracker should be updated with the clearer funding picture that will emerge following adoption of the JCS. This should be progressed through further consultation following adoption.

In order to meet the funding gap other funding sources and mechanisms will be required in order to offer a range of funding mechanisms to deliver infrastructure.

Management & Co-ordination

The successful delivery of sustainable and timely employment and housing growth across the JCS will be dependent on the evolution of the existing strong co-ordination, management and governance arrangements for the JCS into a more delivery focussed decision making structure.

The delivery of infrastructure projects should be coordinated through a dedicated and independent Joint Implementation Unit (JIU) with strong links into all three Local Authorities and the County. The JIU would be a co-located cross-authority. The terms of reference for the JIU would need to be defined as would its responsibilities. In addition more formal arrangements are required to engage and work with the full range of infrastructure delivery providers across the JCS. This will be particularly important in trying to deliver efficiencies through innovative approaches to service delivery such as co-location or shared services

Recommendations & Next Steps

The delivery of the infrastructure required to support new development and achieve the vision for the JCS area will rely on a wide range of public, private and third sector organisations working together effectively and efficiently. The JCS authorities have an important leadership role to play in this process as the JCS progresses towards adoption and the supporting IDP is refined.

For these reasons, infrastructure planning and delivery must be viewed as an iterative process with the IDP and associated Tracker reviewed and updated on a regular basis in order to reflect the on-going project development, funding situation and the views of key consultees. Key tasks which must be fulfilled by the JCS authorities therefore include:

- Continued liaison with delivery partners, developers and other key stakeholders in order to understand priorities, programmes and delivery plans;
- Utilise the findings within the IDP and Tracker and work with service providers to explore and identify innovative solutions to infrastructure needs that potentially reduce costs. This could include, for example, collocated facilities or expansion of existing facilities over new build.
- Further work on associated funding in order to updated funding gap information;
- Regular updates to the IDP and associated Tracker as a ‘live process’ which will lead to improved accuracy and outcomes of the process;
- Meetings and workshops which focus on particular key infrastructure needs and/or strategic sites, particularly where cross-sectoral working is required;
- Monitoring of local plan policy in relation to infrastructure.

Alongside these key roles, the JCS authorities should progress work in relation to their CIL charging schedule in order to explore issues and options relating to the interface between the setting of CIL moving forward. This should include consultation with developers, landowners and the public on the proposed charging schedule.

At present there may seem to be more questions than answers raised by the process. This is perfectly normal given infrastructure planning is an iterative process. Perhaps of greatest importance for the JCS authorities is the need to begin to prioritise infrastructure needs and projects and further understand the potential funding situation in order to continue to develop a funding gap model for the JCS area.

For further information on
this report please contact:

Wayne Dyer

63, St Thomas Street
Bristol
BS1 6JZ

t +44 (0) 117 976 5432
e wayne.dyer@arup.com

www.arup.com